International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 02, 2020
ISSN: 1475-7192

The Effect of Learning Strategies and Spatial Intelligent on the Results of Hair Style Learning

Aniesa Puspa Arum*, Nurdin Ibrahim and Etin Solihatin

Abstract--- *The purpose of this research is to find the effect of learning strategies and spatial intelligent on student learning outcomes of hair style courses. This research used experimental method with 2x2 by level design using anava test for hypothesis testing. The main variable is cooperative and CTL strategies. The attribute variable is spatial intelligent which is differentiated between high spatial and low spatial intelligent. The samples of this research were 32 students coming from two classes which were selected randomly. Then the samples were divided into 4 cells with 8 students of each from the spatial intelligent measurement. The treatment used CTL and cooperative learning strategies to find the result. The findings are: (1) Hair style learning outcomes of those who used cooperative learning are higher than those who used CTL strategies, (2) There were interactions between learning strategies and spatial intelligent on the result of hair style learning, (3) Student learning outcomes who have high spatial intelligence and are taught with cooperative strategies are not higher than students who are taught with CTL strategies, and (4) Hair style learning outcomes of those with low spatial intelligent who used cooperative learning are higher than those who used CTL strategies.*

Keywords--- *Learning Strategies, Spatial Intelligent, Learning Outcomes, Hair Style Learning.*

I. INTRODUCTION

The number of students in the Makeup Study Program, Faculty of Engineering, Jakarta State University, continues to grow each year. The educational background of each student is different; most of them are from high school that incidentally does not learn cosmetology skills so that it is new to them. This phenomenon causes differences in the skills in managing makeup from students whose previous educational backgrounds come from vocational schools. To overcome these differences requires a variety of learning strategies that are able to provide learning experiences, build students' knowledge and skills to solve problems and apply them in real life, so students can feel the pleasant learning sensation and make it easier for them to understand the material delivered by lecturers. One of them is the application of cooperative learning strategies, this is supported by the results of Leela Ramsook's research (2018, p.1) which shows that cooperative learning is a constructivist strategy that is very valuable for teaching and learning. It is recommended as a method, not only at the tertiary level, but at all levels of the education system[i].

Based on researchers' observations, so far the cosmetology learning process applies contextual learning strategies, but in its application students still work individually in the implementation of practice and work

Aniesa Puspa Arum, Departement of educational Technology Universitas Negeri Jakarta. Jl. Rawamangun Muka, East Jakarta, DKI Jakarta, Indonesia. Email: *aniesa.puspa@gmail.com, aniesapuspa@unj.ac.id*

Nurdin Ibrahim, Departement of educational Technology Universitas Negeri Jakarta. Jl. Rawamangun Muka, East Jakarta, DKI Jakarta, Indonesia.

Etin Solihatin, Departement of educational Technology Universitas Negeri Jakarta. Jl. Rawamangun Muka, East Jakarta, DKI Jakarta, Indonesia.

DOI: 10.37200/IJPR/V24I2/PR200478
Received: 22 Dec 2019 | Revised: 07 Jan 2020 | Accepted: 18 Jan 2020

assignments, causing a decrease in motivation, because students find it difficult when having to work alone when practicing. The impact of the results obtained by students is stable, there is no significant increase. This can be seen from the average value of each student in the hairdressing course in the last 3 years with mastery levels only reaching 75-80, if given a grade only reaches B-B +. (Makeup Study Program, FT UNJ). Based on preliminary surveys, another problem arises when most students prefer make-up over hair styling. Evidenced by the results of preliminary research distribute questionnaires to 30 students, obtaining 80%: 20% results, the reason they find it difficult when doing hair styling practices.

To solve these problems, there are several things that must be considered, one of which is the selection and application of learning strategies that are appropriate to the characteristics of students and teaching material. This is supported by Gredler, (2011: 180), that paying attention to the characteristics of students is an important thing before starting the learning process[ii]. In addition, the intelligence factor of students must also be considered in order to increase motivation, ideas and creativity, so that the involvement and learning outcomes of students can also increase.

In fact, there are many make-up alumni who make up more Artish than hair stylists. This proves that in fact there are still many opportunities for students to become professional hairstyles considering that there is still little focus on that field.

Therefore, it becomes important for him to explore his potential, talents, interests, increase intelligence by continuing to practice balanced with the application of appropriate learning strategies so that intelligence continues to increase and ultimately affect the results of learning. This is supported by the results of research Maizam Alias, et al (2012, 4) states that talent is related to spatial intelligence and can affect test results. To find out an increase in student learning outcomes[iii], the lecturer must conduct a student characteristic analysis including the students' initial ability. Based on the background of the above problems, the researcher is interested in examining the application of learning strategies and identifying students 'spatial intelligence in order to determine their effects on hair style learning outcomes by controlling students' initial abilities.

II. LITERATURE REVIEW

The research was raised starting from the low student learning outcomes in the Hairdressing course. The average value obtained by students only reached 75-80, with category B. In addition, based on the results of preliminary research showed that of 30 students, 80% preferred make-up, rather than styling hair. Other facts reveal that there are more cosmetology graduates who become Make-up Artists, compared to stylish hair, even though the stylish hair profession or hairdresser is needed in daily life, so the chances of becoming a professional stylish hair are greater, because there are still few rivals. Based on these problems, researchers are interested in finding solutions so that students are more interested and enthusiastic in studying hair styling courses, one of which is by choosing and implementing learning strategies that are tailored to the students' initial characteristics and abilities. The purpose of this study is to determine the effect of learning strategies (cooperative and contextual) and spatial intelligence on learning outcomes hair styling.

DOI: 10.37200/IJPR/V24I2/PR200478
Received: 22 Dec 2019 | Revised: 07 Jan 2020 | Accepted: 18 Jan 2020

2.1 Learning Strategies

This study departs from problems that occur in the learning process experienced by students, which have an impact on learning outcomes. Educational Technology is one of the disciplines, consisting of several multidisciplinary sciences, including education, psychology, communication, statistics, social sciences, etc., all of which constitute an interrelated and sustainable system with the aim of solving learning problems by facilitating learning and improving the performance of these students is the definition of AECT 2004 educational technology. Learning technology as software (software technology) in the form of systematic ways of solving learning problems is increasingly sophisticated and has a broad place in the world of education[iv] (Suparman&Zuhairi, 2004: 345-346). Learning technology both as a discipline, study program and profession continues to experience rapid development. The development of this rapid learning technology by taking four main characteristics, namely: 1) applying a systems approach, 2) using learning resources as broadly as possible, 3) aimed at improving the quality of human learning, and 4) oriented towards individual instructional activities[v] (Suparman, 2004: 30 -31).

Learning strategies include various aspects in choosing a model and method of learning, sorting and grouping the contents of learning, explaining the components of learning that will be included in learning, determining how to group students during learning, creating learning structures and choosing learning media[vi] (Carey, 2009: 166). Kauchak and Eggen (2012: 6) further define learning strategies as general approaches to teaching that apply in various material areas and are used to meet various learning objectives[vii].

The use of appropriate learning strategies is very important to note, because the learning strategies used must be able to foster attraction for the learner. With high attractiveness at the time of delivery of teaching material causes high interest and attention. The high intensity of interest, attention and motivation is a precondition for achieving optimal learning goals.

Actually there are various factors that influence the learning process, therefore teachers must always pay attention to the situation of students and the learning environment and can condition it in such a way as to obtain maximum learning outcomes. In the case of this study, learning strategy factors which are divided into two kinds of learning strategies in the form of cooperative strategies and contextual strategies are the main factors that want to be seen how far they affect the learning outcomes of bun structuring in cosmetology students.

The way to achieve goals in group learning is the cooperative type, namely students are confident that learning goals will only be achieved by working together between students[viii] (Arends, 2007: 149). Cooperative learning is able to stimulate and arouse students' potential optimally in a learning atmosphere in small groups of 2-6 people. Through the group model will develop an open learning atmosphere in the dimension of peerhood so that it can foster or develop peer group learning patterns and practice cooperation (cooperative)[ix] (Asmani, 2016: 44). When cooperative learning strategies are linked to spatial intelligence and hairdressing learning outcomes, this is new because after searching and reading a variety of similar literature, cooperative learning strategies should indeed continue to be implemented and developed, this is in line with Leela Ramsook's research (2018, p. 1) which shows that cooperative learning is a very valuable constructivist strategy for teaching and learning. It is recommended as a method, not only at the tertiary level, but at all levels of the education system[x].Actually there are various factors that

DOI: 10.37200/IJPR/V24I2/PR200478
Received: 22 Dec 2019 | Revised: 07 Jan 2020 | Accepted: 18 Jan 2020

influence the learning process, therefore teachers must always pay attention to the situation of students and the learning environment and can condition it in such a way as to obtain maximum learning outcomes. In the case of this study, learning strategy factors which are divided into two kinds of learning strategies in the form of cooperative strategies and contextual strategies are the main factors that want to be seen how far they affect the learning outcomes of bun structuring in cosmetology students.

2.2 Spatial intelligence

Spatial intelligence variables are more associated with learning outcomes in techniques, such as geometry, civil or building engineering, mathematics, social science and even art. It can be concluded that spatial intelligence is needed in the fields of engineering and art. Based on this, the researcher is interested in doing this research with the assumption that hair styling is one of the courses in cosmetology courses, engineering faculties, Jakarta State University., where the field of engineering and art are studied in hairdressing courses. In line with research (Diezmann, 2000: 299), which states that spatial intelligence is generally associated with art[xi].

Furthermore, research on spatial intelligence should also continue to be developed, because having spatial intelligence is needed in technical education. This is supported by the results of research by Jeffrey Buckley, Niall Seery& Donald Cantry 2019: 164), which states that there is a correlation between spatial skills and performance in technical education. This evidence has become the basis in the development of educational interventions that result in increased spatial ability and improved performance[xii]. In addition spatial intelligence can help strengthen creativity and enhance interaction with students[xiii] (Safranj, 2018: 71).

2.3 Hair Style Learning Outcomes

Hair styling is an act of embellishing hair with all the stages that can be given to someone through the arrangement of his hair in accordance with a design that aims to change one's appearance. With the practice of hair styling, one can develop creative ideas and can apply beautiful hair styling in accordance with the shape of the face. Hair styling is the last step in a series of actions, in the process of handling hair that aims to give the impression of beauty, neatness and harmony for a person, according to aesthetic values applicable in a certain period[xiv] (Harahap, 2008: 85). Hair styling is an important thing that can be done alone or with the help of stylish hair with a variety of techniques and designs that are simple and attractive[xv] (Kusumawardhani, 2010: 7).

Hair styling courses are compulsory follow-up courses taken by students after graduating from previous courses, namely: drawing mode, haircuts, hair care and presets. Where all the courses are theoretical and practical and require deep thinking, sharpening creativity and pouring ideas in the form of designs or patterns of an object that you want to display. Therefore, spatial intelligence is needed.

III. METHODOLOGY / MATERIALS

This research will be conducted at the Faculty of Engineering Makeup Study Program at the Jakarta State University in the odd semester of September-November 2019/2020 academic year, as many as 8-10 meetings and carried out when learning activities take place as usual. The method used to carry out this research is an experiment with the dependent variable in this study called the criterion variable. The criterion variable observed was the

DOI: 10.37200/IJPR/V24I2/PR200478
Received: 22 Dec 2019 | Revised: 07 Jan 2020 | Accepted: 18 Jan 2020

learning outcomes of cosmetology student hair styling. The independent variables in this study consisted of treatment variables and moderator variables, namely: treatment variables, namely learning strategies consisting of cooperative and contextual, spatial intelligencemoderator variables consisting of high spatial intelligence and low spatial intelligence. In this study also consider affix variables that are not the focus of research but can affect research results and cannot be manipulated, these variables are the initial ability of students as covariate variables. Because the criteria and attribute variables are divided into two parts, the appropriate research design used in this study is the 2x2 level design.

The design of the research experiment can be presented in the following Table I.

Table1: Research Desaign

Learning Strategies / **Spatial Intelligence**	**Cooperative (A_1)**	**Contextual (A_2)**
High (B_1)	A_1B_1 $[X, Y]_{8k}$ k = 1,2, …., n_8	A_2B_1 $[X, Y]_{8k}$ k = 1,2, …., n_8
Low (B_2)	A_1B_2 $[X, Y]_{8k}$ k = 1,2, …., n_8	A_2B_2 $[X, Y]_{8k}$ k = 1,2, …., n_8

Information:

A1B1 = A group of students who learn to use cooperative strategies with high spatial intelligence

A1B2 = A group of students learning to use cooperative strategies with low spatial intelligence

A2B1 = A group of students learning to use contextual strategies with high spatial intelligence

A2B2 = A group of students learning to use contextual strategies with low spatial intelligence

X = Student's initial ability score in the hair styling course

Y = Score the results of hair styling learning

k = group (sample per cell)

IV. RESULTS AND FINDINGS

Hypothesis testing is done using statistical analysis of variance (ANAVA). Before testing the hypothesis, it first checks the data requirements to be analyzed. Data requirements that can be analyzed using ANAVA, are (1) the distribution of normally distributed data, (2) the data compared has a homogeneity of variance, (3) the resulting regression between the initial score and the final linear score, and (4) the coefficient regression in each homogeneous group.

DOI: 10.37200/IJPR/V24I2/PR200478
Received: 22 Dec 2019 | Revised: 07 Jan 2020 | Accepted: 18 Jan 2020

Anava summary of the results of student learning outcomes with a significance level (α) = 0.05. are as follows:

Table 2: Anava Two way

Source of variance	db	JK	RJK	Fh	Ftable	
					0.05	0.01
Learning Strategi	1	600.12	600.12	**14.42***	4.20	7.64
Spatial Intelligence	1	2737	2737	**65.6***	4.20	7.64
Interaction (AxB)	1	320	320	**7.69***	4.20	7.64
In	28	1167	41.6	-		
the total is reduced	31	4824.12	-	-		

Information: * Significant

4.1 Testing differences in learning outcomes of students taught using cooperative strategies with CTL strategies

ANAVA calculation results listed in table 2, obtained Fh = 14.42>Ftable = 4.20 at the significance level (α) = 0.05, based on these results, the null hypothesis (H0) which states: μA1 = μA2 is rejected, meaning that there are differences in the average results student learning taught by cooperative strategies with CTL strategies.

4.2 Testing differences in learning outcomes of students who have high spatial intelligence with student learning outcomes who have low spatial intelligence

ANAVA calculation results listed in table 2, obtained Fh = 65.6>Ftable = 4.20 at the significance level (α) = 0.05, based on these results, the null hypothesis (H0) which states: μB1 = μB2 is rejected, meaning there is a difference in average results learning students who have high spatial intelligence with student learning outcomes who have low spatial intelligence.

4.3 Testing the interaction between cooperative strategies and spatial intelligence on student learning outcomes

ANAVA calculation results listed in table 2, obtained Fcount = 7.69>Ftable = 4.20 at the significance level (α) = 0.05, based on these results, the null hypothesis (H0) which states: A x B = 0, is rejected, meaning there is an interaction effect between learning strategies and spatial intelligence on student learning outcomes.

ANAVA calculation results show that the interaction effect is significant, so it is necessary to do an advanced analysis to test the significance of the difference between the two paired group averages, namely: (a) between the A1B1 and A2B1 groups, called q1, (b) between the A1B2 and A2B2 groups , called q2, (c) between groups A1B1 and A1B2, called q3, and (d) between groups A2B1 and A2B2, called q4, using the Tukey Test.

Table 3: Calculation Tukey Test

Group	n	q_h	q_{table}	Information
q_1	8	0.49	4.04	Not significant
q_2	8	8.49	4.04	significant
q_3	8	7.23	4.04	significant
q_4	8	8.99	4.04	significant

DOI: 10.37200/IJPR/V24I2/PR200478
Received: 22 Dec 2019 | Revised: 07 Jan 2020 | Accepted: 18 Jan 2020

Information:

a. Based on the Tukey Test calculation results obtained q1 count = 0.49 <q table = 4.04 at the significance level (α) = 0.05, it can be concluded that the null hypothesis (H0) which states: μA1B1 = μA2B1, was not successfully rejected, thus the average student learning outcomes who have high spatial intelligence and are taught with a cooperative strategy are higher than those taught with the CTL strategy, rejected, because it is not significant, meaning that the hypothesis received is the opposite, the average learning outcomes of students who have high spatial intelligence and are taught with a cooperative strategy no more higher than those taught with the ctl strategy

b. Based on the Tukey Test calculation results obtained q2 count = 8.49> q table = 4.04 at the significance level (α) = 0.05, it can be concluded that the null hypothesis (H0) which states: μA1B2 = μA2B2, successfully rejected, it can be concluded that the average learning outcomes Students who have low spatial intelligence and are taught with a cooperative strategy are higher than those taught with the CTL strategy.

c. Based on the Tukey Test calculation results obtained q3 count = 7.23> q table = 4.04 at the significance level (α) = 0.05, it can be concluded that the null hypothesis (H0) which states: μA1B1 = μA1B2, successfully rejected, it can be concluded that the average learning outcome students who are taught with cooperative strategies and have high spatial intelligence, are higher than students who have low spatial intelligence.

d. Based on the Tukey Test calculation results obtained q4 count = 8.99> q table = 4.04 at the significance level (α) = 0.05, it can be concluded that the null hypothesis (H0) which states: μA2B1 = μA2B2, successfully rejected, it can be concluded that the average learning outcomes Students who have high spatial intelligence and are taught with higher CT strategies compared to students who have low spatial intelligence.

V. CONCLUSION

Based on the results of data analysis obtained in this study, it can be concluded that:

5.1 Student learning outcomes taught with cooperative strategies are higher than student learning outcomes taught with contextual

Strategies

5.2. There is an interaction between learning strategies with spatial intelligence on student learning outcomes.

5.3. The learning outcomes of students who have high spatial intelligence and are taught with cooperative strategies are not higher than the learning outcomes of students who are taught with contextual strategies

5.4. Learning outcomes of students who have low spatial intelligence and are taught with cooperative strategies are higher than student learning outcomes taught with contextual strategies

ACKNOWLEDGEMENT

Thank God Almighty for all the grace given, so that this research can be completed. I do not forget to thank all parties involved in this research, including lecturers, friends and family.

DOI: 10.37200/IJPR/V24I2/PR200478
Received: 22 Dec 2019 | Revised: 07 Jan 2020 | Accepted: 18 Jan 2020

REFERENCES AND NOTES

[i]Ramsook, Leela. (2018). Cooperative learning as a constructivist strategy in tertiary education. *International Journal of Education and Research*, Vol. 6 (1).

[ii]Gredler, Margaret E., (2011). *Learning In Instruction: Theory in to Practice* 6th Edition, translation by Tri Wibowo, B.S., Jakarta Kencana Perdana Media Group,(180).

[iii]Alias, Maizam, dkk. (2102). Effect of Instructions on Spatial Visualisation Ability in Civil Engineering Students. *International Education Journal*, 3(01),4

[iv]Suparman, M. Atwi , Zuhairi, Aminudin (2004). *Pendidikan Jarak Jauh Teori dan Praktek*. Jakarta: Pusat Penerbitan universitas Terbuka,(345-346).

[v]Suparman, M. Atwi (2004). *Desain Instruksional*. Jakarta: Pusat Penerbitan Universitas Terbuka, (30-31).

[vi]Dick, Walter Dick and Lou Carey. (2009). *The Systematic Design of Instruction*. New York: Harper Collins College Publisher.(166).

[vii]Eggen, P.,& Kauchak, D. (2012). *Strategies and Models for Teachers: Teaching Content and Thinking Skills* (6th ed.). Boston: Pearson.(6).

[viii]Arends, Richard I. (2007). *Learning To Teach* . Mc Graw-Hill.(149).

[ix]Asmani, Jamal Ma'mur, (2016).*Tips Efektif Cooperative Learning pembelajaran aktif, kreatif dan tidak membosankan*, Yogyakarta: DIVA Press.(44).

[x]Ramsook, Leela. (2018). Cooperative learning as a constructivist strategy in tertiary education. *International Journal of Education and Research*, Vol. 6 (1).

[xi]Diezmann, Carmel M and Watters, James J, (2000). Identifying and supporting spatial intelligence in young children. *Contemporary Issues in Early Childhood* 1(3)(299-313).

[xii]Buckley, Jeffrey, et, al. (2019). Spatial cognition in engineering education: developing a spatial ability framework to support the translation of theory into practice. *European Journal of Engineering Education*. Volume 44, Issue 1-2: Research methodologies that link theory and practice

[xiii]Safranj, Jelisaveta, et al. (2018). Spatial-visual intelligence in teaching students of engineering. *Research in Pedagogy*, Vol.8, No.1(71-83).

[xiv]Harahap, Sartini, dkk. (2008). *Tata Kecantikan Rambut Tingkat Trampil*. Jakarta: Meutia Cipta Sarana(85).

[xv]Kusumawardhani, Reni. (2010). *UPDO 24 Simple Hairstyles by Sugimartono*. Jakarta: PT Gramedia Pustaka Utama.(7).

DOI: 10.37200/IJPR/V24I2/PR200478
Received: 22 Dec 2019 | Revised: 07 Jan 2020 | Accepted: 18 Jan 2020