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IMPLEMENTATION OF LITERACY CULTURE TO IMPROVE CHEMISTRY LEARNING OUTCOMES

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Abstract: This study aims to examine the influence of the implementation of literacy culture on improving chemistry learning outcomes in class X students of SMA Negeri 7 Jayapura. In this context, the School Literacy Movement (GLS) is required to foster a culture of reading non-lesson books for 10-15 minutes before learning starts. The method used is *purposive sampling*, with data collection techniques in the form of questionnaires (questionnaires) for literacy culture and cognitive tests for learning outcomes. The results of the study show that the implementation of literacy culture in class X of SMA Negeri 7 Jayapura can improve chemistry learning outcomes with an average n-gain value of 0.52 which is in the medium category. However, the results of correlation and regression analysis showed that the literacy culture variable (X_3) had a non-significant effect on learning outcomes (Y). The correlation coefficient (R) is very low, which is 0.005.
Keywords: Literacy Culture, Chemistry Learning Outcomes, School Literacy Movement (GLS), Scope of Chemistry.

1. INTRODUCTION

Senior High School (SMA) students have the potential and competence to compete with students from developed countries in the fields of mathematics, science, and reading. Based on the results of studies and empirical experience, it is known that reading is one of the keys to the success of students in these developed countries. However, the reading habits of high school students in Indonesia in general, and in Papua in particular, have not developed into a strong culture (Sukardi, 2020). For this reason, reading habits need to be developed in schools as part of high school education.

As an effort to foster a literacy culture, the Directorate of High School Development developed a program to increase reading interest through the School Literacy Movement (GLS). This program facilitates the involvement of all school residents and stakeholders to cultivate reading activities among students. In line with that, the Ministry of Education and Culture issued Permendikbud No. 23 of 2015 concerning the Growth of Ethics, which requires students to read non-lesson books for 10-15 minutes

before learning begins. GLS aims to shape a culture of analytical, critical, and reflective reading and writing, as well as create a lifelong learning environment.

Although it seems easy to implement, the implementation of GLS in schools faces many obstacles. Not all schools have the same capacity to create an environment that supports literacy. According to Permendikbud No. 23 of 2016, the assessment of learning outcomes includes aspects of attitudes, knowledge, and skills. This assessment is carried out on an ongoing basis by educators and educational units to measure the achievement of students' competencies.

Furthermore, Permendikbud No. 24 of 2016 explains that the subject of Chemistry in high school is a continuation of science in junior high school and covers various aspects, such as changes in matter, energy, structure and function of living organs, as well as their relationship with the environment, technology, and society. The assessment of Chemistry learning outcomes must consider the characteristics of Chemistry as attitudes, processes, and products. However, the reality in the field shows that some Chemistry teachers lack to integrate these characteristics in learning and assessment of learning outcomes (Suryani, 2020).

The results of observations at SMA Negeri 7 Jayapura show the low interest and learning achievement of students in the subject of Chemistry. Of the 41 students, 25% said they did not like Chemistry, 37% thought Chemistry was difficult, 89% said the teacher only gave lectures, 25% said the teacher did not conduct experiments, and 31% said the questions given were irrelevant. The results of the Odd Mid-Semester Exam for the 2024/2025 Academic Year reinforce this condition, where only 23% of students achieve scores above the Minimum Completeness Criteria (KKM), while the other 77% have not completed.

Papua, including Jayapura City, shows a low literacy rate. According to the Head of the Papua Provincial Regional Library and Archives Agency, Hans Hamadi, the reading interest of the people in Papua is only 0.1% per year (tabloidjubi.com/2021). The Head of the Jayapura City Education Office also acknowledged the low interest in reading in the region. Some of the causes include inadequate library facilities, limited number of reference books, school libraries that are not optimal, and the absence of literacy culture development programs.

2. RESEARCH METHODS

The method used in this study is the purposive sampling method. The main data collection techniques are questionnaires and learning outcome tests. The questionnaire used the Likert scale to measure respondents' attitudes and perceptions about the implementation of literacy culture. The learning outcome test uses a multiple-choice cognitive test for chemistry scope material. The research instruments were tested for validity and reliability:

a. Validity Test: Using the Pearson Product Moment correlation formula. Of the 27 items of literacy culture instruments, 23 items were declared valid. Of the 20 learning outcome instruments, 16 were declared valid.
b. Reliability Test: Using the Spearman Brown formula and checked with Cronbach's Alpha. The literacy culture instrument has an Alpha Cronbach value of 0.747 (reliable), and the learning outcome instrument has an Alpha Cronbach value of 0.949 (reliable).

The Data Analysis technique uses Pearson Product Moment (PPM) correlation analysis and regression analysis to test the hypothesis. To measure the improvement of student learning outcomes, the n-Gain calculation (the difference between *post-test* and *pre-test scores is used*).

3. RESULTS AND DISCUSSION

Correlation and Regression Test Results

The results of the correlation analysis between literacy culture and chemistry learning outcomes showed a correlation coefficient (R) of 0.005. This value indicates a very low level of relationship. The partial significance test (t-test) yielded a value of 0.075 with a significance level of 0.940. Because the ttable < calculation (0.075 < 1.960) and the significance level > 5% (0.940 > 0.05), it was concluded that the literacy culture variable had a insignificant effect on chemistry learning outcomes. The simple regression equation is $Y = 72.958 + 0.007\ X_3$. The value of the determination coefficient (R_2) was 0.000%, which means that only 0.000% of the variation in learning outcomes was influenced by literacy culture. The results of the correlation and regression statistical test are shown in Table 1.

Table 1. Statistical Results of Correlation and Regression

Independent Variables	Correlation Coefficient (R)	Coefficient of Determination (R_2)	t-count	t-table (df=...)	p-value (Sig.)	Information
Literacy Culture (X_3) on Learning Outcomes (Y)	0.005%	0.000%	0.075	1.960	0.940	Insignificant
Regression equations	Y=72.958+0.007 X_3					

The results of this insignificant analysis (Table 1) are due to the nature of the implementation of the literacy culture that is applied. Literacy culture in schools, according to policy, is more geared towards getting students to develop an interest in reading and improve reading skills, through 10-15 minutes of reading non-lesson books (materials containing ethical values) before learning time begins. Because the books read are non-lesson books, these activities have a very low and insignificant correlation with the learning outcomes of chemistry-scope material. Limitations in the implementation of literacy culture were also found, such as the lack of school reading facilities, lack of reading motivation, and lack of reading resources.

Although the effect was not significant, the improvement in learning outcomes still occurred. The average *pre-test* score is 41.82 and *the post-test* score is 74.08. The results of the n-Gain calculation showed an increase of 0.52. This number is between 0.3 and 0.7, which is categorized as moderate concept mastery. The data on the average value and the calculation of n-gain are shown in Table 2.

Table 2. Data on the average value and calculation of n-gain

Measurement	Grade Point Average	n-Gain	Category n-Gain
Pre-test	41.82	0.52	Keep
Post-test	74.08		

The average increase in visual learning outcomes is shown in Figure 1.

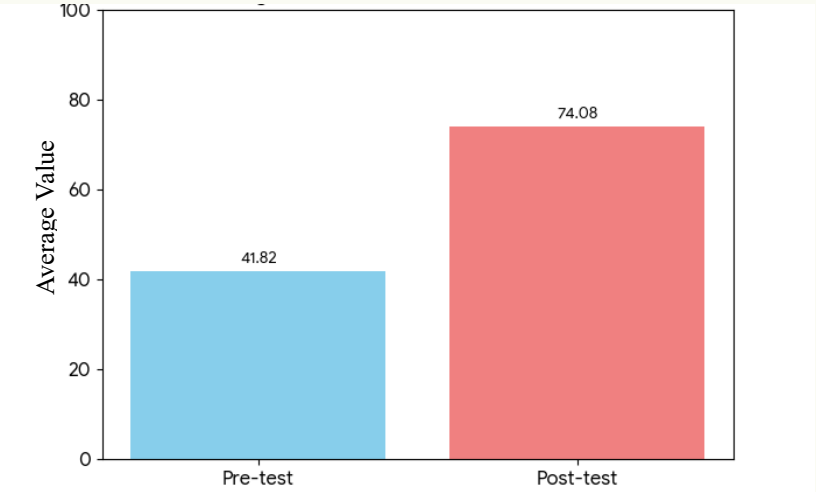

Figure 1. Average improvement in visual learning outcomes

This increase (Figure 1) shows that the learning process that takes place, regardless of the implementation of literacy culture (non-lesson reading), still has an impact on improving students' knowledge. This is in line with the research of Frita Dwi Lestari et al. (2021) which shows that the literacy culture integrated in science learning in elementary schools has a significant effect on learning outcomes. Similarly, research by St. Fatimah Azzahra et al. (2025) found that reading literacy skills have a significant effect on chemistry learning achievement. The same thing is said in the research of Joko Waluyo et al. (2018) that literacy culture can improve biology learning outcomes of class X students of SMA Negeri 4 Jayapura.

4. CONCLUSIONS AND SUGGESTIONS

CONCLUSION

The implementation of literacy culture in class X of SMA Negeri 7 Jayapura can improve chemistry learning outcomes in chemistry scope materials with an average n-gain of 0.52 which is in the medium category.

SUGGESTION

Literacy culture in schools is highly expected so that students are more enthusiastic about learning and can make a more significant contribution to students' cognitive learning outcomes.

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BIBLIOGRAPHY

Kementerian Pendidikan dan Kebudayaan. (2015). Peraturan Menteri No 23 Tahun 2015 tentang Penumbuhan Budi Pekerti dan Gerakan Literasi Sekolah. Jakarta: Kementerian Pendidikan dan Kebudayaan.

Kementerian Pendidikan dan Kebudayaan. (2016). Peraturan Menteri No 23 Tahun 2016 tentang Penilaian Hasil Belajar oleh Pendidik dan Satuan Pendidikan pada Pendidikan Dasar dan Menengah. Jakarta: Kementerian Pendidikan dan Kebudayaan.

Lestari, F. D., Ibrahim, M., Ghufron, S., & Mariati, P. (2021). Pengaruh Budaya Literasi terhadap Hasil Belajar IPA di Sekolah Dasar. *Jurnal Basicedu*, *5*(6), 5087–5099. https://doi.org/10.31004/basicedu.v5i6.1436

St Fatimah Azzahra & Nova Irawati Simatupang. (2025). The Effect of Reading Literacy Ability of Prospective Chemistry Teachers on Chemistry Learning Achievement. *Asian Research Journal of Arts & Social Sciences*, *23*(4), 249–257. https://doi.org/10.9734/arjass/2025/v23i4675

Sukardi, A. (2020). Pengembangan budaya literasi di sekolah-sekolah di Indonesia. Jakarta: Penerbit Pendidikan.

Suryani, R. (2020). Gerakan literasi sekolah: Tantangan dan solusi dalam implementasinya. Yogyakarta: Pustaka Ilmu.

Tabloid Jubi. (2021). Minat baca di Papua rendah, perlu perhatian lebih. Diakses dari https://www.tabloidjubi.com.

Waluyo, J., & SIREGAR, T. (2018). IMPLEMENTASI BUDAYA LITERASI TERHADAP PENINGKATAN HASIL BELAJAR BIOLOGI SISWA KELAS X SMA NEGERI 4 JAYAPURA. *Jurnal Ilmu Pendidikan Indonesia*, *6*(2), 1–13. https://doi.org/10.31957/jipi.v6i2.508