PROFILE OF LEARNING DEVELOPING MATHEMATICS CREATIVITY OF JUNIOR HIGH SCHOOL STUDENTS

by jnp.lpmpenalaran@unm.ac.id 1

Submission date: 23-Jun-2023 04:39AM (UTC-0500)
Submission ID: 2093669841
File name: 6b._Alimuddin,_Syahrullah_Asyari_2.pdf (270.01K)
Word count: 3808
Character count: 21764

PROFILE OF LEARNING DEVELOPING MATHEMATICS CREATIVITY OF JUNIOR HIGH SCHOOL STUDENTS

Alimuddin & Syahrullah Asyari
Faculty of Mathematics and Science, State University of Makassar

ABSTRACT: The package for IUSCIRE learning that is developed through preliminary study, design, construction, testing, evaluation, and revision in this article is implemented in an experimental research *one group pretest-posttest design* to investigate the profile of IUSCIRE learning which is effective to develop students' mathematics creativity. The effectiveness criteria refers to the improvement and difference of students' mathematics creativity, either before or after IUSCIRE learning takes place. The research sample consists of two classrooms selected using *simple cluster random sampling* techniques of 6 homogenous classrooms of Grade VIII of State Junior High School 26 Makassar. The research instruments are pretest and posttest concerning mathematics creativity which are developed by referring to the theory on creative thinking process and the scoring rubric is by Guilford. The collected data are then analyzed descriptively and inferentially. The research results show that IUSCIRE learning is effective in developing students' mathematics creativity. Thus the learning profile is: 1) the learning package consists of four components, that is: lesson plan, student worksheet, student book, and assessment sheet; 2) there are seven stages of this learning, that is: introduction, understanding, synthesis, creation, interaction, reflection, and g) extension. This research impacts on the improvement of learning process quality.

1 INTRODUCTION

The current thinking in improving creativity was started in 1990s because the existence of changes in social, economic, and technology fields (Craft, 2005; Shaheen, 2010). Creativity is considered as basic capacity to survive and succeed in the future (NACCCE, 1999). The relation between creativity and education is not only to promote self development and self actualization, but also to equip students with basic capacity for their future life. Runco (2004), Oldham & Cummings (1996), Goldenberg, Mazursky & Solomon (1999) state that one having higher order thinking ability can create vocation for others, solve problem effectively, overcome any change occurring, use available chance, be excel in technology, adapt with change, succeed in life, excel in work, or can alter the world face.

Perception on creativity source also gradually commences shifting from aptitude inheritance (genius is inherited through the most aptitude individual) to diverse human ability. Fisher (1990) state that creativity shows a very little relationship to score on IQ test. According to Kitano (1986), there is someone with high intelligence, but not creative. On the contrary, there is a creative one, but not having high intelligence. Meanwhile, Torrance (1988, 2000) state that creative potential is owned by all people and can be enhanced through exercise continuously. Whereas Craft (2001), Feldman & Benjamin (2006) state that all individuals possess potential to be creative. Creative thinking always evolves and can be learned, as well as can be trained (de Bono, 2007; Esquivel, 1995; Cheng, 2004; & Wu, 2004). Simonton (2003) states that teacher plays a great role in developing students creativity. Teacher and traditional practice become obstacle for improving creativity in classroom. On the other side, there is only a few responses from school teacher to promote the enhancement of creativity by means of education. Therefore, comprehensively learning framework must be developed to advance students' creativity in accordance with the characteristics of subject, particularly mathematics which requires reasoning and development of human thinking power. Then, the question is, "what is the process of mathematics learning which can develop mathematics students' creativity?". The answer to this question is actually the focus of this paper.

2 DEFINITION OF MATHEMATICS CREATIVITY

Mathematics creativity is defined by many experts differently. In general, experts define mathematics creativity solely in cognitive aspect which comprises thinking process and thinking product.

2.1 *Mathematics Creativity as a Thinking Process*

Singh (1988), Torrance (1988), and Krutetskii (1976) define mathematics creativity as a thinking process which is initiated by formulating hypothesis concerning cause and effect of mathematics problem, hypothesis testing, hypothesis retesting and modification, as well as communicating the results. Parnes (1992) state that creative thinking process consists of 5 (five) stages, that is: collecting fact, investigating problem, finding ideas, getting answer/solution, and finding acceptance. Ervynck (1991) reveals that creative thinking process in mathematics consists of 3 (three) stages, that is, initial technique, algorithmic activity, and creative activity (conceptual, constructive). Meanwhile, Siswono (2007) encompasses statements of Krulik & Rudnick (1999), Airasian et al (2001), Isaksen (2003), Hermain (Lumsdaine & Lumsdaine, 1995) by formulating the main characteristics of creative thinking process as follows. (1) synthesizing idea. It means intertwinement of one's ideas acquired from learning in the classroom, or from his/her daily experiences; (2) constructing ideas. It means generating ideas in terms of problems given as a result of the process of synthesizing previous ideas, (3) planning the implementation of ideas. It means choosing a certain idea to be used in carrying out problem given, (4) applying idea. This means implementing or utilizing the planned idea to be carried out.

2.2 *Mathematics Creativity as a Thinking Product*

Haylock (1997), Jensen (1973), Kim et al (2003), and Tuli (1980) state that mathematics creativity is the result of thinking process characterized by *fluency*, *flexibility*, and *originality*. Studies in mathematics creativity (Jensen, 1973; Singh, 1988) emphasize more on the measurement of mathematics creativity in mathematics problem solving and problem posing by referring to *fluency*, *flexibility*, and *originality* aspects. *Fluency* means the number of correct answers that one shows in mathematics problem solving, but following the same pattern. *Flexibility* means the number of approaches or different ways that a student uses in carrying out mathematics problem given or the number of categories of correct answer that a student reveals. Thus, in this case, student states two answer categories. Whereas originality means unfamiliar answer (new answer to student constituting combination of some mathematics concepts). Within this research, mathematics creativity is considered as students ability in finding way/solution of a mathematics open-ended and non-routine problems fulfilling *fluency* and *flexibility*. The indicators are: 1) ability in formulating problem, 2) ability in producing ideas, 3) ability in synthesizing ideas, 4) fluency in producing way/solution, and 5) fluency in producing way/solution. Meanwhile originality aspect is not included in this research! This is because if a student can reveal way/solution of a non-routine problem given, then he/she would be considered as finding new thing.

2.3 *Learning Theory Related to Mathematics Creativity*

There is a statement by Confrey (1990) and von Glasersield (Suparno, 1997) that the essential thing from constructivist view is that knowledge may not be accepted passively. It may not just be transferred, but it should be interpreted and constructed actively by individual. Human constructs his/her knowledge through interaction with object, phenomena, experience and environment. Piaget assumes that all students grow and pass through the same stages of development, but it takes place in the different speed (Slavin, 1994: 45). This view implies that, in learning, students' way of thinking or students' process of mental work are highly important to consider not only by looking at their thinking results. In this term, Vygotsky states that each individual develops in social context. The intellectual development comprising meaning, memory, attention, mind, perception, understanding (awareness) move in two areas, that is, from inter- psychology area to intra-psychology area (Confrey, 1995: 38). Bruner states that learning involves three processes taking place almost at the same time, namely: (1) acquiring new information, (2) transforming information, and (3) testing knowledge relevance and its appropriateness (Bruner cited in Dahar, 1988: 122). According to Polya (1973), there are four main stages for solving a problem, that is: (1) understanding the problem; (2) devising a plan; (3) carrying out the plan; and (4) evaluating the obtained results. Further, the strategy that teacher use to help students solve problem is heuristic strategy. According to Polya (1973) and Schoenfeld (1985), heuristic strategy is a technique that problem solvers use when experiencing difficulty in solving problem. Heuristic is method and rule in discovering and reconstructing concept through problem solving. Referring to the aforementioned learning theories, it is then concluded that characteristics of learning constructivism are: 1) using students' prior knowledge to construct new knowledge, 2) providing space for students

to experience, observe, ask question, analyze, and draw a conclusion, 3) forming learning community, 4) providing complex mathematics problem, 5) interaction and communication, 6) precision-engineering of thinking process (connection and synthesis). These characteristics are highly related to mathematics creativity indicators, namely: formulating problem, being able to produce ideas, being able to synthesize ideas, and being fast/smooth in producing way/solution, and being fluent in producing way/solution, so that the development of IUSCIRE learning refers to the above characteristics.

2.4 *Hypothetical Framework of IUSCIRE Learning*

Referring to as learning theories and mathematics creativity characteristics, then it is devised a hypothetical framework of learning that can develop students' mathematics creativity which is termed as IUSCIRE learning.

Table 2.1 Hypothetical Framework of IUSCIRE Learning

SYNTAX	TEACHER ACTIVITY	STUDENT ACTIVITY
Introduction	• Conditioning students in order to be ready to learn • Clarifying learning goals • Clarifying the importance of material • Exploring students' prior knowledge	• Revealing idea • Asking • Answering
Understanding	• Classical learning • Informing students in terms of mathematics problem solving strategy • Providing mathematics problem. • Facilitating students to formulate problem • Facilitating students to identify concepts and principles that students need to solve problem • Brainstorming	• Revealing idea • Asking • Answering • Discussion • Interaction
Synthesis	• Facilitating students in terms of concepts in generating solving strategies • Facilitating students in choosing appropriate strategy • Facilitating students to implement strategy	• Revealing idea • Asking • Answering • Discussion • Interaction
Creation	• Organizing students into some heterogeneous groups in terms of mathematics ability • Providing students worksheet containing mathematics *open-ended* problem • Facilitating intergroup discussions • Providing *scaffolding*	• Interaction • Thinking • Trying • Reasoning • Conclusion
Interaction	• Facilitating presentation • Facilitating intergroup discussions • Reinforcement	• Revealing idea • Asking • Answering • Discussion
Reflection	Facilitating students to identify things that have been understood and have not been understood	• Interaction • Writing • Conclusion
Extension	• Making clear things that probably result in misconception. • Making clear things that have not been understood	• Scrutinizing • Asking • Taking note

3 RESEARCH METODOLOGY

Learning package (Lesson plan, student worksheet, and student book) that has been developed through four stages, that is: 1) to take preliminary study, 2) design, 3) construction, 4) test, evaluation, and revision are implemented in an experimental research of the form *one group pretest-posttest design* to see the effectiveness of IUSCIRE learning in developing mathematics creativity of grade VIII students. IUSCIRE learning is applied in as many as 25 persons of grade VIII-2 students (Group I), and also as many as 25 persons of grade VIII-5 students (Group II) that are selected using *cluster random sampling* technique of 6 homogenous classrooms of grade VIII at State Junior High School 26 Makassar. The number of meetings is four times with different teacher and time in Group I and Group II. This is to minimize research bias caused by factors coming from teacher and time. Mathematics creativity criteria: 1) N-Gain score is at least 0.3; 2) there is a significant difference between students' creativity before and after implementing IUSCIRE learning, and 3) mathematics creativity of Group I and Group II is the same. Data is then collected using mathematics creativity test consisting of five questions which are developed by referring to mathematics creativity indicators. Meanwhile the utilized scoring rubric is developed from creativity rubric by Guilford (1971). Next, the quantitatively descriptive analysis used here is aimed at describing students' mathematics creativity, N-Gain analysis is aimed at seeing the enhancement of students' mathematics creativity, and t-Test analysis is aimed at seeing the difference between students' creativity before and after implementing the learning, and to see whether the mathematics creativity of Group I and Group II is the same?

4 RESULTS AND DISCUSSIONS

4.1 *Research Results*

4.1.1 *Reviewing Analysis of N-Gain Average Score in Each Mathematics Creativity Indicator*

Analysis of N-Gain average score for Group I and Group II in each mathematics creativity indicator is presented in Table 4.1.

Table 4.1
The Results of Statistical Analysis of N-Gain Average Score in Each Mathematics Creativity Indicator of Students in Group I and Group II

No.	Group	N-Gain Average Score in Each Indicator				
		IN- 1	IN-2	IN- 3	IN- 4	IN-5
1	I	0.58	0.52	0.45	0.38	0.34
2	II	0.60	0.56	0.49	0.39	0.35

Note:
IN-1: Ability in formulating problem
IN-2: Ability in producing ideas
IN-3: Ability in synthesizing ideas
IN-4: Fastness/smoothness in producing way/solution
IN-5: Fluency in producing way/solution

Table 4.1 shows that: 1) N-Gain average score for all mathematics creativity indicators is more than 0.3 and it is in the moderate category, either Group I, or Group II; 2) Although the score is less, we see that any difference of N-Gain average score in each indicator. Of all N-Gain average scores, the fluency indicator average score is the least.

4.1.2 *Reviewing Two-Tailed t-Test of Statistical Analysis with Homogenous Variance in the Results of Mathematics Creativity Test*

To know whether any difference between students' creativity before and after implementing the IUSCIRE learning, then it is conducted Two-Tailed t-Test analysis, α = 5% (0.05). The results of data analysis with t-Test of Group I and Group II are shown in Table 4.2.

Table 4.2
The Results of *Pretest* and *Posttest* concerning Students' Mathematics Creativity Using t-Test Statistics

Pretest		*Posttest*		Calculated t Value		Correlation	f	t -table value	Sig. (2-tailed)
Mean ($\bar{x}_1$)	Standard deviation (s_1)	Mean ($\bar{x}_2$)	Standard deviation (s_2)						
7.59	.49	7.78	3.79	-16.39	0	.141	9	.68	.00

Table 4.2 shows that: 1) the average of the *pretest* score is less than the average of the *posttest* score; 2) calculated t value is less than t-table. This condition describes that any difference between students' creativity before and after implementing the IUSCIRE learning with the significant level 0.05.

1.1.1 *Reviewing Variance Analysis*

Variance analysis is aimed at testing the difference of N-Gain score of students' mathematics creativity for two groups at once. In this case, it is analyzed using one-way analysis of variance (one-way anova).

Table 4.3. Summary of Anova

Sources of Variation (SV)	Sum Squares (SS)	Degree of Freedom (df)	Mean Square (MS)
Intergroup (K)	0.09	2	0.045
Inner group (d)	2.32	47	0.032
Total (T)	2.41	49	-

$F_0 = \frac{MK_K}{MK_d} = \frac{0.045}{0.032} = 1.41$, F_t 5% = 3.13 which show that the value $F_0 < F_t$ 5%. This indicates that there is no significant difference of students' mathematics creativity between Group I and Group II.

From the outline above, it is concluded that IUSCIRE learning is effective in developing students' mathematics creativity.

4.2 *Discussions*

IUSCIRE learning is developed by referring to constructivism stating that knowledge is not acquired through transfer, but constructed or generated actively by individual itself. Human in this school constructs knowledge through interaction with object, phenomena, experience, and environment. The typical and essential characteristics of the IUSCIRE learning is providing students with complex problem to be solved by themselves collaboratively, meanwhile teacher only provides them with *scaffolding*. Students working collaboratively will impact on their social development, interaction ability and communication. Carrying out complex problem trains students' ability in observing, identifying, asking, producing ideas, devising strategies, reasoning, connecting, concluding, and evaluating. These abilities are highly important for developing students' mathematics creativity. The existence of significant difference between students' mathematics creativity either before and after implemented IUSCIRE learn-

ing and the consistency of the improvement of their mathematics creativity of grades taught by different teacher and time show that IUSCIRE learning impact on the improvement of students' mathematics creativity. Although the impact to students; mathematics creativity is still relatively less, but the obtained results with only four meetings describe that the direction of IUSCIRE learning is appropriately developing students' mathematics creativity. Developing this creativity needs long time and continuous train.

5 CLOSING

5.1 *Conclusion*

Based on the research results and discussions, it is then concluded about the profile of IUSCIRE learning that this learning is effective in developing students' mathematics creativity of grade VIII of junior high school. Within this learning it is used student worksheet containing activities on *open-ended* problem solving with guided discovery instructions. Regarding student book, it contains mathematics problem, alternative problem solving, as well as hints for strategy and exercise. The stages of IUSCIRE learning are: a) *introduction*. This contains some activities, that is: indicator, competency, the importance of learning material, and contextual problem; b) *understanding*. This contains activity to identify and formulate problem; c) *synthesis*. This contains activity to devise solving strategy; d) *creation*. This contains activity to produce different ideas by carrying out *open-ended* problem, e) *interaction*. This contains brainstorming activity; f) *reflection*. This contains self assessment activity; and g) *extension*. This contains activity to reinforce and overcome students' misconception.

5.2 *Implication*

Implementation of this IUSCIRE learning takes us to some implications: 1) the improvement of students' activity; 2) the attainment of minimum mastery criteria and classical mastery; 3) positive response to the learning; and 4) the improvement of teacher learning quality.

6 REFERENCES

Airasian, P.W., Anderson, L.W., Krathwol, D.R., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). *A taxonomy for learning, teaching and assessing: A revision of Bloom's taxonomy of educational objectives*. New York: Addison Wesley Longman.

Cheng, V. M. Y. (2004). Progress from traditional to creativity educa-tion in Chinese societies. In S. Lau, A. N. N., Hui, & G. Y. C. Ng (Eds.), *Creativity: When East meets West*. Singapore City: World Scientific.

Confrey, J. (1990). A review of research on student conceptions in mathematics, science programming. In *Review of Research in Education* 16:3-55, C.B. Cazden, ed. Washington, DC: American Educational Research Association.

Confrey, J. (1995) How Compatible are radical constructivism, socio-cultural approaches and social constructivism? In L.P. Steffe and J. Gale (eds) *Constructivism in Education*. Hillsdale, NJ: Lawrence Erlbaum.

Craft, A. (2001) Little c Creativity. In A. Craft, B. Jeffrey and M. Leibling *Creativity in Education,* London: Continuum.

Craft, A. (*2005*). Creativity in Schools: Tensions and Dilemmas. Abingdon: Routledge.

Dahar, R.W.(1988). *Teori-Teori Belajar*. Erlangga. Jakarta.

de Bono, E. (2007). *How to have creative ideas : 62 exercises to develop the mind*. London: Vermilion.

Ervynck, G. (1991). Mathematical creativity. Advanced mathematical thinking. In D. Tall (Hg.) Advanced Mathematical Thinking (42-53). Dodrecht: Kluwer.

Esquivel, G. B. (1995). Teacher behaviours that foster creativity. *Educational Psychology Review, 7*(2), 185-202.

Feldman, D., & Benjamin, A. C. (2006). Creativity and education: An American retrospective. *Cambridge Journal of Education, 36*, 319-336.

Fisher, R. (1990). *Teaching Children to Think*. Hemel Hempstead, Herts: Simon and Schuster Education.

Goldenberg, J., Mazursky, D., & Solomon, S. (1999). Toward Identifying the Inventive Templates of New Products: A Channeled Ideation Approach. Journal of Marketing Research, Vol. 36, No. 2, pp. 200-210.

Guilford, J.P. (1971). *The nature of human intelligence*. New York: McGraw-Hill.

Haylock, D. (1997). Recognizing mathematical creativity in schoolchildren. International Reviews on Mathematical Education, 29(3), 68–74. Retrieved August 16, 2016, from http://www.fizkarlsruhe.de/fix/publications/zdm/adm97

Isaksen, S. G. (2003). *CPS: Linking creativity and problem solving*. Retrieved August 22, 2016, from www.cpsb.com.

Jensen, L. R. (1973). The relationships among mathematical creativity, numerical aptitude and mathematical achievement. Unpublished doctoral dissertation, University of Texas at Austin.

Kim, H., Cho, S., & Ahn, D. (2003). Development of mathematical creative problem solving ability test for identification of gifted in math. Gifted Education International, 18, 184–174.

Kitano, H. (1986). The role of Apanteles glomeratus venom in the defensive response of its host, Pieris rapae crucivora. Journal of Insect Physiology 32, 369-375.

Krulik S, Rudnick JA (1999). Innovative Tasks to Improve Critical and Creative Thinking Skills. In Stiff, Lee V. and Curcio, Frances R (Eds). Developing Mathematical reasoning in Grades K-12 (pp.138-145). Reston, Virginia: The National Council of Teachers of Mathematics, Inc.

Krutetskii, V. A. (1976). The psychology of mathematical abilities in school children. Chicago: University of Chicago Press.

Lumsdaine, Edward & Lumsdine, Monika.(1995). Creative Problem Solving. Thinking Skills for a Changing World. Singapore: McGraw-Hill Book Co.

NACCCE. (1999) All our futures: creativity, culture and education. London: DfEE.

Oldham, G. R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. Academy of Management Journal, 39, 607–634.

Parnes, S.J. (1992). Source book for creative problem-solving: A fifty year digest of proven innovation processes. Buffalo, NY: Creative Education Foundation Press.

Polya, G. (1973). *How To Solve It* (2nd Ed.). New Jersey: Princeston University Press.

Runco, M. A. (2004) Creativity, Annual Review of Psychology 55: 657–87.

Schoenfeld, A. H. (1985). Making sense of "out loud" problem solving protocols. Journal of Mathematical Behavior, 4, 171-191.

Shaheen, R. (2010). Creativity and education. *Creative Education, 11*(3), 166-169. http://dx.doi.org/10.4236/ce.2010.13026

Simonton, D. K. (2003). Human creativity: Two Darwinian analyses. In S. M. Reader & K. N. Laland (Eds.), *Animal innovation* (pp. 309–325). New York, NY: Oxford University Press.

Singh, B. (1988). Teaching-learning strategies and mathematical creativity. Delhi, India: Mittal Publications.

Slavin, R.E. (1994). Using Student Team Learning (2nd Ed.). Baltimore, MD: Johns Hopkins University, Center for Social Organization of Schools.

Siswono, T.Y.E. 2007. *Penjenjangan Kemampuan Berpikir Kreatif Siswa dalam Memecahkan dan Menajukan Masalah Matematika*. Dissertation. Postgraduate Program, State University of Surabaya (Unesa), Indonesia.

Suparno, P. (1997). *Filsafat Konstruktivisme dalam Pendidikan*. Jakarta: Kanisius

Torrance, E.P. (1988). The nature of creativity as manifest in its testing. In R.J. Sternberg (Ed.), The nature of creativity (pp. 43-75). Cambridge, MA: Cambridge University Press.

Torrance, E.P. (Ed.) (2000). On the edge and keeping on the edge. Bensenville, IL: Scholastic Testing Service, Inc.

Tuli, M. R. (1980). Mathematical creativity as related to aptitude for achievement in and attitude towards mathematics (Doctoral dissertation, Panjab University, 1980). Dissertation Abstracts International, 42 (01), 122.

Wu, J. J. (2004). Recognizing and nurturing creativity in Chinese stu-dents. In S. Lau, A. N. N., Hui, & G. Y. C. Ng, (Eds.), *Creativity: When East meets West*. Singapore City: World Scientific.

PROFILE OF LEARNING DEVELOPING MATHEMATICS CREATIVITY OF JUNIOR HIGH SCHOOL STUDENTS

ORIGINALITY REPORT

44%	44%	6%	1%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	hozekf.oerp.ir Internet Source	33%
2	tvet.conference.upi.edu Internet Source	8%
3	journal.unnes.ac.id Internet Source	1%
4	Submitted to Universitas Muhammadiyah Purwokerto Student Paper	1%
5	www.scirp.org Internet Source	<1%
6	ojs.unsulbar.ac.id Internet Source	<1%
7	baadalsg.inflibnet.ac.in Internet Source	<1%
8	www.researchgate.net Internet Source	<1%
	media.neliti.com	

9	Internet Source	<1%
10	Siti - Hindun, Yani Eka Sapitri, Euis Eti Rohaeti. "INCREASEMENT OF MATHEMATICAL CONNECTION ABILITY AND SELF-EFFICACY OF STUDENTS THROUGH PROBLEM-BASED LEARNING APPROACH WITH MULTIMEDIA", (JIML) JOURNAL OF INNOVATIVE MATHEMATICS LEARNING, 2019 Publication	<1%
11	id.123dok.com Internet Source	<1%

Exclude quotes	Off	Exclude matches	Off
Exclude bibliography	On		

PROFILE OF LEARNING DEVELOPING MATHEMATICS CREATIVITY OF JUNIOR HIGH SCHOOL STUDENTS

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

S/V This subject and verb may not agree. Proofread the sentence to make sure the subject agrees with the verb.

Sp. This word is misspelled. Use a dictionary or spellchecker when you proofread your work.

S/V This subject and verb may not agree. Proofread the sentence to make sure the subject agrees with the verb.

Prep. You may be using the wrong preposition.

Article Error You may need to use an article before this word.

P/V You have used the passive voice in this sentence. Depending upon what you wish to emphasize in the sentence, you may want to revise it using the active voice.

Missing "," You may need to place a comma after this word.

Missing Apos. Since this is a contraction, you need to use an apostrophe to form it.

Article Error You may need to use an article before this word. Consider using the article **the**.

P/V You have used the passive voice in this sentence. Depending upon what you wish to emphasize in the sentence, you may want to revise it using the active voice.

Pronoun This pronoun may be incorrect.

Hyph. You may need to add a hyphen between these two words.

Proofread This part of the sentence contains a grammatical error or misspelled word that makes your meaning unclear.

Article Error You may need to use an article before this word.

S/V This subject and verb may not agree. Proofread the sentence to make sure the subject agrees with the verb.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Garbled Grammatical or spelling errors make the meaning of this sentence unclear. Proofread the sentence to correct the mistakes.

Article Error You may need to use an article before this word. Consider using the article **a**.

Article Error You may need to use an article before this word. Consider using the article **the**.

Verb This verb may be incorrect. Proofread the sentence to make sure you have used the correct form of the verb.

Prep. You may be using the wrong preposition.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Missing "," You may need to place a comma after this word.

Article Error You may need to use an article before this word.

Proofread This part of the sentence contains a grammatical error or misspelled word that makes your meaning unclear.

P/V You have used the passive voice in this sentence. Depending upon what you wish to emphasize in the sentence, you may want to revise it using the active voice.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Article Error You may need to remove this article.

Missing "," You may need to place a comma after this word.

Article Error You may need to use an article before this word. Consider using the article **a**.

Missing "," You may need to place a comma after this word.

P/V You have used the passive voice in this sentence. Depending upon what you wish to emphasize in the sentence, you may want to revise it using the active voice.

Confused You have used **an** in this sentence. You may need to use **a** instead.

Sp. This word is misspelled. Use a dictionary or spellchecker when you proofread your work.

Proper Noun If this word is a proper noun, you need to capitalize it.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Sp. This word is misspelled. Use a dictionary or spellchecker when you proofread your work.

Article Error You may need to use an article before this word. Consider using the article **the**.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Missing "," You may need to place a comma after this word.

Article Error You may need to use an article before this word. Consider using the article **the**.

Missing "," You may need to place a comma after this word.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Possessive You may need to use an apostrophe to show possession.

Garbled Grammatical or spelling errors make the meaning of this sentence unclear. Proofread the sentence to correct the mistakes.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Missing "," You may need to place a comma after this word.

Article Error You may need to remove this article.

Article Error You may need to use an article before this word. Consider using the article **the**.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word. Consider using the article **the**.

Article Error You may need to use an article before this word.

Frag. This sentence may be a fragment or may have incorrect punctuation. Proofread the sentence to be sure that it has correct punctuation and that it has an independent clause with a complete subject and predicate.

S/V This subject and verb may not agree. Proofread the sentence to make sure the subject agrees with the verb.

Article Error You may need to use an article before this word. Consider using the article **the**.

Missing "," You may need to place a comma after this word.

Article Error You may need to use an article before this word.

Proper Noun If this word is a proper noun, you need to capitalize it.

P/V You have used the passive voice in this sentence. Depending upon what you wish to emphasize in the sentence, you may want to revise it using the active voice.

Missing "," You may need to place a comma after this word.

Article Error You may need to use an article before this word.

P/V You have used the passive voice in this sentence. Depending upon what you wish to emphasize in the sentence, you may want to revise it using the active voice.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Prep. You may be using the wrong preposition.

Word Error Did you type "**the**" instead of "**they**," or have you left out a word?

Missing Apos. Since this is a contraction, you need to use an apostrophe to form it.

Possessive You may need to use an apostrophe to show possession.

Article Error You may need to use an article before this word. Consider using the article **the**.

Sp. This word is misspelled. Use a dictionary or spellchecker when you proofread your work.

Sp. This word is misspelled. Use a dictionary or spellchecker when you proofread your work.

Article Error You may need to use an article before this word.

Possessive You may need to use an apostrophe to show possession.

Missing "," You may need to place a comma after this word.

Sp. This word is misspelled. Use a dictionary or spellchecker when you proofread your work.

Article Error You may need to use an article before this word. Consider using the article **the**.

Article Error You may need to use an article before this word. Consider using the article **the**.

Article Error You may need to use an article before this word.

Proofread This part of the sentence contains a grammatical error or misspelled word that makes your meaning unclear.

Article Error You may need to use an article before this word. Consider using the article **the**.

Article Error You may need to use an article before this word. Consider using the article **the**.

Sp. This word is misspelled. Use a dictionary or spellchecker when you proofread your work.

Proofread This part of the sentence contains a grammatical error or misspelled word that makes your meaning unclear.

Article Error You may need to use an article before this word. Consider using the article **the**.

Garbled Grammatical or spelling errors make the meaning of this sentence unclear. Proofread the sentence to correct the mistakes.

Wrong Article You may have used the wrong article or pronoun. Proofread the sentence to make sure that the article or pronoun agrees with the word it describes.

Missing "," You may need to place a comma after this word.

Sentence Cap. Remember to capitalize the first word of each sentence.

Article Error You may need to use an article before this word. Consider using the article **the**.

Possessive This word may be a plural noun and may not need an apostrophe.

Article Error You may need to use an article before this word.

Missing "," You may need to place a comma after this word.

P/V You have used the passive voice in this sentence. Depending upon what you wish to emphasize in the sentence, you may want to revise it using the active voice.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word. Consider using the article **the**.

Article Error You may need to remove this article.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Article Error You may need to use an article before this word.

Missing Apos. Since this is a contraction, you need to use an apostrophe to form it.

Prep. You may be using the wrong preposition.

Article Error You may need to use an article before this word. Consider using the article **the**.

Article Error You may need to use an article before this word. Consider using the article **a**.

Wrong Article You may have used the wrong article or pronoun. Proofread the sentence to make sure that the article or pronoun agrees with the word it describes.

Article Error You may need to remove this article.

Article Error You may need to use an article before this word.

Article Error You may need to remove this article.

Hyph. You may need to add a hyphen between these two words.

Article Error You may need to use an article before this word.