

Student's Perspective toward the Activities Learning Process at Senior High School in West Sumatera

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Abstract: This study aimed to determine the differences of science learning activities based on demographic factors of socioeconomic status and the location of the school. Research methodology, a number of respondents have responded to a given instrument, the sample is taken proportional. The data analysis is using one way ANOVA test. The results showed that there are significant differences, especially science learning activities in the classroom based on socioeconomic status (high, medium and low). When there are significant differences of activity the learning process of science, especially science literacy, support and guidance of teachers, academic motivation, based on the location of the school (in the city, suburbs and out of town). Learning science in the classroom based on socioeconomic status better students who come from lower economic status of the students and overall there are significant differences science learning activities based on the location of the school in the city with students outside of the city. Detailed the differences in science learning activities based on the location of the school is science literacy, support and guidance of teachers and academic motivation, those who attend school outside the city showed a good learning science compared with students outside of the city and suburban students. The implications of this research, learning science in the city, outside the city and suburbs is expected to be implemented using the facilities evenly. Besides, the quality of teachers is also given attention especially educational equity, and training courses so that teachers have the same ability.

Keywords: Student Perspectives, Science, Learning Activities, Senior high school

Introduction

The process of teaching and learning in the classroom as the knowledge removal process and obtaining cultures from the teacher to the student. Through this limitation, it is considered as subcultures science of western, and science of the west (Western science,) is subcultures of the science. According to anthropological perspective, science teaching is seen as the cultural transmission and mastery learning of cultural acquisition. Teaching and learning are fun to give effect to the satisfaction of teachers and students. The quality condition of the can affect students' satisfaction and teachers in the context of education (Guolla 1999).

Ogunnyi, Jegede, and Ogawa, (1995) also said that the atmosphere of learning and teaching that have meaningful and contextual background greatly influenced by the culture brought by teachers and students in the classroom, especially at the time of the learning process of science.

Method of learning that occurs in the laboratory is Expository teacher-center and labor activities undertaken following the steps listed under the supervision of the teacher. According to Pyatt and Sims (2007) that in the laboratory the students are not given the opportunity to try and create their own understanding of the phenomenon under investigation. To examine the effectiveness of learning, research was conducted by Hafstein and Mamlok-Naaman (2007) asserts that in helping the cognitive improvement of student achievement, affective and psychomotor can use the laboratory activities in the science education.

Vygotsky's theory emphasizes that the social environment as something which can accelerate the learning process and the development of a person (Schunk 2004), methods, how the students interact with their environment, causes transformation in their thinking. The concept and constructed responses related to the environment. Therefore, the school not only consist of buildings a structure alone, but also the institutions that promote the learning and realizing the feeling of having among its members. For the process of learning activity, interpersonal relationships at school are very important to realize a useful experience for students.

The concept of "literacy" related to information literacy. Following the concept Bawden (2001) that information literacy is associated with other types of literacy-related, but it must be distinguished from the others, especially from the information technology, media literacy, literacy circuits, digital literacy, Internet literacy or circuits, "Computer Literacy" and "Media Literacy"

Formulation of the Problem

1. How stage student's learning activities of science at senior high school ?

2. Are there differences in science learning activities based on socioeconomic status factors and location of the school

Research Objectives

1. Knowing the stage of students' learning activities of science in senior high school
2. Knowing the differences in science learning activities based on socioeconomic status factors and location of the school

Hypothesis

HO. There is not difference of science learning activities based on factors of socioeconomic status demographic

HO1. There is no difference of science learning activities based on factors socioeconomic status demographic

HO2. There is no differences in science learning activities process based on factors of school location

HO.1.1 There is no differences in science literacy based on factors of school location

HO.1.2 There is no differences of learning of teacher guidance based on factors of school location

HO.1.3 There is no differences of academic motivation based on factors of school location

Literature Review

The result of research was conducted by Larson, as quoted by Aikenhead and Jegede (1999) provide other useful information. He found that although the learning process of assimilation does not make students to be alienated from their culture, but it still would alienate students of science. The clever ways were used by students to pass the exam, not to understand science significantly, as may be considered by the teacher. A proximal development zone is the distance between what students should make themselves to learning so that they can be competent from the assistance of learning (Raymond, 2000). Scaffolding teaching strategy provides support and assistance individually based on students' proximal development zone (Chang, Sung, and Chen 2002).

The activities that are provided when scaffolding is challenging activities of students' effort to do their task alone (Olson and Pratt 2000). If only one student can complete just one task under helping, he is said to have been assisted through proximal development zone through Scaffolding (Bransford, Brown, and Cocking, 2000)

Where the one's efforts increase, scaffolding can be obtained beyond of teacher knowledge thus in the end a student can complete their task alone without depend to other (Chang, Sung, and Chen 2002). For that reason, the aim of students in using scaffolding strategy in order to do an independent teaching and enable to solve the problem of teaching (Hartman 2002).

The concept of "literacy" related to information literacy. The Information literacy is associated with other types of literacy-related, but it must be distinguished from the others, especially from the information technology, media literacy, literacy circuits, digital literacy, Internet literacy or circuits, "Computer Literacy" and "Media Literacy" (Bawden, 2001).

The definition of literacy is the principle of "the state of literacy according to Chambers English Dictionary (2003). Language in education, "Literacy Principles" means classical or traditional literacy about learning about how to read, to write, and to make estimates and operating figures; literacy principles in all communities in the atmosphere of formal teaching and secondary education, especially public schools or private, but sometimes these principles literacy occupied the students at home or in the community centers.

In general, attempts to define "Information Literacy" has been done for several years, most of the librarians or professionals related to library science, there are more similarities than differences in these definitions. (Owusu-Ansah, 2003). Urgency effort to understand the development of reading ability and text structure and comprehension strategies can also be associated with learning pillars of UNESCO, those are learning to know, the student must also occur learning to do (Depdiknas, 2001). The two revealed that the how importance of "learn how to learn" for students.

In PISA, reading literacy define as the ability of using the written information with the factual situation of the life. The ability of manage the thinking skill, reflection and reading all the goal of situation, it can add student's development of knowledge and society skill (OECD, 2003). At the performative level, people are able to read and write, and speak by using the symbols, at the functional level are expected to use the language to meet the needs of daily living such as reading manuals or instructions; expected at the informational level can access the knowledge of the language, while the epistemic level is expected to transform knowledge (Diknas, 2004).

Middley (1993) says that the change of motivation was caused by the characteristics of the learning environment experienced by students. Although it is difficult to know exactly how student's motivation, research showed that there are common dimensions that can be applied to most students. Emphasis is given to

the role of the teacher as trigger factors to students' motivation and selfmotivated students as a precipitating factor (Santrock 2001)

Methodology

This study used a survey methods, instruments as the primary data collection tool, the population of study is all senior high school students of science at XI grade in West Sumatra of Indonesia. Samples were determined by proportional sampling zone. A number of sample of this research are 448 people. The analysis data used Inference data analysis by using one way ANOVA test.

Results

The results of research showed that learning stage of science in senior high school students are at a high stage. However, there are two science learning activities that are at the stage of being that academic motivation (min = 3.66, SD = 0.41) and obtain support materials of learning. Science also at the stage of being (min = 3.65, SD = 0.67) as the following table 1:

Table 1 The stage of science learning activities to senior high school students and its interpretation

Science Learning Activities	Mean	SD	Interpretation
Learning in the classroom	4.11	0.47	High
Learning in the laboratory	4.23	0.45	High
Science literacy	4.02	0.45	High
Get support material	3.65	0.67	Fair
Teachers' guidance	4.06	0.40	High
Parents' support	3.84	0.47	High
Academic motivation	3.66	0.41	Fair

Furthermore, the decision of the hala ANOVA test showed that significant differences between elements of learning in the classroom, learning laboratory, scientific literacy, getting material support, teachers' support and guidance, parental support, academic motivation and learning activities of science as a whole, based on social status economy as shown in Table 2

Table 2 The Differences Analysis of science learning activities elements Based on the socioeconomic status

EAPPS dan APPS	Sources	DK	JDK	MDK	F	Sig. p
Science learning in the classroom	Intra Group	4	2.024	0.506	2.242	0.04
	Inter Group	434	100.209	0.226		
	Total	438	102.233			
Science learning in the laboratorium	Intra Group	4	0.236	0.059	0.288	0.88
	Inter Group	434	91.018	0.205		
	Total	438	91.254			
Science Literacy	Intra Group	4	.394	0.098	0.474	0.75
	Inter Group	434	92.132	0.208		
	Total	438	92.525			
Get support material	Intra Group	4	2.124	0.531	1.171	0.32
	Inter Group	434	201.376	0.454		
	Total	438	203.500			
Support from teacher guidance	Intra Group	4	0.909	0.227	1.368	0.24
	Inter Group	434	73.749	0.166		
	Total	438	74.658			
Parents' support	Intra Group	4	1.026	0.256	1.144	0.33
	Inter Group	434	99.488	0.224		
	Total	438	100.514			
Academic Motivation	Intra Group	4	0.331	0.083	0.476	0.75
	Inter Group	434	77.023	0.173		
	Total	438	77.354			

APPS	Intra Group	4	0.017	0.004	0.051	0.99
	Inter Group	434	36.680	0.083		
	Total	438	36.697			

Signifikan to the formulation of $p < 0.050$

Based on the socioeconomic status, one way ANOVA test, Table 2 showed a significant difference in confidence interval between 95% ($F = 2, 448 = 2,242, p = 0.04$) in terms of the science learning process in the classroom of senior high school based on the location of the school. Therefore $H_0.1$ was rejected, this decision means that the student agree on science learning activities in the classroom is different in other senior high school in West Sumatra. The examination did in Turkey showed that there are significant differences in the activity of learning science among students that the high economic status of students with low economic status mean Difference (I-J) = -0.07, $p = 0.03$). Nevertheless there is no significant difference in the learning process of science activities toward other elements among senior high school students following the socioeconomic status.

Furthermore, the decision of the hala ANOVA test for significant differences of elements can be seen in the classroom learning, laboratory learning elements, elements of scientific literacy, elements of getting material support, guidance support of teachers, parents' support elements, elements of academic motivation and science learning activities based on the location of the school as indicated in Table 3

Overall one way ANOVA test analysis of the data, showed there are significant differences in confidence between 95% ($F 2, 448 = 3,666, p = 0.026$) in terms of students' science learning activities in senior high school based on the location of the school. Therefore rejected the hypothesis $H_0.2$. This decision means that the students agree on the activity of the learning process of science is different at senior high school in West Sumatra. Exam. Other research in Turkey showed that there are significant differences in the activity of learning science among school students located in city schools with students who are located outside of the city mean Difference (I-J) = -0.09, $p = 0.02$).

Detailed analysis of the one way ANOVA test in Table 2 indicate a significant difference at 95% confidence between ($F 2, 448 = 3,158, p = 0.043$) in terms of academic motivation in senior high school students based on the location of the school. Therefore $H_0.2.3$ was rejected. This decision means that the students agree on the activity of the learning process of science is different with academic design and motivation in West Sumatra. Exam Turkey HSD showed that there are significant differences in academic motivation among students who reside in the city with students who reside outside the city (mean Difference (I-J) = -0.11, $p = 0.05$).

The analysis of the one way ANOVA test in Table 3 showed a significant difference in confidence level between 95% ($F 2, 448 = 3,021, p = 0.050$) in terms of support and guidance. Science teachers observed based on the location of the school. The decision of have an important meanings student and teacher directly involved in doing the science learning process. Therefore $H_0. 2$ is rejected. This decision means that all students agree on the activity of the learning process of science is different from support and guidance of teacher. Science teacher at a senior high school in West Sumatra. Turkey Examination of HSD showed that there are significant differences in the teachers' support and guidance among students studied in the city with students study outside of the city (min Difference (IJ) = -0.12, $p = 0:03$).

The examination of the one way ANOVA test in Table 3 showed that there is no significant difference in confidence level of 95% ($F 2, 448 = 0842, p = 0432$) in terms of the learning of science in senior high school class based on the location of the school. Therefore, hypothesis H_01 is accepted. This decision stated that the learning process of science can be accepted based on school location and learning strategy of science in junior high school class at junior high school class in West Sumatra.

Table 3. The differential Analysis of activities elements in the science learning activities

EAPPS dan APPS			Sources	DK	JDK	MDK	F	sig. p
Science learning in the classroom	Intra Group		2	0.384	0.192	0.842	0.432	
	Inter Group		446	101.849	0.228			
	Total		448	102.233				
Science learning in the laboratorium	Intra Group		2	1.108	0.554	2.742	0.066	
	Inter Group		446	90.146	0.202			
	Total.		448	91.254				
Science Literacy	Intra Group		2	2.513	1.257	6.227	0.002	

	Inter Group	446	90.012	0.202		
	Total	448	92.525			
Get support material	Intra Group	2	0.253	0.126	0.277	0.758
	Inter Group	446	203.248	0.456		
	Total	448	203.500			
Support from teacher guidance	Intra Group	2	0.998	0.499	3.021	0.050
			73.660	0.165		
	Inter Group	446	73.660			
	Total	448	74.658	0.243		
Parents' support	Intra Group	2	0.487	0.224	1.085	0.339
	Inter Group	446	100.027			
	Total	448	100.514	0.540		
Academic Motivation	Intra Group	2	1.080	0.171	3.158	0.043
	Inter Group	446	76.274			
	Total	448	77.354	0.297		
APPS	Intra Group	2	0.594	0.081	3.666	0.026
	Inter Group	446	36.103			
	Total	448	36.697			

Signifikaca of the research $p < 0.050$

Analysis of one-way ANOVA test in Table 3 indicated that there is a significant difference at 95% confidence level between (F 2, 448 = 6,227, $p = 0.002$) which science literacy among senior high school students based on the location of the school. Therefore H02 is a hypothesis is rejected. This decision means students agree to the science learning process activity is different scientific literacy design at senior high school in West Sumatra. Furthermore, Turkey HSD test showed that there are significant differences in science literacy among students who attend school in the city with students who attend school outside the city. Differences min (I-J) = -0.19, ($p = 0.001$) and there is a significant difference in science literacy among students who attend school in the suburbs with students who attend school outside of the city mean Difference (I-J) = -0.14, $p = 0.039$).

Conclusions and Discussion

The results showed that the stage of science learning is at a high stage, when two elements of science learning were at the fair stage those are getting material support and academic motivation. Based on students' socioeconomic status factors there are significant differences between students of high socioeconomic status with lower economic status. Nasser (2007) says that the religion is one powerful factor influencing the success of teachers in teaching sessions in the classroom. Based on the view, Nasser affect teachers in some circumstances, namely in discussing issues related to science, technology and society, they choose teaching methods and styles of teacher-student interaction. On the state of the country want to produce powerful thinking person critic and creative, the issue needs to be the foundation, even in this case should emphasize the science education curriculum. Pedersen and Totten (2001) asserted that the current schools have responsibility to engage students with a thorough research on the relationship between the social aspects of the development of science and technology. A school also has responsibility to help students understand various social issues, particularly their responsibility to run the science curriculum.

With regards to the location of the school, this study found there is no significant difference in the classroom and laboratory learning among students. It means that students' school located in a city with students' school located in the suburbs and outside the city have the same learning process of science, in contrast to Johnson (2002) says that the emphasis on action learning or real experience will provide opportunities for students to feel their thinking about outside world, the direct physical action can save the information in their

memory longer. Students have received a number of teacher knowledge is not just information alone, while they are not in the habit to find that information. Therefore, the knowledge will quickly be forgotten.

Besides Crawford (2001), this confirms that the strategy can be done through the activity to experience the laboratory learning, problem-solving activities and project activities. Crawford also stated that connects and contextual experience are two strategies that can improve their achievement of the time in learning a new concepts. Blank and Harwell (2001) also stated that the students work in the laboratory, at home or in a group, they will learn from each other, awaken understanding and tolerance.

The results of this study indicated that there are significant differences in scientific literacy among students who attend school in the city with students outside of the city. In addition, based on Erman's study. et al (2009) who found significant differences student science literacy activity based on their school location, scientific literacy of students in outside of town is higher than the city.

Support and teachers' guidance based on the location of the school also are differences. All science teachers taught in senior high school in West Sumatra already quite experienced in providing the science learning activities. Spector research results and Strong (2001) which consisted than 131 primary school teachers who attend classes in the science methods just fulfill the precondition of college as a qualified college.

Overall the science learning activities based on the location of the school there are significant differences between students in the city with students whose schools outside of the city. The provisional estimates from this study because the facility is likely to be better in the city than outside the city. Therefore, it needs attention and equalization facilities such as laboratories, books and other facilities related to academic.

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