Doc vs Internet

83.47% Originality	16.53% Similarity	97 Sources

Web sources: 97 sources found

1. http://journal2.um.ac.id/index.php/sd/article/download/1418/pdf	7.07%
2. http://journal2.um.ac.id/index.php/sd/article/view/1418	5.95%
3. https://www.routledgehandbooks.com/doi/10.4324/9781315694382-37	1.26%
4. https://onlinelibrary.wiley.com/doi/10.1002/pits.21613	1.26%
5. https://link.springer.com/referenceworkentry/10.1007/978-3-319-17727-4_28-1	1.26%
6. https://link.springer.com/chapter/10.1007/978-3-030-01535-0_17	1.26%
7. https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1540-4781.1989.tb05325.x	1.26%
8. https://ila.onlinelibrary.wiley.com/doi/abs/10.1598/JAAL.49.1.3	1.26%
9. https://sced.boun.edu.tr/sites/sced.boun.edu.tr/files/aslan-tutak-cv-nov2018.pdf	1.22%
10. http://www.citethisforme.com/topic-ideas/other/Bilbiography-53990263	1.22%
11. https://sced.boun.edu.tr/people/fatma-aslan-tutak	1.22%
12. https://link.springer.com/article/10.1007%2Fs11858-016-0796-6	1.22%
13. https://jurnal.uns.ac.id/ijsascs/article/view/5106	1.13%
14. http://scholar.google.com/citations?user=7nlAxEgAAAAJ&hl=en	1.08%
15. https://experts.illinois.edu/en/persons/gloriana-gonzalez-rivera/publications	0.99%
16. https://onlinelibrary.wiley.com/doi/abs/10.1207/s15516709cog1903_1	0.95%
17. https://www.qitepinscience.org/wp-content/uploads/2018/01/Laporan-Hasil-Penelitian-Bidang-IPA-…	0.95%
18. http://www.academia.edu/8237530/Relations_among_Contextual_Silent_Reading_Fluency_Non-_..	0.95%
19. https://link.springer.com/article/10.1007%2Fs10055-016-0298-4	0.86%
20. http://dergipark.gov.tr/edu7/issue/35792/400669	0.81%
21. https://www.science.gov/topicpages/s/students+learn+mathematics.html	0.81%
22. https://www.science.gov/topicpages/g/grade+students+develop.html	0.77%
23. https://hypothes.is/u/acct%3Agandalf511%40hypothes.is	0.77%
24. http://jestec.taylors.edu.my/Vol%2013%20issue%205%20May%202018/13_5_4.pdf	0.72%
25. http://independent.academia.edu/TambyMeerah	0.72%
26. http://cerme8.metu.edu.tr/wgpapers/WG4/WG4_Arici.pdf	0.63%
27. https://www.science.gov/topicpages/o/one-group+pretest-posttest+design	0.63%
28. https://www.science.gov/topicpages/q/qualitative+spatial+reasoning.html	0.63%
29. https://eric.ed.gov/?q=geometry&ff1=dtySince_2015&ff2=eduSecondary+Education	0.63%
30. https://www.science.gov/topicpages/p/pretest-posttest+quasi-experimental+design.html	0.63%
31. https://www.sciencedirect.com/journal/procedia-social-and-behavioral-sciences/vol/232/suppl/C	0.54%
32. http://staff.uny.ac.id/category/jurusan-fmipa/pendidikan-matematika	0.5%
33. https://www.science.gov/topicpages/v/valuable+learning+opportunity	0.45%
34. https://www.science.gov/topicpages/i/interactive+learning+opportunities.html	0.45%

Similarity
Similarity from a chosen source
abc Possible character replacement
Citation
References

35. https://www.science.gov/topicpages/f/flexible+learning+opportunities.html 0.45%
36. https://www.science.gov/topicpages/m/mathematical+formalism+based.html 0.45%
37. https://www.amrita.edu/center/cyber-security/publications 0.45%
38. https://www.science.gov/topicpages/p/primary+school+turkey.html 0.45%
39. https://www.science.gov/topicpages/s/schools+provide+opportunities.html 0.45%
40. https://www.science.gov/topicpages/s/school+current+teaching.html 0.45%
41. https://www.science.gov/topicpages/e/early+learning+opportunities 0.45%
42. https://www.science.gov/topicpages/h/hands-on+learning+opportunity 0.45%
43. http://iopscience.iop.org/issue/1742-6596/895/1 0.45%
44. http://iopscience.iop.org/volume/1742-6596/895 0.45%
45. https://www.science.gov/topicpages/t/team+teaching+approach.html 0.45%
46. https://www.science.gov/topicpages/h/hands-on+learning+opportunities 0.45%
47. https://www.science.gov/topicpages/c/constructivist+learning+approach.html 0.45%
48. https://www.science.gov/topicpages/t/teaching+approach+based 0.45%
49. https://www.science.gov/topicpages/m/mathematics+teaching+efficacy.html 0.45%
50. https://www.science.gov/topicpages/m/mathematics+word+problem.html 0.41%
51. https://www.science.gov/topicpages/t/teaching+web+development.html 0.41%
52. https://www.science.gov/topicpages/t/teaching+materials+designed.html 0.41%
53. https://www.science.gov/topicpages/t/teachers+association+selected.html 0.41%
54. https://www.science.gov/topicpages/t/teacher+selection+tools.html 0.41%
55. http://www.science.gov/topicpages/s/science+methods+class.html 0.41%
56. https://www.science.gov/topicpages/a/applied+science+aas.html 0.41%
57. https://www.science.gov/topicpages/f/fourth+grade+class.html 0.41%
58. https://onlinelibrary.wiley.com/doi/full/10.1111/j.1468-5884.2012.00517.x 0.36%
59. https://onlinelibrary.wiley.com/doi/full/10.1080/00207594.2012.709092?globalMessage=0 0.36%
60. http://www.science.gov/topicpages/m/mathematics+assessment+receives.html 0.36%
61. https://www.science.gov/topicpages/l/language+modeling-the+chief.html 0.36%
62. https://www.science.gov/topicpages/p/page+replacement+policies 0.36%
63. https://onlinelibrary.wiley.com/doi/full/10.1002/tea.20072 0.36%
64. https://www.science.gov/topicpages/c/concomitant+histological+verification.html 0.36%
65. http://www.science.gov/topicpages/c/computer-assisted+instruction+programs.html 0.36%
66. https://www.science.gov/topicpages/h/higher+instructional+efficiency.html 0.36%
67. http://publichealthresearch.umd.edu/archived-posters/2016 0.36%
68. https://www.science.gov/topicpages/s/state+university+professor.html 0.36%
69. http://www.science.gov/topicpages/d/development+programs+based.html 0.36%
70. https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=9100GBOO.TXT 0.36%
71. http://www.siop.org/conferences/99Con/99ConProg/SaturdayPM.aspx 0.36%
72. https://www.science.gov/topicpages/p/physics+learning+center.html 0.36%
73. http://jurnalnasional.ump.ac.id/index.php/JPPM/article/download/1781/2172 0.36%
74. https://www.science.gov/topicpages/p/primary+teacher+students.html 0.36%
75. http://iopscience.iop.org/issue/1757-899X/296/1 0.36%
76. https://vdocuments.site/hot-pepper-report-extraction.html 0.36%
77. https://www.science.gov/topicpages/f/factors+influencing+career 0.36%
78. https://www.science.gov/topicpages/h/higher+performing+schools.html 0.36%
79. https://www.science.gov/topicpages/s/school+instructional+materials.html 0.36%
80. https://www.science.gov/topicpages/c/chief+scientist+dr.html 0.36%

81. http://www.science.gov/topicpages/l/learning+center+learning.html 0.36%
82. http://www.metatoc.com/journals/1187-journal-of-thermoplastic-composite-materials 0.36%
83. https://www.rehab.research.va.gov/map.htm 0.36%
84. http://onlinelibrary.wiley.com/doi/10.1080/00207594.2012.709092/full 0.36%
85. https://www.science.gov/topicpages/s/system+chief+nursing.html 0.36%
86. http://www.gis.smumn.edu/research-at-smu/grad-papers.shtml 0.36%
87. https://www.science.gov/topicpages/t/transformational+learning+theory.html 0.36%
88. https://www.science.gov/topicpages/i/inquiry-based+classroom+activities.html 0.36%
89. https://www.sciencedirect.com/science/article/pii/S0925753517305659 0.36%
90. https://oatext.com/14th-International-Nutrition-Diagnostics-Conference-INDC-2014.php 0.36%
91. https://www.science.gov/topicpages/s/sports.html 0.36%
92. http://www2.smumn.edu/ra/gis/research-at-smu/grad-papers.shtml 0.36%
93. https://semnas.unikama.ac.id/lppm/prosiding/penelitian 0.36%
94. https://education.msu.edu/EPC/library/papers/WP-54-Measurement-of-mathematics-content 0.36%
95. http://repository.unikama.ac.id/343/1/Orasi%20Ilmiah%20Genap.pdf 0.36%
96. https://www.science.gov/topicpages/u/university%2Bdistinguished%2Bprofessor.html 0.36%
97. https://eric.ed.gov/?q=special+education&ff1=eduGrade+4&ff2=subElementary+School+Student… 0.36%

Space Geometry Module Using Contextual Teaching and Learning (CTL) Approach

Dyah Tri Wahyuningtyas[1], Nury Yuniasih[1], Edy Bambang Irawan[2] and Susiswo[2]
[1]*Universitas Kanjuruhan Malang, Jl. S. Supriadi no 48, Malang*
[2]*State University of Malang, Jl. Semarang no 5, Malang*
dyahtriwahyu@unikama.ac.id

Keywords: CTL, Module, Space Geometry.

Abstract: Mathematics learning on the space geometry topic requires a conceptual module that relates to daily life. The purpose of this research was to developing space geometry module by Contextual Teaching and Learning (CTL). This research applied 4D Thiagarajan research and development method (Define, Design, Develop, and Disseminate). Data analysis technique used descriptive data analysis quantitative and qualitative. The result of this research was space geometry module with CTL approach which could be used by primary school students. The module that had been developed was a space geometry module by using CTL approach that had been validated by expert. The average module validation result was 0.82 with very valid and feasible applied category. Implementation of the module in primary school indicated an increase in students' understanding of space geometry topic.

1 INTRODUCTION

Mathematics is not a memorizing science (Suryawati et al., 2010). Mathematics teaches students to think logically, analytically, systematically, critically, and creatively (Hadar, 2017). Geometry is fun and interesting topic in mathematics (Bayrak et al., 2014). By using a concrete object, the learning of geometry becomes more effective (Alqahtani and Powell, 2017; Arici and Aslan-tutak, 2015). Space geometry is one of the topics of geometry learning. The application of space geometry concept delivered to the students on teaching materials is still a memorization of area formula and volume formula (González, 2013).

The teaching materials contain conceptual topic (Ramirez-Velarde et al., 2015) as well as problems in the form of assignments (Son and Kim, 2015; Wijaya et al., 2015). Giving an assignment aims to determine the achievement of students' learning (Calenda and Tammaro, 2015) according to their respective abilities (Clarke and Roche, 2018). The tasks in the form of textbooks exercises still contain routine questions and less develops students' creativity in understanding the concept (Wahyuningtyas and Shinta, 2017). Hence, it needs teaching materials in the form of modules that can develop students' creativity in learning space geometry concept. Module is one form of self-directed teaching material that systematically and contextually packaged (Căprioară, 2015; Sukinah, 2016).

Contextual learning provides an opportunity for Contextual Teaching and Learning Approach (CTL) provides experience for students in knowledge, self-study, and developing mathematic skill (Hwang et al., 2015). In CTL approach the students were given an idea that mathematics is really applicable and useful in daily life (Selvianiresa and Prabawanto, 2017). Therefore, CTL approach activities need to be developed in mathematics learning module. Activities in CTL approach module include problem solving, learning from the environment, working in groups, collaborating with communities, and applying learning materials through real experience (Suryawati et al., 2010). The use of CTL approach module had proven effective in improving students learning result (Wahyuningtyas and Shinta, 2017). Hence, the purpose of this research was to develop space geometry module with CTL approach.

Wahyuningtyas, D., Yuniasih, N., Irawan, E. and Susiswo, .
Space Geometry Module Using Contextual Teaching and Learning (CTL) Approach.
In *Proceedings of the Annual Conference on Social Sciences and Humanities (ANCOSH 2018) - Revitalization of Local Wisdom in Global and Competitive Era*, pages 353-356
ISBN: 978-989-758-343-8

2 RESEARCH METHODS

This research was a research and development method by adopting a model 4-D by Thiagarajan (Hudha et al., 2018) as in Figure 1.

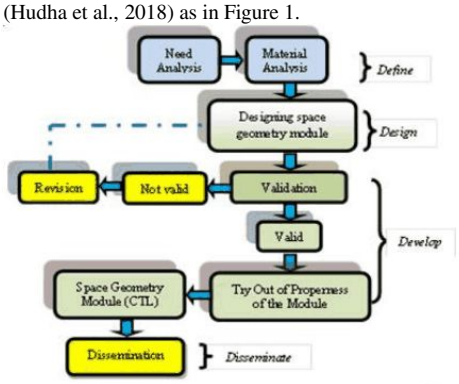

Figure 1: Development Procedures of Space Geometry Module.

In Figure 1 consists of 4 stages: (1) define is to decide and explain learning needs by analyzing the objectives and limitations of the material, (2) design is the learning module design, thus obtained prototypes (examples of learning modules), (3) develop which aims to produce drafts, learning tools that have been revised based on the input of the experts, and (4) disseminate which aims to test the effectiveness of the module usage in teaching and learning activities.

The data collection instruments were module validation sheet, observation sheet and learning result test. The data analysis on the development research of space geometry module by Contextual Teaching and Learning (CTL) approach that was (a) Qualitative Data, in the form of submission, criticism, response and suggestion from validator (b) Quantitative Data, in the form of validation result of the module and students' learning result.

3 RESULTS AND DISCUSSION

The development of the module through Contextual Teaching and Learning (CTL) approach in this research consisted of four stages. The first stage was define, conducted identification and study of teaching materials used in 5th grade about space geometry topic. Based on observations in the field of teaching materials by using thematic books where the space geometry topic was not discussed clearly. Companion teaching materials in the form of student' worksheets only provided routine exercise questions. Based on the result of the study, it was necessary to have independent teaching material in the form of student learning module. The second stage was design, making module design presented in syntax space geometry module by Contextual Teaching and Learning (CTL) approach The syntax of the development space geometry module result by CTL approach can be seen in table 1 (Suryawati et al., 2010; Wahyuningtyas et al., 2017).

Table 1: Syntax Module Build Space with CTL Approach.

***Contextual Teaching and Learning* (CTL)**	**Development Result**	**Activity on Module**
Constructivism	Giving an example of space geometry in daily life	Let's Analyze
Inquiry	Directing the students to find the formula of space geometry	Let's Find
Asking	Digging material information that had been understood and not known yet by students.	Let's Ask
Community Learning	Group discussion	Let's Cooper
Modeling	Delivering material through stories related to space geometry	Let's Listen
Reflection	Exercising questions to be solved by students as evaluation.	Let's reflect
Authentic Assessment	Assessing independent module learning result	Now I can do this!

Table 1 shows the module syntax that had been developed by the CTL approach. At each stage of CTL was developed through the activities that exist in the space geometry module.

The third stage was develop, generating space geometry module by CTL approach that would be validated by validator. Expert validation results on the format module aspect obtained the validity level of 0.88 hence that was said to be very valid, from the module contents aspect the validity level was 0.80 thus it was categorized very valid, from the discussion aspect it had the validity level of 0.80 hence it was categorized very valid and from the aspect of illustration 0.82 thus categorized as very valid. Therefore, from the whole aspect earn an average of 0.82 and categorized very valid. Thus, a

module with a valid CTL approach was feasible in the field test (Suastika and Tri Wahyuningtyas, 2018). Mathematics modules with previous valid criteria had also been developed on the addition and subtraction topics of integers (Wahyuningtyas and Shinta, 2017), Fractions (Suastika and Wahyuningtyas, 2018) and circles and spheres (Yunita, 2016).

The fourth stage is disseminate, space geometry module by CTL approach which trial in 5th grade students of Malang. Based on observation result of teacher activity obtained 85,71% with good category, it showed that teacher able to manage learning well. While the results of students' activity observation obtained 97.14% with good category, it showed the students active in the use of space geometry module by CTL approach.

Through the CTL approach, the actively of primary school students in learning mathematics was increasing (Haryoto and Narimo, 2013; Selvianiresa and Prabawanto, 2017). Mathematics learning becomes effective with the use of space geometry module by contextual approach. The effectiveness of learning through previous contextual approaches had been applied to reading lessons (Kulaç and Walters, 2016; Mediha and Enisa, 2014), literature (Ates et al., 2014). Through the use of space geometry module, students' understanding was increasing. This was obtained from the increase of students' learning result test that was 77.33% to 97.33%. Previously, the use of mathematics module by CTL approach on integer material could also improve students' understanding (Wahyuningtyas and Shinta, 2017).

4 CONCLUSIONS

The space geometry module by CTL approach that had been developed proved feasible to be applied in primary school. This was evidenced based on the results of expert validation on the module format aspect, the contents of the module, discussion, and illustration got an average of 0.82 were categorized very valid. With the use of space geometry module by CTL approach the students were more active in learning and students' understanding increased by 20% based on students' learning test result. Some things that still need to be developed in the learning module for primary school students are developing modules with other topics as well as with different learning approaches. Acknowledgments are submitted to Kemenristek DIKTI who had funded this research.

REFERENCES

Alqahtani, M. M., Powell, A. B., 2017. Mediational activities in a dynamic geometry environment and teachers' specialized content knowledge. *Journal of Mathematical Behavior*. *48* (August), 77–94.

Arici, S., Aslan-tutak, F., 2015. The effect of origami-based instruction on spatial visualization, geometry achievement, and geometric reasoning. *International Journal of Science and Mathematic Education*. (November 2013), 179–200.

Ates, S., Yildirim, K., Can, R., Turkyilmaz, M., 2014. Relations among Contextual Silent Reading Fluency, Non-contextual Silent Reading Fluency, and Reading Comprehension: A Path Analysis of Fifth-grade Readers. *Procedia - Social and Behavioral Sciences*. *116*, 4010–4014.

Bayrak, N., Yüce, S., Yüce, K., 2014. The Investigation of the Viewpoint of Academic Staff and Graduate Students in Teaching Geometry in Elementary School. *Procedia - Social and Behavioral Sciences*. *116*, 2115–2119.

Calenda, M., Tammaro, R., 2015. The Assessment of Learning: From Competence to New Evaluation. *Procedia - Social and Behavioral Sciences*. *174*, 3885–3892.

Căprioară, D., 2015. Problem Solving - Purpose and Means of Learning Mathematics in School. *Procedia - Social and Behavioral Sciences*. *191*, 1859–1864.

Clarke, D., Roche, A., 2018. Using contextualized tasks to engage students in meaningful and worthwhile mathematics learning. *Journal of Mathematical Behavior*. (November 2016), 1–14.

González, G., 2013. A geometry teacher's use of a metaphor in relation to a prototypical image to help students remember a set of theorems. *Journal of Mathematical Behavior*. *32*(3), 397–414.

Hadar, L. L., 2017. Opportunities to learn: Mathematics textbooks and students' achievements. *Studies in Educational Evaluation*. *55*(August), 153–166.

Haryoto, S., Narimo, S., 2013. Contextual Math Learning Based on Lesson Study Can Increase Study Communication. *International Journal of Education*. *5*(4), 48.

Hudha, M. N., Aji, S. D., Huda, C., 2018. E-Rubric: Scientific Work Based on Android for Experimental Physic. *IOP Conference Series: Materials Science and Engineering*. *288*(1).

Hwang, G. J., Chiu, L. Y., Chen, C. H., 2015. A contextual game-based learning approach to improving students' inquiry-based learning performance in social studies courses. *Computers and Education*. *81*, 13–25.

Kulaç, D., Walters, J., 2016. The Effect of Contextual Inferencing Strategies on EFL Learners Attitudes towards Reading. *Procedia - Social and Behavioral Sciences*, *232*(April), 486–493.

Mediha, N., Enisa, M., 2014. A Comparative Study on the Effectiveness of Using Traditional and Contextualized Methods for Enhancing Learners' Vocabulary

Knowledge in an EFL Classroom. *Procedia - Social and Behavioral Sciences*. *116*, 3443–3448.

Ramirez-Velarde, R., Alexadrov, N., Perez-Cazares, R., Barba-Jimenez, C., 2015. Mathematical modelling based learning strategy. *Procedia Computer Science*. *51*(1), 1694–1704.

Selvianiresa, D., Prabawanto, S., 2017. Contextual Teaching and Learning Approach of Mathematics in Primary Schools Contextual Teaching and Learning Approach of Mathematics in Primary Schools. *International Conference on Mathematics and Science Education (ICMScE)*.

Son, J. W., Kim, O. K., 2015. Teachers' selection and enactment of mathematical problems from textbooks. *Mathematics Education Research Journal*. *27*(4), 491–518.

Suastika, I. K., Wahyuningtyas, D., 2018. Developing Module of Fractional Numbers using Contextual Teaching and Learning Approach. *Pancaran Pendidikan*. *7*(1), 23–32.

Sukinah, 2016. The Learning Module Application Of Contextual Teaching And Learning As An Effort To Improve Mathemathic Achievement In Probability Material. *Jurnal Pendidikan*. *1*(2), 190–204.

Suryawati, E., Osman, K., Meerah, T. S. M., 2010. The effectiveness of RANGKA contextual teaching and learning on student's problem solving skills and scientific attitude. *Procedia - Social and Behavioral Sciences*. *9*, 1717–1721.

Wahyuningtyas, D. T., Shinta, R. N., 2017. The Use Of Learning Module Of Addition And Subtraction Of Integers By Contextual Teaching And Learning (CTL) Approach To Improve Conceptual Understanding Concept Of 4th Grade Primary School Students. *Jurnal Pendidikan*. *2*(1), 8–13.

Wahyuningtyas, D. T., Yuniasih, N., Irawan, E. B. S., 2017. Design Contextual Teaching and Learning Approach On Geometry Learning Module. *Pancaran Pendidikan*. *6*(3), 23–32.

Wahyuningtyas, D. T., Shinta, R. N., 2017. Developing Addition And Subtraction Of Integers Learning Module Using CTL (Contextual Teaching And Learning) Approach Based On Curriculum 2013. *Pancaran Pendidikan*. *6*(3), 177–182.

Wijaya, A., van den Heuvel-Panhuizen, M., Doorman, M., 2015. Opportunity-to-learn context-based tasks provided by mathematics textbooks. *Educational Studies in Mathematics*. *89*(1), 41–65.

Yunita, A., 2016. Development A Constructivist Module And Web On. *Journal on Mathematic Education*. *7*(2), 109–116.