Synectis Models in Writing Stories by Using Augmented Reality to Increase Verbal Creativity

Deasy Aditya Damayanti, Syihabuddin Syihabuddin, Munir Munir and Isah Cahyani
Universitas Pendididkan Indonesia, Jl. Dr. Setiabudhi No. 229, Bandung, Indonesia
adityadeasy@yahoo.co.id

Keywords: Synectics Models, Writing Stories, Augmented Reality, Verbal Creativity.

Abstract: Based on preliminary tests, almost none of the students start to write stories using figurative language like metaphors. Metaphors is a manifestation that the story we write is a creation which is allegorical (long metaphors). Metaphorical statements are able to optimize the ability of understanding and reasoning in conceptualizing certain concepts. The aims of the study were to see synectics model to be able to reason verbal creativity (metaphors). This quasi experiment research aimed to investigate how synectics model to be able to reason verbal creativity in writing stories. The result of this study indicates that the students who get augmented reality aided synectics models have a verbal creativity improvement better than the students who get conventional synectics models. The implications of this study are expected to make further synectics model research to improve verbal creativity in each sub-section of the synectic phase as well as provide an overview of the characteristics of the ideal metaphor in each phase.

1 INTRODUCTION

Starting techniques in writing greatly affect writing skills, especially writing stories. In STKIP Garut, students have much weaknesses to initiate writing with symbols. Almost none of the students start to write stories using symbols. Whereas, start writing by using symbols is a manifestation that the story we write is a creation which is allegorical or long metaphor (Sumiyadi, 2014). Symbols likes metaphor plays a strong role in conveying author messages to readers. Metaphors are generally defined as the transfer of meaning from one element to another (Gove, 1966). Metaphor is an attempt to describe an idea or problem in a concrete way, so it is easier to understand.

The use of creative metaphors in writing will help writers and readers to understand the issues at hand and develop solutions to overcome them. Thus, the metaphor is useful in helping the reader to conceptualize the issues that the story character faces and facilitate the collaboration of authors and readers in appropriately appreciating the story (Robert and Kelly, 2010). Metaphors can also significantly facilitate the change of reader / reader response perspectives (Hundley and Montserrat Casado- Kehoe, 2007; Babits, 2001; Chesley et al., 2008). There is a wide variety of research that

demonstrates the benefits of metaphor in improving communication effectiveness and the creation of meaning (Lyddon, Clay and Sparks, 2001). Metaphora is useful for understanding the reader's experience in a way that is less threatening to the reader (Babits, 2001; Shinebourne and Smith, 2010).

2 MATERIALS AND METHODS

Although correlational results have suggested a reliable relationship between creativity and synectics, few studies have examined this relationship using empirical methods. However, few studies have used hypothesis driven and empirical methods to examine the link between verbal creativity and augmented reality. To our knowledge, this is the first study to compared to verbal creativity and augmented reality.

We investigated the verbal creativity in relation to synectics model and augmented reality in writing stories using quasi experiment research. Our data are also consistent with other studies that found support for verbal creativity is associated with synectics. There is overwhelming support for a positive relationship between creativity is associated with synectics (cf. Widiarti, 2013; Warnandi, 2002; Seligmann, 2007; Nalini, 2013; Fatemipour, 2014). These result shows (1) the synectics model can give

the students imagination to experience to facilitate their composing task, (2) the synectics model invites students to think creatively and use their imagination to make the writing of short story more creative and quality, (3) more effective synectics model in learning to write short stories, (4) synectics models can foster self confidence in writing stories based on students imagination that emerge from the actual experience they have experienced, (5) the use of synectics models helps students find stories ideas, (6) the background use and creation the conflicts of story are quite well done by the students after applying the sinectics model, and (7) with the synectics models, the students become more attentive to the use of language styles and good writing mechanics of story short.

Research Widiarti (2013) unfortunately does not review how the elements of verbal creativity in synectics for detail such as the highest development is in the element of fluency, followed by elements flexibility and elaboration and the lowest development is in the element of originality (Warnandi, 2002). These result suggest that enhanced verbal creativity while synectics model is implemented.

After comparing with the research that has been done has differentiation and novelty because this research is more comprehensive to reveal the learning model of cinematic writing from various benefits such as develop verbal creativity.

The theoretical basis for the selection of synectics learning models by Augmented Reality (AR) is the theory of Social Constructivist Learning (Vigotsky, 1978), the theory of Community of Practice (Wenger, 1998), and General Interest (Eisenberger and Armeli, 1997). The theory of Social Constructivist Learning (Vigotsky, 1978) says that learning in collaborative situations can produce better results than self-study. Based on this theory, Dillenbourg (1999) proposes aspects of collaborative learning support in the form of collaboration environments, collaboration interactions, and collaboration mechanisms. Collaborative interactions such as peer review (Armiati and Sastramiharja, 2007) or Wenger (1998) are conducted online in a community of practice that has domain, community, and practice characteristics. General Interest Theory (Eisenberger and Armeli, 1997) states that rewards have great potential to increase learning motivation while meeting the needs of students. Meanwhile, the narrative writing theory adapted from Gerot and Wignel (1994), Anderson & Anderson (2003), Knapp and Watkins (2005), Martin and Rose (2008), Emilia (2011). This quasi experiment research aimed to investigate how

synectics model to be able to reason verbal creativity in writing stories.

2.1 Participants

Thirty four students (16 students, typically developing for control students and 18 age-matched) between the ages 18-20 participated in the study. The students in the synectics models aided augmented reality met the standard classification criteria of performance on writing stories measures that was one or more standard deviation for the mean on writing stories measures. In addition, the students provided independent testing to insure that the children in the experiment group met student identification criteria.

2.2 Sentence Writing Task

The design of learning to write with Augmented Reality (AR) synectic learning model which can be developed procedurally is: (a) at the time of prewriting, students scan Augmented Reality (AR) card followed by brainstorming of the story content of Augmented Reality (AR) marker image, (b) at the writing stage of the concept, the student writes the idea without the intervention of the lecturer, (c) at the revision stage, the student with his or her friend and lecturer revises the paper, either the mistake of the notion or the mistake of the paragraph placement, (d) at the editing stage, the student along with the lecturer edits writing in terms of mechanical form of spelling and punctuation errors.

Steps synectic models are first, students are asked to make nouns and adjectives as much as they relate to the scanned animal image. Second, make 3 to 5 sentences a direct analogy of the noun in the adjective situation to present a new view. Third, make 3 to 5 personal analogy statements by identifying the first person with emotion in the form of facts. Fourth, make 3 to 5 sentence conflict by making a contradictory identification between one object with another object. Fifth, students are asked to make a direct analogy of human characters who are unfamiliar with familiar objects.

The sentences were controlled for length vocabulary complexity and vocabulary image ability (Montgomery and Evans, 2009) using Guilford theories (1967, pp.1-14). Based on Guilford's analysis, there are five factors that characterize the ability to think creatively:

- Fluency (fluency) is the ability to generate many ideas. The idea is in the sentence, not on the level of the word;

- Flexibility (flexibility) is the ability to propose a variety of solutions or approaches to the problem;
- Originality is the ability to trigger ideas in original and non-cliche ways;
- Elaboration is the ability to decipher in more detail;
- Redefinition is the ability to look at a problem from a perspective different from what is known by many people.

Verbal creativity was assessed using Guilford (1967) Creative thinking paradigm has also been shown in verbal creativity task (Bechtereva et al., 2004). Fluency was measured using verbal (Spreen and Strauss, 1998). Creativity tasks we used the remote associates test (RAT) (Mednick, 1962) and developed a novel divergent thinking task based on earlier models of creativity (Guilford, 1959; Torrance, 1988; Wallach and Kogan, 1965). Creative potential is usually assessed by means of test that measure divergent thinking ability (Runco and Acar, 2010) such as the Torrance Test of Creative Thinking (TTCT; Torrance, 1988), the Guilford test (Wilson, Guilford and Christensen, 1953), or the Wallach and Kogan test (Wallach and Kogan, 1965). Divergent thinking is hereby defined as "the kind that goes off in different directions" (Guilford, 1959). Accordingly, divergent thinking tests involve open problems for which a variety of possible solutions can be found, The RAT is a paper-and-pencil task. Thirty sets of three words are presented and subject are required to find a word that links the two target words in the set. For example, given the word set of an animals and person, the correct answer would be 'adjectives'. The RAT requires association generations and convergent thinking in order to link the remote associations. The novel Divergent Thinking Task (DTT) required subject to generate uses for real objects. Two major established theories define the process and products of creative thinking. Guilford (1959) has emphasized divergent thinking (DT) and the use of generative, flexible responses that redefine or elaborate upon an existing product or idea. Mednick (1962) built upon this definitions, showing that creative thinking emphasizes generating novel associations. DT has emerged as a valid core element in the creative thinking process (Bartlett and Davis, 1974; Torrance, 1988).

3 METAPHOR AND VERBAL CREATIVITY

Creativity, in its simplest literal definition is a process to produce something new that requires intelligence and imagination (Oxford Dictionary of English, 2010). It is the ability to create, by the originality of thought, showing imagination (Mc Leod and Hanks, 1982). It emphasizes more on process than the end result. A process that is different from one existing before can be categorized as the result of one's creativity.

In the psychological context, creativity is the ability to produce a composition, product, or idea of what is essentially new, previously unknown, and original (Wang and Cheng, 2010). It can be imaginative activity or synthesis of thought originated not only by summarizing. Creativity may cover the establishment of patterns, the combined information derived from previous experience and transplantation of old ties to the new situation including the creation of a new correlation. Creativity must have a specified purpose or purposes, not mere fantasy, although as a result, it is perfect and complete. Creativity may take the form of artistic, literary, scientific or product which may be procedural or methodological. Creativity is a mental process that is unique- something that is solely to produce something new, different from the original that includes a specific thought that constitute different ideas and thoughts freely (convergent thinking). It follows the path of convergence where the idea uses the information available to reach the conclusion and leads to the correct answer.

Guilford (1967) creativity means divergent thinking and convergent thinking during the introduction, as the two forms of human thinking, convergent thinking with intelligent, creative and divergent thinking associated with the ends. Difference them is that convergent thinking, there is no definitive answer, and there may be many possible answers logically they are all true. In theory of Guilford, divergent thinking is comprised of several factors, the most important of which are:

- Fluid (psychological): individual responses to a question about the quantity of fluid (generate ideas at a time);
- Flexibility (stretching) of varied and unusual ideas;
- Originality (novelty or originality): a unique and innovative solutions;
- Expansion: the ability to pay attention to details while doing in activity (Seif, 1380).

To provide context, which leads to creative thinking in college, there is a wide range of changing attitudes to extend methods. The most important of these methods can be, welcomed the suggestion of students, problem solving skills and a rover, putting people in difficulties and unknowns, education, creativity, use of brainstorming, the habit of asking questions, flexibility, emphasis on observation and experimentation and creating thinking, and evaluation pointed analytics. It is also possible that many of these cases leads to creativity in teaching methods synectic help learners to accomplish that in this study has the effects of education model.

According to Munandar (2009, p.25), creativity is the ability to create something new, the ability to provide new ideas that can be applied in problem solving, or the ability to see the new relationship between or among pre-existing elements. One's creativity can be seen from his or her behavior or activities. What is more important in the emergence of creativity is not something that has never been known before, but the products of creativity which is new for themselves and do not have to be something new for others or the world in general. Based on the above definition, the researcher has concluded that creativity is the potential of individual's creative power as a form of thinking in finding the relationship between or among existing elements or new ways to deal with problems that appear in the form of self-motivation and a strong desire to be creative.

In the area of education, the metaphor is a tool that can help teachers to teach and learn the implications are obvious. Metaphor is a part of the thinking and learning processes of its fundamental role in education has not been paying much attention it. Synectics teaching distracted, like other forms of creative teaching methods (Kepes et al., 2013), guidance and education through creativity will prosperity uses simile metaphor and analogy are taught, and this had led to the development of the skills students will be based on creativity.

Creativity is an issue that has proved its impact on the success and progress of the people (Mallin et al., 2013). There are many training methods that take advantage of the teacher in the learning process will increase the student's creativity. One of these methods is synectic. This model increases the power and creativity of the students because their strategies, their minds thinking about the different aspects of the issue and encourage at every opportunity, and understanding the relationship between the concepts of generation of new ideas available. In the model, for new concepts and their

application, are simulated and compared through various activities followed (MyIntyre et al., 2014). During the implementation of this model, the teacher guides the students to do a comparison of direct and personal.

4 SYNECTIC MODEL

The model develop by Wiliam Gordon and his colleagues (1973) was designed, which can be used to foster creativity. Gordon synectic based on the four story (Joyce et al., translated by Behrangi, 1386) that ordinary ideas are about creativity to take the criticism, contemporary. First, creativity is important in everyday activities. Many of our creative process to the creation of great works of art, or perhaps a clever invention relates feeds. Gordon on the fact that creativity is part of our daily work and leisure is part of our life's stressed. Second, the creative process does not mysterious. It can be described as direct train individuals to enhance creativity is possible. The conservative ideas, creativity is innate and cannot be taught. Gordon Contrary to the belief that if people have the knowledge to understand the creative process, can be used to increase creativity in your life and your job is to identify use of. Third, creative innovation in all fields such as arts, sciences and engineering, and similar to the same fundamental processes are based (Hernandez et al., 2013). This idea is different from what is generally believed, in fact, for many people, the unique creations of art. Gordon believes that the linkages between reproductive thinking in art and science is very strong. Gordon fourth assumption is that innovation (creative thinking) individuals and groups are similar to each other. It opens with individual theories that creativity is not participatory experience is different.

Synectic teaching model based on a concept. Concepts such as metaphor, analogy, direct, and personal than intense conflict this fall (Joyce et al., translated Behrangi, 1386). This model is an effort in the form of metaphors activities of learners using the flow of creativity to create.

The steps of the conventional synoptic learning model are as follows. First, create table categories A and B to describe yourself. A label for example a fairy tale character, label B state icon. Second, list as many positive words as possible that describe yourself. Third, create a direct analogy that describes you. Fourth, create a personal analogy from category A that acts as your best description. Fifth, construct a conflict of identification descriptions that intersect with category A. Sixth, make another direct analogy

from the list of conflicting conflicts that describe category B.

5 AUGMENTED REALITY

AR is a technology that allows computers to display virtual objects appropriately in a real object directly (Milgram and Kishino 1994; Milgram et al., 1994). AR is a merging of virtual objects with real objects. Javornik (2016) says augmented reality has emerged as a new interactive technology and its unprecedented way of complementing the physical environment with virtual annotations offers innovative modes for accessing commercially-relevant content.

6 FINDINGS AND DISCUSSION

The study was carried out to the test the hypothesis that the performance of the experimental group and control group mean scores were significantly different between AR-aided synectic and conventional synectic model.

Table 1: synectics models in writing stories.

Synectic subdivision phase	Verbal creativity subdivision	Summary Of Metafora	Percentage (per 265 words)
Direct analogy	Fluency	96	36.22%
Personal analogy	Fleksibility	105	39.62%
Compressed Conflict	Originality	96	36.22%
Direct analogy	Elaboration	100	37.73%

Total= 397 metafora

Table 1 showed that synectics models in writing stories was 397 metaphors with details subdivision of the synectic phase Fluency-Direct Analogy as much 96 (36.22%), Personal Analogy-Flexibility as much 105 (39.62%), Compressed Conflict-Originality as much 96 (36.22%), Direct analogy-Elaboration as much 100 (37.73%).

Table 2: synectics models in writing stories by using augmented reality.

Synectic subdivision phase	Verbal creativity subdivision	Summary Of Metafora	Percentage (per 265 words)
Direct analogy	Fluency	184	69,43%
Personal analogy	Fleksibility	198	74.71%
Compressed Conflict	Originality	206	77.73%
Direct analogy	Elaboration	227	85,66%

Total= 815 metafora

As table 2 showed that synectics models in writing stories by using augmented reality was 815 metaphors with details subdivision of the synectic phase fluency- direct analogy as much 184 (69.43%), Personal Analogy Flexibility as much 198 (74.71%), Compressed Conflict -Originality as much 206 (77.73%), Direct analogy -Elaboration as much 227 (85.66%).

Table 3: Descriptive Analysis.

Annotations	Group	
	Conventional synectic model	AR aided synectic
Mean	6,63	15,06
Standard Deviation	3,519	7,844

Based on table 3, the average of verbal creativity of students who get AR-aided synectics model is better than the verbal creativity of students who get conventional synectics model.
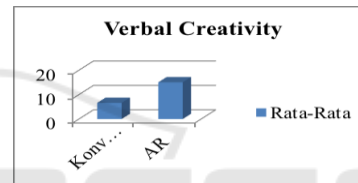

Figure 1: the average of verbal creativity

Inferential Analysis
Normality test
Ho: Student verbal cretifity data is not normally distributed
Ha: Student verbal cretifity data is not normally distributed

Test Criteria:
If the sig value is greater than 0.05 then Ho is accepted and if the sig value is smaller than 0.05 then Ho is rejected.
Figure 1 showed that the students's verbal creativity who got AR-aided synectycs model is better than the students who got conventional synthetic model. The result of metaphor normality calculation to see student's verbal creativity by using SPSS is as follows.

Table 4: Test of Normality.

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Conventional	,165	16	,200*	,909	16	,113
AR	,126	16	,200*	,906	16	,102

*, This is a lower bound of the true significance
a, Lilliefors Significance Correction

Based on table 4 the conventional class obtained sig (1tailed) = 0.113 / 2 = 0.0565> 0.05 then Ho accepted means the data is normally distributed. That for the class obtained by the value of sig (1tailed) = 0.102 / 2 = 0.051> 0.05 then Ho accepted means the data is normally distributed.

Test t

Ho: There is no difference verbal creativity of students who get AR-artificial aided synectic model with verbal creativity of students who get a conventional synectic model

Ha: Verbal creativity of students who get AR-aided syncope model is better than verbal creativity of students who get conventional synectic model

Test Criteria:

If the sig value is greater than 0.05 then Ho is accepted and if the sig value is smaller than 0.05 then Ho is rejected

The results of metaphor calculations to see the students' verbal creativity by using SPSS are as follows:

Table 5: Independent Sample Test

		Verbal Creativity	
Levene's Test for Equality of Variances	F	5,803	
	Sig.	,022	
t-test for Equality of Means	t	-4,288	-4,457
	df	32	24,813
	sig (2-tailed)	,000	,000
	Mean difference	-8,764	-8,764
	Std.Error Difference	2,044	1,966
	95% Confidence Interval Lower	-12,927	-12,815
	Upper	-4,601	-4,713

Based on table 5, it is seen that the value of sig = 0.00 <0.05, then Ho is rejected. Means Verbal creativity of students who get AR-aided syncope model is better than the verbal creativity of students who get a conventional synectic model.

7 CONCLUSIONS

Therefore, a future study with a full range of handedness in relation to verbal creativity and augmented reality. Discussion the major findings of this study were that verbal creativity is associated with synectics aided augmented reality may play an especially important role in synectics model. Because the augmented reality is involved in processing of novelty, it is not surprising that we observed verbal creativity activation during synectics models, which involves implementing novel associations. Our hypothesis was supported. These result support previous synectics studies that showed a significant synectics model advantage in creative thinking. The results showed that synectics models in writing stories was 397 metaphors with details subdivision of the synectic phase Fluency-Direct Analogy as much 96 (36.22%), Personal Analogy-Flexibility as much 105 (39.62%), Compressed Conflict- Originality as much 96 (36.22%), Direct analogy- Elaboration as much 100 (37.73%). Meanwhile synectics models in writing stories by using augmented reality was 815 metaphors with details subdivision of the synectic phase fluency- direct analogy as much 184 (69.43%), Personal Analogy Flexibility as much 198 (74.71%), Compressed Conflict -Originality as much 206 (77.73%), Direct analogy -Elaboration as much 227 (85.66%). The implications of this study are expected to make further synectics model research to improve verbal creativity in each sub-section of the synectic phase as well as provide an overview of the characteristics of the ideal metaphor in each phase.

ACKNOWLEDGEMENTS

REFERENCES

Anderson, K., Anderson, M., 2003. *Text types in English 2*, Macmillan Education Australia. South Yara.

Armiati, S., Sastramiharja, H., 2007. Collaborative Learning Framework. *SNATI*. pp. 42-48. Yogyakarta.

Babits, M., 2001. Using therapeutic metaphor to provide a holding environment: the inner edge of possibility. *Clinical Social Work Journal. 29*(1), pp.21-32.

Bartlett, Davis, 1974. Inventory for appraising adult creativity. *Contemporary Educational Psychology. 7*(1), pp.1-8.

Bechtereva, N. P., Korotkov, A. D., Pakhomov, S. V., Roudas, M. S., Starchenko, M. G., and Medvedev, S. V., 2004. PET study of brain maintenance of verbal creative activity. *Int. J. Psychophysiol. 53,* pp.11–20.

Chesley, G., Gillett, D., Wagner, W. G., 2008. Verbal and Nonverbal Metaphor With Children in Counseling.

Journal of Counseling & Development, 86(4). pp. 399-411.

Dillenbourgh, P., 1999. *What do you mean by 'collaborative learning',* In P. Dillenbourgh (Ed). *Collaborative-learning: Cognitive and Computational Approaches,* Elsevier. Oxford. (pp.1-19).

Emilia, E., 2011. *Teaching Academic Writing*, LAP Lambert Acad Publisher.

Eisenberger, R., Armeli, S., 1997. Can Salient reward increase creative performance without reducing intrinsic creative interest?. *Journal of Personality and Social Psychology. 72*, 652-663.

Fatemipour, H., 2014. The Effect of Synectics and Journal Creative Writing Techniques on EFL Students Creativity. *International Journal of Language Learning and Applied Linguistics World (IJLLALW). 7.*

Gerot, L., Wignel, P., 1994. *Making Sense of Functional Grammar*, AEE. Sydney, NSW.

Gove, P. B., 1966. *Webster's third new international dictionary of the english language*. G.& C.Merriam Co. Springfield, Mass.

Gordon, W. J., 1973. *The metaphorical way of learning and Knowing*, Porpoise Books.

Guilford, J. P., 1959. *Traits of Creativity,* In Anderson, H. H., *Creativity and Its Cultivation*, Harper & Row. New York.

Guilford, J. P., 1967. Creativity: Yesterday, today, and tomorrow. *The Journal of Creative Behaviour. 1*(1), pp.3-14.

Hernandez, R. J. C., Rime, W. J., Jimerson, S. R., 2013. The School Psychologists Primer on Early Onset Schizophrenia: A review of research regarding epidemiology, etiology, assesment, and treatment. *Contemporary School Psychology, Formerly: the California School Psychologist. 17*(1), pp.51-69.

Hundley, G., Montserrat, C., 2007. The Wisdom Jar: A Creative Metaphor for Terminating Counseling Supervision. *Journal of Creativity in Mental Health. 2*(2), pp. 33-38.

Javornik, A., 2016. Augmented reality: Research agenda for studying the impact of its media characteristics on consumer behaviour. *Journal of Retailing and Consumer Services. 30*, pp.252-261.

Joyce, B., Weil, M., Kalhvn, E., 1386. *Teaching Patterns,* Physical Perfection Press.

Kepes, S., McDaniel, M. A., Brannick, M. T., Banks, G. C., 2013. Meta-analytic reviews in the organizational sciences: Two meta-analytic schools on the way to MARS (the Meta-Analytic Reporting Standards). *Journal of Business and Psychology. 28*(2), pp.123-143.

Knapp, Watkins, 2005. *Genre, Text, Grammar: Technologies for Teaching and Assesing Writing*, University of New South Wales Press Ltd. Sydney.

Lyddon, W., Clay, A.L., and Sparks, C.L., 2001. Metaphor and Change in Counseling. *Journal of Counseling & Development. 79*(3), pp. 269-274.

Mallin, B., Walker, J. R., Levin, B., 2013. *Mental health promotion in the schools: Supporting resilience in children and youth Resilience in Children, Adolescent, and Adults,* pp.91-112.

Martin, J. R., Rose, D., 2008. Genre Relations Mapping Sydney: Culture. *Publisher Routledge Informa Ltd.*

Mc Leod, W. T., Hanks, P., 1982. *The New Collins International Dictionary of the English Language*.

Milgram, P., Kishino, F., 1994. A taxonomy of mixed reality visual displays, IEICE (Institut of Electronics, Information and Communication Engineers). *Transactions on Information and Systems*.

Milgram, P., Takemura, H., Utsumi, A., Kishino, F., 1995. Augmented reality: A class of displays on the reality-virtuality continuum. In *Telemanipulator and telepresence technologies. 2351*, pp. 282-293.

Mednick, S., 1962. The associative basis of the creative process. *Psychological Review. 69*(3), pp.220-232.

Montgomery, J. W., Evans, J. L., 2009. Complex sentence comprehension and working memory in children with specific language impairment. *Journal of Speech, Language, and Hearing Research. 52*(2), pp. 269-288.

MyIntyre, L. L., Eckert, T. L., Arbolino, L. A., Redd, Fiese, B. H., 2014. The Transition to Kindergarten for Typically Developing Children: A Survey of School Psychologist Involvement. *Early Childhood Education Journal. 42*(3), pp.203-210.

Nalini, H., 2013. Cognitive Science Perspective: Synectics as a Model of Learning Metaphors. *International Journal of Scientific Research. 2*, pp.141-142.

Robert, T., Kelly, V. A., 2010. Metaphor as an instrument for orchestrating change in counselor training and the counseling process. *Journal of Counselling & Development. 88*(2), pp.182-188.

Runco, M. A., Acar, S., 2010. Do tests of divergent thinking have an experiential bias?. *Psychology of Art, Creativity, and Aesthetics. 4*, pp.144-148.

Seif, A., 1380. *Educational psychology, Tehran*, Publication: Knowledge.

Seligmann, E. R., 2007. *Reaching Students Through Synectics: A Creative Solution*, University of Nothern Colorado. Colorado.

Shinebourne, P., Smith, J. A., 2010. The Communicative power of metaphors: an analysis and interpretation of metaphors in accounts of the experience of addiction. *Pubmed US National Library of Medicine National Institut of Health. 83*, pp.59-73.

Spreen, O., Strauss E., 1998. *A compendium of neuropsychological tests,* Oxford University Press. New York, 2nd edition.

Stevenson, A., 2010. *Oxford Dictionary of English*, Oxford University Press. New York.

Sumiyadi, D. M., 2014. *Sanggar Sastra*, Alfabeta. Bandung.

Torrance, E. P., 1988. *The nature of creativity as manifest in its testing,* In R. J. Sternberg, *The nature of creativity*, Cambridge University Press. New York. (pp.43-73).

Wang, A., Cheng, B., 2010. When does Benevolent Leadership lead to Creativity? The Moderating Role of Creative Identity and Job Autonomy. *Journal of Organizational Behaviour. 31*(1), pp.106-121.

Warnandi, 2002. *Implementasi Model Mengajar Sinektik pada Pelajaran Bahasa Indonesia*, Makalah: Tidak diterbitkan.

Wallach, Kogan, 1965. *A new look at the creativity-intelligence distinction*, New York.

Wenger, E., 1998. *Communities of Practice: Learning, Meaning and Identity*, Cambridge University Press. Cambridge.

Wilson R. C., Guilford J. P., Christensen P. R., 1953. The measurement of individual differences in originality. *Psychological Bulletin. 50*(5), pp.362-370.