Stationenlernen learning technique and German language learning outcomes

Samuel Jusuf Litualy, Henderika Serpara
Department of German Language Education, Pattimura University, Indonesia

Article Info	ABSTRACT
	This quasi-experimental study was conducted with the aim of obtaining a clear picture of the presence of influence of the application of *Stationenlernen* learning techniques to the learning outcomes of German students. The study population was all of these students, while the selected sample was 11th grade students. Data collection techniques used in this study are: (1) observation and interviews, (2) the implementation of pre-test (3) the implementation of experiments, and (4) the implementation of post-test, the data obtained are calculated and analyzed using SPSS -18 to obtain accurate and reliable calculation results. Learning outcomes with Stationenlernen learning techniques turn out to be higher than without it.

Corresponding Author:

Samuel Jusuf Litualy,
Department of German Language Education,
Faculty of Teacher Training and Education,
Pattimura University,
Ir. M. Putuhena Street Campus Poka, Ambon, Indonesia.
Email: litualysamuel001@gmail.com; samly_56@yahoo.co.id

1. INTRODUCTION

German as one of the foreign languages taught in Indonesia in high school or vocational school and university, indicates the importance of mastering the language [1]. Good mastery of the German language depends on providing learning aids, such as learning media and learning techniques according to the context and needs of students [2].

There are five benefits as to why learning German is important, (1) German: the language that is important for trade, because Germany is the main exporting country in the world, because it has a strong economy and the most important industry-trade partner for Indonesia in the European Union. In the last 10 years, German has become a regional lingua-franca in central and eastern European countries. Because cross-cultural skills are a key qualification for successful businesses today, German language skills help you open new markets and be successful in global business and in the international labor market. (2) German position is strong in knowledge and literature. As a language of knowledge and technology, German plays an important role in research and education. In the 19th century German as a language of knowledge and literature occupied an important position in the world, more important than French and English in certain aspects. (3) As a cultural language, German can open students' intellectual insights. German culture manifests itself in various forms from literary and musical forms, theater and film to architecture, painting, philosophy and art. Knowledge of German allows you to get to know one of many great European cultures in its original form. In the literary world - Goethe, Schiller, Kafka, Grass -, the music world - Bach, Mozart, Beethoven, Wagner -, philosophy - Luther, Kant, Schopenhauer, Nietzsche -, or psychology -Freud, Adler, Jung - or also

the world of research and knowledge - Kepler, Einstein, Röntgen, Planck - German is the language of great minds. (4) German helps open the door to the world so you can study at German universities. Although international study in Germany allows you to study without knowledge of German, mastering German will certainly be beneficial if you master it. If international tuition is not available, you must prove that you have sufficient German language skills before starting college. Therefore, language acquisition will provide a wider choice of courses, and (5) German companies in Indonesia and foreign companies in Germany try to get experts with German language knowledge. Experts with German knowledge have better training, study and employment opportunities in the European Union. In addition, as a tourist destination, Indonesia is visited by many foreign tourists who speak German, such as from Germany, Austria and Switzerland. For those who work in the tourism industry, German language skills are a good investment [3].

The explanation above clearly indicates that mastering German is important, but in reality at present the results of learning German in high school or vocational school especially in Saparua sub-district (Central Maluku Regency), have not shown a significant improvement. This is due to the unavailability of adequate learning media, which have not been accompanied by the use of appropriate German learning techniques (according to student learning outcomes data through preliminary observations of the research team). Based on data from high school or vocational high school student learning outcomes such as the observation data, efforts are needed to improve and increase student learning achievement through the application of appropriate media and learning techniques [4-6]. *Stationenlernen's* learning technique is one of learning techniques that is open, independent and interactive, which is expected to help students to improve their learning outcomes in German [7].

In its application, Stationenlernen needs full support from educators (teachers), and especially from students [8]. In terms of educators (teachers) are expected to have high creativity and aggressiveness, in providing or managing learning stations with complete supporting materials and managing the course of teaching and learning activities, so that the activities take place smoothly without obstacles [9]. Meanwhile, students are expected to be able to support teaching and learning activities by providing energy, time and thought and ready to work together with fellow students in groups [10, 11]. The purpose of this study was to analyze the effect of Stationenlernen's learning techniques on German learning outcomes.

Learning outcomes are a change in the individual [12]. The intended change is not only in the form of knowledge, but also includes changes in skills [13], attitudes [14], understandings [15], and self-esteem [16]. It was further explained that learning outcomes are a description of the abilities or skills gained by someone in thinking, acting and doing [17]. Changes in skills, attitudes and habits, understanding, knowledge, and study, which are identical with the terms cognitive, affective, and psychomotor through the act of learning are learning outcomes [18]. There are three aspects that must be fulfilled if it is stated that learning outcomes are perfect namely cognitive, affective, and psychomotor aspects [19]. Learning outcomes are a process of transition that applies to people learning, which is associated with changes in knowledge, understanding and skills [20].

Furthermore, it is stated that when a person finishes the learning process, there will be a change in behavior. Changes that occur can be observed through the following aspects: 1) knowledge, 2) cognitive skills, 3) motor skills, 3) affective learning outcomes, and 4) communicative learning outcomes [21]. Cognitive strategies are related to intellectual change [22, 23]. Affective strategies are related to changes in attitudes or actions, whereas psychomotor strategies are the ability to manipulate physically [24]. What is meant is that there is a change in skills for individuals who learn, that is initially unable to become able.

Bloom distinguishes six types of behavior in the cognitive domain, as follows: a) Knowledge, namely the ability to remember what has been read and stored in the brain. Knowledge relating to evidence, events, notions of rules, theories, principles, or methods. b) Understanding, including the ability to encompass the meaning of what is taught. c) Application, related to the ability to apply methods and rules in dealing with real and new problems. d) Analysis, related to the ability to break down a whole into sub-sections so that it can be understood properly. e) Synthesis, related to the readiness to make a new form. f) Evaluation, including the ability to express opinions about several things based on certain criteria [25].

In connection with the views above, it can be argued that German learning outcomes are changes in knowledge and understanding as well as attitudes that occur in students after following the process of teaching and learning German [26]. Changes in knowledge and understanding and attitudes include four language skills: *Hörverständnis* (listening skills), *Sprechfertigkeit* (speaking skills), *Leseverständnis* (reading comprehension skills), and *Schreibfertigkeit* (writing skills), coupled with the mastery of German Structures.

Stationenlernen is a term in German that has the same meaning as the terms "*Lernen an Stationen*" and "*Lernzirkel*", literally interpreted in Indonesian are: learning from station to station or stations of learning. Stationenlernen is a learning form that is arranged neatly and contains openness, where students are directed to learn independently, while learning to work together in groups. This term was first introduced

by Morgan and Adamson 1952 in England which was used in the development of sports, which later developed in the teaching field [27].

Stationenlernen learning techniques provide the possibility of pleasant learning situations that involve all students actively in the learning process. In the Stationenlernen learning technique developed a form of learning in the form of games, where students learn energetically, cheerfully, independently, learn to interact and work with peers as well and respect the opinions of other friends. In addition, through Stationenlernen learning techniques students are given the opportunity to be active in open learning, learn to control themselves, which relates to the success obtained with all the deficiencies or errors and the advantages or truths that are made by yourself, the accuracy of work, the accuracy of the use of time, assess and reflect on the results of the work itself. Through Stationenlernen students are given responsibility for a series of tasks that must be completed during the learning process that takes place in this game.

In each cycle "Stationenlernen" is expected that the teacher prepares four to six main stations and one or two backup stations. Students can only stop by the reserve station, if other groups of students have already been at the main station. In each station maps or envelopes are prepared in which learning materials are available which must be done or completed by each group. After the tasks are done or completed in one station, the materials must be returned neatly into a folder or envelope according to the number of each group, and the group moves to the next station, until all stations (especially the main station) can be visited. Furthermore, after the learning process from station to station is finished, the learning outcomes of each group can be discussed. In this case, each group can be held accountable for the results of their work, through discussion and question and answer in plenary held with the teacher as a mediator. Assessment of the work of each group can be done by the teacher and all group members, so students can assess themselves and at the same time know the work done. Learning patterns like this mean the existence of independence and cooperation in learning at the same time, which students are expected to develop in their daily learning, so that their learning outcomes in German are increasingly.

2. RESEARCH METHOD

This research is a quasi-experiment, where the experiment is only conducted on one group of students, without a comparison group [28]. In this research the Stationenlernen learning technique is applied in the process of German language acquisition and is carried out at SMA Negeri 1 Saparua-Central Maluku Regency, with the selected sample being the XI grade students of SMA Negeri 1 Saparua. The samples in this study were 46 students, those who were determined randomly. These implementation techniques are: (1) observation and interviews, (2) Pre-test (3) conducting experiments with the application of Stationenlernen learning techniques and (4) Post-test implementation, to obtain the results of learning German, after conducting experiments. German learning outcomes data obtained, processed and analyzed using SPSS-18. The instruments of this study were (1) the instrument of implementing Stationenlernen learning technique experiments, and (2) the test instruments. Normality test The research instrument was carried out with the Liliefors test, showing significant results on the Kolmogorov-Smirnov statistics (0.031) and (0.001), and on the Shapiro-Wlik statistics showed significant results (0.033) and (0.000) as shown in Table 1.

Table 1. Test of normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Pre Test	.137	46	.031	.946	46	.033
Post Test	.178	46	.001	.821	46	.000

3. RESULTS AND DISCUSSION

Table 2 shows pre-test learning outcomes data (Y1) obtained the following values: value 92 = 3 people; value 88 = 5 people; value 84 = 1 person; value 80 = 1 person; value 76 = 6 people; value 72 = 7 people; value 68 = 4 people; value 64 = 6 people; value 60 = 1 person, value 56 = 3 people; value 52 = 3 people; value 48 = 2 people; value of 40 = 1 person; value 36 = 1 person; value 28 = 1 person; and a value of 20 = 1 person. With an average value (Mean) = 67.39 and S = 16.6. While the following Post-test learning outcomes data (Y2): value 96 = 9 people; value 92 = 9 people; value 88 = 5 people; value 84 = 5 people; value 80 = 6 people; value 76 = 3 people; 72 = 2 people; value 64 = 2 people; value 60 = 2 people, value 56 = 1 person; a value of 52 = 2 people, with an average value (Mean) = 82.26 and S = 14.7. This show the final test on the data is higher than the initial test. It can be seen that the range of the final test data distribution also becomes wider and with smaller standard errors as seen in Table 3.

The Paired Samples Correlations table shows the correlation value of two variables in a paired sample. This is obtained from the Pearson bivariate correlation coefficient (with a two-tailed significance test) for each pair of variables entered. The test results show that the correlation between the two variables is 0.468 with a sig of 0.001. This shows that the correlation between the two before and after averages is strong and significant as showing in Table 4 and Table 5.

Table 2. Paired sample T-test

		Pre Test	Post Test
N	Valid	46	46
	Missing	0	0
Mean		67.3913	82.2609
Std. Error of Mean		2.45530	2.17016
Median		70.0000	86.0000
Mode		72.00	92.00ª
Std. Deviation		16.65263	14.71875
Variance		277.310	216.642
Skewness		-.755	-1.808
Std. Error of Skewness		.350	.350
Kurtosis		.630	4.355
Std. Error of Kurtosis		.688	.688
Range		72.00	72.00
Minimum		20.00	24.00
Maximum		92.00	96.00
Sum		3100.00	3784.00

- Initial tests have an average value (mean) of 67.3913 out of 46 data. The data distribution (Std. Deviation) obtained was 16.65263 with a standard error of 2.45530
- Final Test has an average value (mean) of 82.2609 from 46 data. Data distribution (Std.Deviation) obtained 14.71875 with standard error 2.17016.

Table 3. Paired samples correlations

		N	Correlation	Sig.
Pair 1	PreTest & PostTest	46	.468	.001

Table 4. Paired samples test 1

		Paired Differences		
		Mean	Std. Deviation	Std. Error Mean
Pair 1	PreTest-PostTest	-14.86957	16.25711	2.39698

Table 5. Paired samples test 2

		Paired Differences				
		95% Confidence Interval of the Difference		T	Df	Sig. (2-tailed)
		Lower	Upper			
Pair 1	PreTest – PostTest	-19.69733	-10.04180	6.203	45	.000

Paired Samples Test table is the main table of output that shows the results of the tests carried out. This can be seen from the significance value (2-tailed) in the table. The significance value (2-tailed) is 0.000 (p <0.05). So, the results of the initial test and final test underwent significant changes. Based on statistical results prove that the final test is higher when compared to the initial test. From the analyzed data, values are obtained t_{count} = 6.203 with a level of probability at a significant level $α$ = 0.00 and df = 45 obtained t_{tabel} = 0.00. These results indicate that the value t_{count} > probability (t_{count} = 6.203 > 0.00). When compared to the value of German students who were taught with Stationenlernen learning techniques and the value of German learning outcomes of students of SMA Negeri 1 Saparua before being taught with these techniques, it turns out that the value of students' German learning outcomes when taught with these techniques is higher than the value of German students before the application of that technique. This result can be proven by the value obtained from the average calculation results obtained in the Pre-test (Y1) of 67.3913, while the Post-test (Y2) of 82.2609.

Data from the results of this study show that Stationenlernen learning techniques have a positive influence in improving student learning outcomes in German language. This can be seen from the change in

value with increasing learning outcomes after the application of the learning technique. The reason is because in the application of the learning technique, the concentration of activities in the classroom is directed at students by grouping students to work together in the process of learning German. In this Learning technique, social attitudes are prioritized to achieve learning objectives, namely by collaborating with students in completing joint assignments. Thus, it can be said that in Stationenlernen learning techniques students are not used as learning objects, but rather as learning subjects because they can be active and create maximally during the learning process.

In addition, in expressing thoughts and opinions, students are not afraid, because there is an element of openness in the learning process so that unknowingly, there has been active communication between students. The application of Stationenlernen learning techniques helps eliminate student boredom in learning and naturally makes a positive contribution, so as to improve German learning outcomes. In contrast to teaching before the use of Stationenlernen learning techniques the learning outcomes achieved by students are very low. This is because previously the methods used by the teacher were less varied or monotonous, which resulted in students feeling bored, not interested in the lessons given and less motivated to learn. With the application of Stationenlernen learning techniques, students' learning motivation increases, followed by an increase in German learning outcomes as evidence that the learning technique has a significant influence on learning outcomes. When the results of this study are associated with relevant research results, with research results processed and analyzed, it shows a very significant change [29, 30].

These previous findings are in line with research in Japan for low-level students when in 2011 they were hit by a Tsunami storm and hence experienced a learning decline. With Stationenlernen technique how students are taught in German well to continue progress at the secondary level in Japan [31]. Another relevant study is the results of my first Stationenlernen experiment were very positive. All twelve students, in groups of two or three, worked actively and intently with the text and communicated in German for the entire hour. Another positive impact is students are more active and motivated in learning activities than before applying the learning model [7].

4. CONCLUSION

The Stationenlernen learning technique is proven to improve German learning outcomes. This learning technique allows students to choose and solve the problem topics and assignments given by the teacher to them, done together in their respective groups. Students are more active and motivated and able to express their opinions freely without fear. They can easily understand the learning materials being taught. This study proved the importance of sustainability the application of these learning techniques in teaching and learning activities of other subjects.

ACKNOWLEDGEMENTS

REFERENCES

[1] A. Abduh and R. Rosmaladewi, "Language policy, identity, and bilingual education in Indonesia: A historical overview," *XLinguae*, vol. 12, no. 1, pp. 219-227, 2019.
[2] A. Mattissek and G. Glasze, "Discourse analysis in German-language human geography: integrating theory and method," *Soc. Cult. Geogr.*, vol. 17, no. 1, pp. 39-51, 2016.
[3] B. Gasperschitz, "Was ist los in Hauptstraße 117 ?" vol. 1, pp. 1-20, 2007.
[4] E. Peters, "Learning German formulaic sequences: The effect of two attention-drawing techniques," *Lang. Learn. J.*, vol. 40, no. 1, pp. 65-79, 2012.
[5] L. Wickramanayake and S. M. Jika, "Social media use by undergraduate students of education in Nigeria: A survey," *Electron. Libr.*, vol. 36, no. 1, pp. 21-37, 2018.
[6] Wartono, D. Hartoyo, Nilasari, and J. R. Batlolona, "Real-virtual monte carlo simulation on impulse-momentum and collisions," *Indones. J. Electr. Eng. Comput. Sci.*, vol. 13, no. 1, pp. 7-14, 2019.
[7] J. Redmann, "For all Levels of the Foreign Language Curriculum," pp. 484-492, 2005.
[8] J. Handrich, R. Vandenhouten, S. Haas, and L. Schmidt, "Erweiterung eines landmarkenbasierten Innenraumortungsverfahrens für Mobilgeräte mit ARCore," *Wissenschaftliche Beiträge Th Wildau*, vol. 23, p. 2732, 2019.
[9] M. Selkrig and R. Keamy, "Creative pedagogy: A case for teachers' creative learning being at the centre," *Teach. Educ.*, vol. 28, no. 3, pp. 317-332, 2017.

[10] M. Norhailawati, *et al.*, "The power of social networking sites: Student involvement toward education," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 8, no. 3, pp. 549-556, 2019.

[11] M. Leasa, Y. L. Sanabuky, J. R. Batlolona, and J. J. Enriquez, "Jigsaw in teaching circulatory system: A learning activity on elementary science classroom," *Biosfer*, vol. 12, no. 2, pp. 122-134, Nov. 2019.

[12] T. Jorre de St Jorre and B. Oliver, "Want students to engage? Contextualise graduate learning outcomes and assess for employability," *High. Educ. Res. Dev.*, vol. 37, no. 1, pp. 44-57, 2018.

[13] A. S. Kastenmeier *et al.*, "Individual learning plans foster self-directed learning skills and contribute to improved educational outcomes in the surgery clerkship," *Am. J. Surg.*, vol. 216, no. 1, pp. 160-166, 2018.

[14] T. Byers, W. Imms, and E. Hartnell-Young, "Comparative analysis of the impact of traditional versus innovative learning environment on student attitudes and learning outcomes," *Stud. Educ. Eval.*, vol. 58, no. July, pp. 167-177, 2018.

[15] L. S. Post, P. Guo, N. Saab, and W. Admiraal, "Effects of remote labs on cognitive, behavioral, and affective learning outcomes in higher education," *Comput. Educ.*, vol. 140, May, 2019.

[16] C. M. Kokkinos and I. Voulgaridou, "Motivational beliefs as mediators in the association between perceived scholastic competence, self-esteem and learning strategies among Greek secondary school students," *Educ. Psychol.*, vol. 38, no. 6, pp. 753-771, 2018.

[17] G. Kasilingam, M. Ramalingam, and E. Chinnavan, "Assessment of learning domains to improve student's learning in higher education," *J. Young Pharm.*, vol. 6, no. 1, pp. 27-33, 2014.

[18] C. L. Huang, Y. F. Luo, S. C. Yang, C. M. Lu, and A. S. Chen, "Influence of students' learning style, sense of presence, and cognitive load on learning outcomes in an immersive virtual reality learning environment," *J. Educ. Comput. Res.*, 2019.

[19] A. J. Muzyk, *et al.*, "Utilizing Bloom's taxonomy to design a substance use disorders course for health professions students," *Subst. Abus.*, vol. 39, no. 3, pp. 348-353, 2018.

[20] M. A. B. Delcourt, D. G. Cornell, and M. D. Goldberg, "Cognitive and affective learning outcomes of gifted elementary school students," *Gift. Child Q.*, vol. 51, no. 4, pp. 359-381, 2007.

[21] T. M. Connolly, E. A. Boyle, E. MacArthur, T. Hainey, and J. M. Boyle, "A systematic literature review of empirical evidence on computer games and serious games," *Comput. Educ.*, vol. 59, no. 2, pp. 661-686, 2012.

[22] S. Kaplan, "Research in Cognition and Strategy: Reflections on Two Decades of Progress and a Look to the Future," *J. Manag. Stud.*, vol. 48, no. 3, pp. 665-695, 2011.

[23] M. J. Jarvinen and T. B. Paulus, "Attachment and cognitive openness: Emotional underpinnings of intellectual humility," *J. Posit. Psychol.*, vol. 12, no. 1, pp. 74-86, 2017.

[24] A. P. Rovai, M. J. Wighting, J. D. Baker, and L. D. Grooms, "Development of an instrument to measure perceived cognitive, affective, and psychomotor learning in traditional and virtual classroom higher education settings," *Internet High. Educ.*, vol. 12, no. 1, pp. 7-13, 2009.

[25] L. Meda and A. J. Swart, "Analysing learning outcomes in an Electrical Engineering curriculum using illustrative verbs derived from Bloom's Taxonomy," *Eur. J. Eng. Educ.*, vol. 43, no. 3, pp. 399-412, 2018.

[26] E. Ruigendijk, G. Hentschel, and J. P. Zeller, "How L2-learners' brains react to code-switches: An ERP study with Russian learners of German," *Second Lang. Res.*, vol. 32, no. 2, pp. 197-223, 2016.

[27] C. Gercek, "Student views on learning stations about smoking," *Procedia - Soc. Behav. Sci.*, vol. 2, no. 2, pp. 4581-4586, 2010.

[28] T. R. Knapp, "Why Is the One-Group Pretest–Posttest Design Still Used?" *Clin. Nurs. Res.*, vol. 25, no. 5, pp. 467-472, 2016.

[29] S. Prediger and L. Wessel, "Fostering German-language learners' constructions of meanings for fractions-design and effects of a language- and mathematics-integrated intervention," *Math. Educ. Res. J.*, vol. 25, no. 3, pp. 435-456, 2013.

[30] S. Kan, A. Z. Saka, and D. Batman, "Investigation of physics teachers' opinions about the physics curriculum," *Can. J. Phys.*, vol. 97, no. 11, pp. 1200-1205, 2019.

[31] B. M. Berg, " Perspectives on the German Energiewende: Culture and Ecology in German Instruction," *Die Unterrichtspraxis/Teaching Ger.*, vol. 46, no. 2, pp. 215-229, 2013.