Relationship Between Junior High School Science Teachers’ Understanding Of Inquiry Learning Based On Their Teaching Experience And School Type

Suciati¹, Chrisnia Octovi², Dyah Pitaloka³
Biology Education Department, Sebelas Maret University¹
STKIP Modern Ngawi²
SMP N 1 Surakarta³
suciati.sudarisman@yahoo.com

Abstract: Inquiry is the soul of science as one of the main goals of learning science, therefore every science teachers ideally with a good understanding on inquiry learning. This study aims to determine the relationship between junior high school science teachers' understanding of inquiry learning based on their teaching experience and type of school. This research is descriptive research. The population was all science teacher of Junior High School in Surakarta, sample consisted of 39 science teachers as represent from 39 of different schools (public school and private school) were taken using purpose sampling. Public school is type of school which financial and educators supported by government, private school is particular school which independent financial and educators supply. Teaching experience was classified into 4 categories: category 1 (0 until 3 years experience in teaching); category 2 (4 until 9 years experience in teaching); category 3 (10 until 14 years experience in teaching); and category 4 (15 until 30 years experience in teaching). Data collecting were using test technique to determine science teachers' understanding of inquiry learning based on their teaching experience and non-test technique by using questionnaire to find out the teachers' understanding of inquiry learning based on their school type. Data of science teachers' understanding of inquiry learning based on their teaching experience was analyzed as quantitative methods by using product moment correlation test of Karl Pearson, and data of science teachers' understanding of inquiry learning based on their school type was analyzed as qualitative methods. The results showed that: 1) There is no significant relationship between junior high school science teachers’ understanding of inquiry learning based on their teaching experience (sig. 0.885> 0.05); 2) There is no significant relationship between junior high school science teachers’ understanding of inquiry learning based on their school type (sig. 0.154> 0.05); 3) There is no significant relationship between teaching experience and school type (sig. 0.122> 0.05). Based on the results of this study can be concluded that there is no relationship between junior high school science teachers' understanding of inquiry learning based on their teaching experience and school type.

Keywords: teaching experience, school type, junior high school science teachers’ understanding of inquiry learning

I. INTRODUCTION

Implementation of formal education at all levels can be held through public and private schools. Public schools organized by the government, known as public schools. However, due to the limited capacity of public schools, it can also be implemented through private schools. Although the same curriculum standards, but in practice can differ. This is because the quality of learning is influenced by several factors, one of the important factors that influence the teachers’ experience in teaching. In the context of the science learning, the teacher is not only required seniority in teaching, which more important is how teachers teach the appropriate nature of science teaching which refers to three things: process, product, and attitude. The science teacher is required to encourage students to build concepts
independently through inquiry. This is relevant to the purpose of learning science in recent curriculum (2013) that the inquiry be an integral part in learning science. So that science teachers’ understanding of inquiry learning contributed to science learning objectives achievement successfully. All science teachers (novice and senior teachers) either taught in public and private schools should ideally have adequate ability in teaching inquiry-based science material which becomes the spirit of learning science. Based on these, the research has focused on the relationship between science teachers' understanding of inquiry learning based on their teaching experience and schools types.

II. PURPOSE OF STUDY

This study aims to determine the relationship between science teachers' understanding of inquiry learning based on their teaching experience and schools types. This aims to answer questions: 1) How the relationship between science teachers' understanding of inquiry learning based on their teaching experience; 2) How the relationship between science teachers' understanding of inquiry learning based on their school type; 3) How the relationship between teaching experience and type of school.

III. METHODOLOGY

This research is descriptive research. The population was all science teacher of Junior High School in Surakarta, sample consisted of 39 science teachers as represent from 39 of different schools were taken using purpose sampling. Data collecting were using test technique to determine science teachers' understanding of inquiry learning based on their teaching experience and non-test technique by using questionnaire to find out the teachers' understanding of inquiry learning based on their school type. Data of science teachers' understanding of inquiry learning based on their teaching experience was analyzed as quantitative methods by using product moment correlation test of Karl Pearson, and data of science teachers' understanding of inquiry learning based on their school type was analyzed as qualitative methods.

IV. RESULTS

Science teachers who were respondents in this study categorized based on his/her experience in teaching into 4 categories (X1 variable) as shown in Figure 1.

![Figure 1. Teaching Experience](image)

Figure 1 showed teaching experience category 1 (0 until 3 years experience in teaching) with frequency of 4 persons, category 2 (4 until 9 years experience in teaching) with frequency of 7 persons, category 3 (10 until 14 years experience in teaching) with frequency of 11 persons, and category 4 (15 until 30 years experience in teaching) with frequency of 17 persons.

School type categorized into 2 types as public school and private school (X2 variable) shown in Figure 2.
Figure 2. School Type

Figure 2 showed public school teacher with frequency of 17 persons and private school teacher with frequency of 22 persons.

Junior high school science teachers’ understanding of inquiry learning (Y variable) as shown in Figure 3.

Figure 3. Inquiry Learning Understanding of Junior High School Science Teachers

Figure 3 showed data of Junior high school science teachers’ inquiry learning understanding. 15 persons with very good category (score 80), 5 persons with good category (score 75), 13 persons with moderate category (score 70), 2 persons with less category (score 65), and 4 persons with very less category (score 60).

Results of correlation product moment test of Karl Pearson shown to investigate the relationship between teaching experience and school type toward junior high school science teachers’ inquiry learning understanding shown as Tabla 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Correlation</th>
<th>Decision</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y with X1</td>
<td>0.885&gt;0.05</td>
<td>no significant</td>
<td>no relationship</td>
</tr>
<tr>
<td>Y with X2</td>
<td>0.154&gt;0.05</td>
<td>no significant</td>
<td>no relationship</td>
</tr>
<tr>
<td>X1 with X2</td>
<td>0.122&gt;0.05</td>
<td>no significant</td>
<td>no relationship</td>
</tr>
</tbody>
</table>

Table 1 showed that: 1) There is no significant relationship between junior high school science teachers’ understanding of inquiry learning (Y) based on their teaching experience (X1) (sig. 0.885> 0.05); 2) There is no significant relationship between junior high school science teachers’ understanding of inquiry learning (Y) based on their school type (X2) (sig. 0.154> 0.05); 3) There is no significant relationship between teaching experience (X1) and school type (X2) (sig. 0.122> 0.05).
V. DISCUSSION

1) Relationship between junior high school science teachers’ understanding of inquiry learning based on their teaching experience.

There is no significant relationship between junior high school science teachers’ understanding of inquiry learning based on their teaching experience (sig. 0.885 > 0.05). This is because although the teachers have to understand about the concept of inquiry but the teacher has not been accustomed to use in learning. Interviews showed that teachers in addition to having difficulty applying it in learning. Teachers are generally less certain whether the inquiry learning undertaken will be successful. It is relevant to Colburn (2000) stated that factually, more science teachers aren’t using it in their classroom. Colburns’ research showed that the most common reasons, one of its reasons confusion about the meaning of inquiry. It is supported by questioner data that: 1) correct answer (category 1) with frequency of 23%; 2) almost correct answer (category 2) with frequency of 28%; 3) inaccurate answer (category 3) with frequency of 23%; 4) not exactly answer with frequency of 5%; 5) false answer (category 5) with frequency of 15%. It’s mean that teaching experience is not assurance teachers teach refers the nature of science by using inquiry.

2) Relationship between junior high school science teachers’ understanding of inquiry learning based on their school type.

There is no significant relationship between junior high school science teachers’ understanding of inquiry learning based on their school type (sig. 0.154 > 0.05). Following the definition in the PISA, that a private school (also known as an independent school) is a school whose affairs are under the control of a private entity. Private high school must offer the same curriculum as the public sector in order to confer provincial secondary diplomas (Frenette, M. & Chan, P.C.W, 2015). Public schools and colleges managed by provincial governments or local bodies. Private schools managed by charities/missionaries (Burki, 1986). In Indonesia, types of schools can’t be used as a reference related to the quality of learning. This is because there are some private schools are more complete and sophisticated learning facilities compared to public schools. Instead there are many private schools that quality is far below public school facilities both in terms of learning and teacher competency. Iqbal, M (2012) stated that teachers in public schools are highly qualified, experienced, and have people-oriented/democratic leadership style. It may be use to the better facilities in public schools in form of resources, laboratories and trained teaching staff. On the other hand most of the head teachers in private sector are less qualified, untrained and inexperienced. They tend to be task oriented and authoritative having all decision making powers in their own hands. The other hands Liaqat (2009) found in her study that quality of teaching is better in private schools as compared to public schools and the teachers of private schools prepared lesson plans before teaching as compared to public schools. Teachers of both types of schools are fully aware about the advantages and effectiveness of teaching aids. Both types of school teachers use teaching aids. However, the teachers of private schools use more teaching aids and models comparatively (Abid, et al., 1993).

Interviews showed that the root causes of the lack of understanding about inquiry learning of science teacher not about learning science, but rather due to the difficulties of teachers in implementing inquiry learning in the classroom. Search results from answer the questionnaire revealed that the difficulties teachers are generally due to limited learning facilities related instruments lab work (56 %), difficulties in student management (33 %), misperception of teachers that inquiry learning is only suitable for children high abilities (51 %). At the end of the interview the respondents stated that the science teacher basically did not mind applying inquiry learning, but still need the guidance (79 %). The science education community has embraced no idea more widely than inquiry or inquiry-based instruction. There are several approaches of inquiry-based instruction including: structured inquiry, guided inquiry, open inquiry, and learning cycle. Inquiry-based instruction is the creation of a classroom where students are engaged in essentially open-ended, student-centered, hands-on activities (Colburn, 2000).

3) Relationship between teaching experience and school type.

There is no significant relationship between teaching experience and school type (sig. 0.122 > 0.05). There are terms: "experience is the best teacher ". In the education context, experience at least influenced especially on teaching and learning process. According to Scharter (2006) teacher experience has only a small effect on student learning. While many studies have established that experienced teachers (those with less than two years of experience) are typically less effective than more senior teachers, the benefits of experience appear to level off after about five years.
VI. CONCLUSION

Based on the results of this study can be concluded that there is no relationship between junior high school science teachers' understanding of inquiry learning based on their teaching experience and school type.

REFERENCES


