Course Review Horay-Based Bamboo Dancing in 21st Century Learning: How Can We Assess Students' Mathematical Creative Thinking?

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Article Info	Abstract
	Education in the 21st-century era can provide students with learning experiences that influence individual growth. This study aimed to determine the effect of integrating the Bamboo Dance learning model and Course Review Horay on students' mathematical creative thinking. The design of this study was quasi-experimental. Data collection instruments were open-ended test questions of mathematical creative thinking. The normality test and the homogeneity test were used as the analysis techniques. The hypothetical testing was performed using one-way ANOVA and Scheffe's method. The results of the analysis showed that the data were normally distributed and homogeneous. As a result of applying the Bamboo Dance learning model integrated with Course Review Horay, the students' mathematical creative thinking was better than the conventional learning model. The Bamboo Dance Model can provide information equally. The Course Review Horay's learning model can make students happy during the learning. This research implies that lecturers can apply BD-CRH as an alternative in improving students' mathematical creative thinking. Key Words: Bamboo Dance; Course Review Horay; Mathematical Creative Thinking.

Introduction

Education in the industrial revolution era can provide students with learning experiences. Learning experiences can influence an individual's growth in the environment (Cantor et al., 2019; Capel et al., 2019; Duerden & Witt, 2010), in harmony between society, nature, and character (Ruihong, 2007; Ruyadi, 2010; Sukmawan & Nurmansyah, 2014; Yuanpei, 2005). Good education in a country can impact competent human beings (Komarudin, 2017; Magier-Łakomy & Rozkwitalska, 2013; Pantić & Wubbels, 2010). Education can provide experience for every human being an important role in the assessment(Ibrahim, 2015; Komarudin et al., 2020; Suherman et al., 2018; Vidákovich, 2014). This experience can be gained through learning. Through the learning process (Andriani et al., 2019; Darling-Hammond et al., 2020; Hayashi et al., 2020; Siregar et al., 2020; Vickers et al., 2015), humans can develop and progress (Efendi et al., 2019; Hakim, 2016; Purwanti et al., 2016; Syazali et al., 2019), be prosperous, and happy. They pointed out that learning in the 21st century is important to increasing creative thinking students in mathematics. Furthermore, this learning is most essential in schools and life going forward.

One effort to educate the nation's life is to improve schools' existing components (Andriani et al., 2019; Hartinah et al., 2019; Hasanah et al., 2019). One of the components is creative

educators (Anggoro, Efendi, et al., 2019; Huda et al., 2019; Kamandoko & Suherman, 2017) and innovation in the learning process, such as in the selection of learning models to be applied (Huang et al., 2015; Kozma, 2008; Ruihong, 2007; Sudarsana, 2016). Educators who have the motivation to develop learning methods will create new learning models (M. N. Fauzi et al., 2017; Komariyah & Syam, 2016; Marcus, 2014). Students do not need to experience boredom, and their knowledge could be improved instead (Berk, 2010; Permatasari et al., 2018; Putra & Anggraini, 2016; San Pedro et al., 2013).

The right learning model can create a pleasant learning atmosphere (Andriani et al., 2019; Hardianto, 2005; Hasanah et al., 2019; Huda et al., 2020; Irwandani, 2015; Sumarni, 2015), arouse interest (Jiang et al., 2016), attitudes, and creativity in delivering their arguments (Haase & Lautenschläger, 2011; Kennedy & Miceli, 2010; Komarudin et al., 2014) so that students' mathematical creative thinking could be improved (Damayanti et al., 2019; Fatah et al., 2016; Gumanti et al., 2018). Creative thinking is one of the mathematical skills that must be mastered in learning mathematics (Malmia et al., 2019; Purwanti et al., 2016; Septiyana & Pujiastuti, 2018; Tamrin et al., 2018).

The field facts show that students' mathematical abilities need to be improved (Maarif, 2016; Rany et al., 2020; Shodikin, 2015; Suherman et al., 2020). The students also feel bored in class (Daschmann et al., 2014; Kristin, 2016; Yasin et al., 2020). This problem can be minimized by applying a fun learning model yet places more emphasis on the concept of thinking (Anggoro, Agustina, et al., 2019; Diez-Olivan et al., 2019; Ismanto et al., 2019). The learning model applied was Bamboo Dance (BD) learning model combined with Course Review Horay (CRH). The Bamboo Dance learning model is a learning model that can make students more active (Isnaini et al., 2019; Novitasari, 2017a). The Bamboo Dance learning model encourages students to share information in pairs within a short time regularly. This model was selected since it can make students more active and increase their concept of thinking.

Some previous studies have shown that the Bamboo Dance learning model can evenly distribute information to all students through their respective pairs in a short and concurrent time (Chao et al., 2019; Fiyany, 2018; Novitasari, 2017b), the CRH learning model can improve learning including teacher's skills, students' activities, and students' learning outcomes (Kasna et al., 2015; Muhandaz et al., 2018; Suryani et al., 2016), students are more active, and teachers are only as facilitators, dynamists, and mentors in learning activities (Prameswari et al., 2017). Also, CRH can increase interaction among students in the learning process (Hermawan et al., 2018; Lapatta et al., 2015; Wahyudi & Tripuspitaningrum, 2018; Wardani et al., 2019). This cooperative learning model is expected to significantly increase learning activities and outcomes (Anggraeny, 2018; Faradita, 2018; K. Fauzi et al., 2019; Lince, 2016; Marhadi et al., 2018a; Meganingtyas et al., 2019; Putri et al., 2018).

Concerning previous studies, this research novelty lies in integrating the Bamboo Dance learning model and Course Review Horay learning model to measure cognitive abilities in mathematical creative thinking. The research will explain the Course Review Horay-based Bamboo Dance learning model (BD-CRH) on the students' mathematical creative thinking.

The Research Methods

The method employed was a quantitative method of quasi-experimental design. The population of this study was drawn from grade 7 (N=160) students in Indonesia. The sampling technique used was simple random sampling with randomized class techniques. Experimental class 1 was treated with the BD-CRH learning model, while experiment class 2 was treated with the Bamboo Dance learning model. The control class was treated with the learning model commonly used at school.

The data of the study was collected through tests of mathematical creative thinking. The test was open-ended questions of triangle material. The indicators of mathematical creative thinking are as follows (Ningsih et al., 2017):
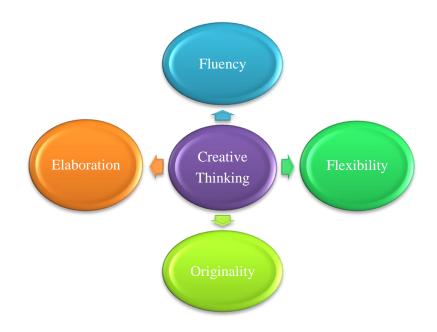

Figure 1. The Indicators of Mathematical Creative Thinking

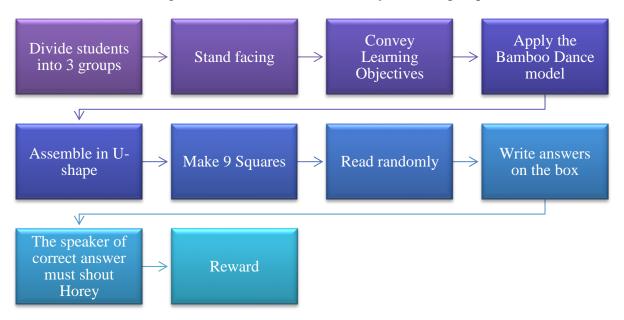The Bamboo Dance integrated with Course Review Horay's learning steps are as follows:

Figure 2. The Bamboo Dance integrating Course Review Horay Learning Model

The prerequisite tests performed were the normality and homogeneity tests, while one-way ANOVA was appropriate to the hypothetical test performed.

The Results of the Research and the Discussion

The study results revealed the influence of BD-CRH on mathematical creative thinking. The data collected were taken through pretest and posttest tests, both from the experimental class and the control class. The highest value (X_{max}) and the lowest value (X_{min}) in all three classes were sought as well as the central tendency including the mean ($\bar{x}$) and standard deviation. Here is the summary of the mathematical creative thinking was taken by pretest and posttest.

Table 2. Description of Mathematical Creative Thinking Results

Class	pretest				posttest			
	x_{max}	x_{min}	$\bar{x}$	St.Dev	x_{max}	x_{min}	$\bar{x}$	St.Dev
Experiment1	85.50	50.30	75.73	10.57	90.00	66.00	83.44	4.77
Experiment2	78.00	40.50	65.48	7.748	85.00	64.00	82.53	4.92
Control	60.50	40.00	54.54	10.12	78.00	54.00	76.41	5.23

Concerning Table 2, it can be seen that the results were different between pretest and posttest. The highest post-testing score was obtained by the experimental class 1, while the control class obtained the lowest score. The following is the graphic of the pretest and posttest scores on mathematical creative thinking.

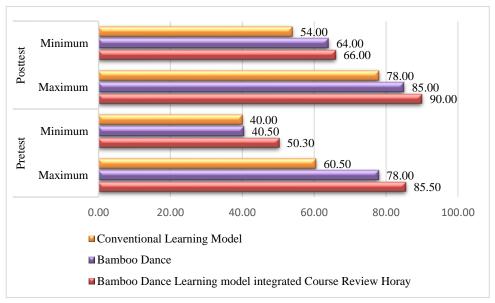Figure 3. The Pretest and Posttest Scores on Mathematical Creative Thinking

Figure 3 illustrates the maximum and minimum scores of the pretest and posttest in three different classes. These data indicate a significant increase in students' mathematical creative thinking after implementing Bamboo Dance integrated with Course Review Horay in the experimental class 1, Bamboo Dance model in the experimental class 2, and the school's model in the control class. The following are the data of mathematical creative thinking that is normally distributed and homogeneous.

Table 3. The Data of Normality Test on Mathematical Creative Thinking

Class	$\bar{\chi}$	$L_{observed}$	$L_{critical}$	Conclusions
BD-CRH	83.44	0.152		H_0 is accepted
Bamboo Dance	82.53	0.155	0.159	H_0 is accepted
Conventional Learning Model	76.41	0.129		H_0 is accepted

Table 3 shows that the data was normally distributed based on the tests performed in three classes. Furthermore, a homogeneity test was carried out as displayed in Table 4.

Table 4. The Data of Homogeneity Test on Mathematical Creative Thinking

Class	Dk	si^2	$Dk.si^2$	$Logsi^2$	$Dk.Logsi^2$
BD-CRH	31	20.791	644.530	1.318	40.858
Bamboo Dance	31	28.153	872.728	1.450	44.950
Conventional Learning Model	31	15.216	471.696	1.182	36.642

Table 4 shows that the data have the same variance. Furthermore, the research hypothesis was tested using a one-way ANOVA test. The data can be seen in Table 5.

Table 5. The Results of ANOVA Test

JKG	KTG	KTK	$F_{observed}$	$F_{critical}$	P
5656.156	60.819	492.792	8.103	2.703	H_0 is rejected

Based on Table 5, $F_{observed} \geq F_{critical}$. Students' average score with the BD-CRH differs from the other learning applications. The BD-CRH learning model and the conventional model influences the students' mathematical creative thinking. To see which model affects dominantly, a double compatibility test was performed using Scheffe's method.

Table 6.The Results of the Scheffe's Test

Treatment	Paired\Treatment	$F_{observed}$	$F_{critical}$	α	Conclusion
1	$(\bar{X}_1 - \bar{X}_2)^2$	0.352	2.703		H_0 is accepted
2	$(\bar{X}_1 - \bar{X}_3)^2$	13.997	2.703	0.05	H_0 is rejected
3	$(\bar{X}_2 - \bar{X}_3)^2$	9.870	2,703		H_0 is rejected

Regarding Table 6, in treatment 1, there is no difference between the Bamboo Dance learning model integrated with Review Courses Horay compared to the Bamboo Dance model. In treatment 2, there is a significant difference between the Bamboo Dance learning model integrated with Review Courses Horay and conventional learning. In treatment 3, there is a significant influence between the Bamboo Dance learning model and conventional dance models.

These results are due to the Bamboo Dance learning model's nature. The students understand concepts with a clear learning structure, allowing them to exchange information briefly and regularly (Sutarna & Kusdiana, 2018). It provides students opportunities to process information and improves their thinking of the concept (Dewi, 2016).

The Bamboo Dance learning model makes students more active (M. N. Fauzi et al., 2017) because it can evenly distribute the material. This material can be conveyed well because of the repeated delivery of material by fellow friends in turn. Furthermore, the Course Review Horay

learning model can make students enjoy because they can practice questions about the material that has been conveyed in the Bamboo Dance learning model by playing games (M. N. Fauzi et al., 2017; Rohman & Susiolo, 2017). Furthermore, it makes students become more interested and understand the material. It means that in line with the results of research conducted by Dessy Aanggraini that the Course Review Horay learning model can increase students' activities, learning outcomes, and teachers' skills (Marhadi et al., 2018a; Triyana et al., 2019).

Based on the analysis results, the marginal mean obtained from applying the Bamboo Dance learning model integrated with Course Review Horay was 83.719, while the marginal mean for applying the Bamboo Dance learning model was 82.531. These results show that the Bamboo Dance learning model's marginal mean integrated with Course Review Horay is greater than the Bamboo Dance model.

The Bamboo Dance learning model is said to be better because students can exchange experiences with each other in the learning process (Sutarna & Kusdiana, 2018), increase collaboration among students (Chao et al., 2019), and increase tolerance among fellow students (Rohartati, 2019). It can be seen that the Bamboo Dance learning model integrated with Course Review Horay is better. Furthermore, in these learning models, students will be divided into three groups as random groups. Regarding a grouping that a teacher then gives treatment, the next steps are to face and convey learning objectives. In this step, the students doing some work together for their group.

Regarding the learning model steps, the members of groups do not have to be three. It can be less or more according to class conditions. The next step is dividing each group into two parts then make them stand face-to-face. Students sit on the sidelines of the bench or in front of the class. In the next step, the groups form U shape. Each group makes 9 boxes where each box is made of 10 papers to write the answers. Furthermore, read out the questions randomly and ask students to write answers on the paper. If the answer is correct, then it is obligatory to show the chants of each winning group. The score is calculated from the correct answers. Finally, giving rewards to the group that wins or gets the highest score.

The significant results are that students play an active role in learning activities during the learning process. This Bamboo Dance learning model makes students more involved because they have to face each other and transfer the learning materials. This material can be conveyed well because of the delivery of material repeatedly by fellow friends in turn. Rahayu and Istiani state that learning bamboo dance provides sharing of information simultaneously with various partners quickly (Rahayu & Istiani, 2019).

The Course Review Horay learning model is fun because the students practice questions about the material that has been conveyed in the Bamboo Dance learning model. It makes students more interested in understanding the material. The statement is in line with the results of research conducted by Marhadi et al. that applying for the Course Review Horay learning model can increase students' activity, learning outcomes, and teachers' skills (Marhadi et al., 2018b). The Course Review Horay approach can be lively and fun because the students must shout when they win the round.

Conclusion and Suggestion

Based on the study results, the Bamboo Dance learning model integrated with Course Review Horay on mathematical creative thinking is better than the Bamboo Dance learning model on the mathematical concepts. Furthermore, this model can be a solution to make students more active during the learning process.

References

Andriani, S., Suyitno, H., Junaidi, I., Suherman, S., Mujib, M., & Mardiyah, M. (2019). The Application of Differential Equation of Verhulst Population Model on Estimation of Bandar Lampung Population. *Journal of Physics: Conference Series*, *1155*, 012017.

Anggoro, B. S., Agustina, S., Komala, R., Komarudin, K., Jermsittiparsert, K., & Widyastuti, W. (2019). An Analysis of Students' Learning Style, Mathematical Disposition, and Mathematical Anxiety toward Metacognitive Reconstruction in Mathematics Learning Process Abstract. *Al-Jabar: Jurnal Pendidikan Matematika*, *10*(2), 187–200.

Anggoro, B. S., Efendi, H., & Suherman, S. (2019). The Impact Of Ethnomathematics-Based Probing-Prompting Learning Method On Class IX SMP Negeri 2 Way Tenong Students'mathematical Communication Skills Year 2016/2017. *Asian Journal of Current Research*, 1–8.

Anggraeny, G. (2018). The Application Of Course Review Horay to Increase Liveliness and Learning Outcomes. *Classroom Action Research Journal (CARJO)*, *1*(3), 133–138.

Berk, R. A. (2010). How do you leverage the latest technologies, including web 2.0 tools, in your classroom? *International Journal of Technology in Teaching & Learning*, *6*(1).

Cantor, P., Osher, D., Berg, J., Steyer, L., & Rose, T. (2019). Malleability, plasticity, and individuality: How children learn and develop in context1. *Applied Developmental Science*, *23*(4), 307–337.

Capel, S., Leask, M., & Younie, S. (2019). *Learning to teach in the secondary school: A companion to school experience*. Routledge.

Chao, J., Jiang, T.-W., Yeh, Y.-H., Liu, C.-H., & Lin, C.-M. (2019). Integration of ARCS motivational model and IT to enhance students learning in the context of Atayal culture. *EURASIA Journal of Mathematics, Science and Technology Education*, *15*(11), 1–16.

Damayanti, E., Septuri, S., & Suherman, S. (2019). Pengetahuan Deklaratif Siswa Tunanetra Dalam Pembelajaran Matematika. *Inovasi Pembangunan: Jurnal Kelitbangan*, *7*(2), 173–173.

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, *24*(2), 97–140.

Daschmann, E. C., Goetz, T., & Stupnisky, R. H. (2014). Exploring the antecedents of boredom: Do teachers know why students are bored? *Teaching and Teacher Education*, *39*, 22–30.

Dewi, C. (2016). Implementasi Metode Bamboo Dancing untuk Meningkatkan Hasil Belajar Ilmu Pengetahuan Sosial pada Siswa Kelas V Sekolah Dasar. *JURNAL INDRIA (Jurnal Ilmiah Pendidikan Prasekolah Dan Sekolah Awal)*, *1*(1).

Diez-Olivan, A., Del Ser, J., Galar, D., & Sierra, B. (2019). Data fusion and machine learning for industrial prognosis: Trends and perspectives towards Industry 4.0. *Information Fusion*, *50*, 92–111.

Duerden, M. D., & Witt, P. A. (2010). The impact of direct and indirect experiences on the development of environmental knowledge, attitudes, and behavior. *Journal of Environmental Psychology*, *30*(4), 379–392.

Efendi, H., Anggoro, B. S., & Suherman, S. (2019). The Impact of Ethnomathematics-Based Probing-Prompting Learning Method On Class IX SMP Negeri 2 Way Tenong Students'mathematical Communication Skills Year 2016/2017. *Asian Journal of Current Research*, 1–8.

Faradita, M. N. (2018). Pengaruh Model Pembelajaran Kooperatif Tipe Course Review Horay Terhadap Motivasi Belajar Siswa Mata Pelajaran IPA di Sekolah Dasar. *ELSE (Elementary School Education Journal): Jurnal Pendidikan Dan Pembelajaran Sekolah Dasar*, *1*(2b).

Fatah, A., Suryadi, D., & Sabandar, J. (2016). Open-Ended Approach: An Effort in Cultivating Students' Mathematical Creative Thinking Ability and Self-Esteem in Mathematics. *Journal on Mathematics Education*, *7*(1), 11–20.

Fauzi, K., Amin, M., Dirgeyase, I. W., & Priyatno, A. (2019). Building Learning Path of Mathematical Creative Thinking of Junior Students on Geometry Topics by Implementing Metacognitive Approach. *International Education Studies*, *12*(2), 57–66.

Fauzi, M. N., Usodo, B., & Subanti, S. (2017). The Effect Of Make A Match (MAM) Type Model and Bamboo Dance Type Model Through Cooperative Learning on Students Motivation. *Suska Journal of Mathematics Education*, *3*(1), 26–32.

Fiyany, F. N. (2018). Keefektifan Model Pembelajaran Bamboo Dancing dan Jigsaw Ditinjau Dari Hsail Belajar Matematika Siswa Kelas 4 SD. *JTAM| Jurnal Teori Dan Aplikasi Matematika*, *2*(1), 76–86.

Gumanti, A. A. M., Supriadi, N., & Suherman, S. (2018). Pengaruh Pembelajaran dengan Musik Klasik Terhadap Kemampuan Pemecahan Masalah Matematis Peserta Didik. *Prosiding Seminar Nasional Matematika Dan Pendidikan Matematika*, *1*, 393–399.

Haase, H., & Lautenschläger, A. (2011). The 'teachability dilemma'of entrepreneurship. *International Entrepreneurship and Management Journal*, *7*(2), 145–162.

Hakim, L. (2016). Pemerataan Akses Pendidikan Bagi Rakyat Sesuai Dengan Amanat Undang-Undang Nomor 20 Tahun 2003 Tentang Sistem Pendidikan Nasional. *EduTech: Jurnal Ilmu Pendidikan Dan Ilmu Sosial*, *2*(1).

Hardianto, D. (2005). Media Pendidikan sebagai Sarana Pembelajaran yang Efektif. *Majalah Ilmiah Pembelajaran*, *1*, 95–104.

Hartinah, S., Suherman, S., Syazali, M., Efendi, H., Junaidi, R., Jermsittiparsert, K., & Umam, R. (2019). Probing-Prompting Based On Ethnomathematics Learning Model: The Effect On Mathematical Communication Skill. *Journal for the Education of Gifted Young Scientists*, *7*(4), 799–814.

Hasanah, U. N., Thahir, A., Komarudin, K., & Rahmahwaty, R. (2019). MURDER Learning and Self Efficacy Models: Impact on Mathematical Reflective Thingking Ability. *Journal for the Education of Gifted Young Scientists*, *7*(4), 1123–1135.

Hayashi, A., Chen, C., Ryan, T., & Wu, J. (2020). The role of social presence and moderating role of computer self efficacy in predicting the continuance usage of e-learning systems. *Journal of Information Systems Education*, *15*(2), 5.

Hermawan, H., Putro, K. H., & Sugini, S. (2018). The Effectiveness of Course Review Horay Method on Social Sciences Learning Achievement of Visually Impaired Students of SLB A YKAB Surakarta. *Journal of ICSAR*, *2*(2).

Huang, Y., Leu, M. C., Mazumder, J., & Donmez, A. (2015). Additive manufacturing: Current state, future potential, gaps and needs, and recommendations. *Journal of Manufacturing Science and Engineering*, *137*(1), 014001.

Huda, S., Komarudin, K., Suherman, S., Syazali, M., & Umam, R. (2020). The Effectiveness of Al-Qurun Teaching Model (ATM) Viewed from Gender Differences: The Impact on Mathematical Problem-Solving Ability. *Journal of Physics: Conference Series*, *1467*, 012001.

Huda, S., Rinaldi, A., Suherman, S., Sugiharta, I., Astuti, D. W., Fatimah, O., & Prasetiyo, A. E. (2019). Understanding of Mathematical Concepts in the Linear Equation with Two Variables: Impact of E-Learning and Blended Learning Using Google Classroom. *Al-Jabar: Jurnal Pendidikan Matematika*, *10*(2), 261–270.

Ibrahim, R. (2015). Pendidikan Multikultural: Pengertian, Prinsip, dan Relevansinya dengan Tujuan Pendidikan Islam. *Addin*, *7*(1).

Irwandani, I. (2015). Pengaruh Model Pembelajaran Generatif Terhadap Pemahaman Konsep Fisika Pokok Bahasan Bunyi Peserta Didik MTs Al-Hikmah Bandar Lampung. *Jurnal Ilmiah Pendidikan Fisika Al-Biruni*, *4*(2), 165–177.

Ismanto, A., Rodiawati, H., Septina, N., Agustiana, N., & Rosmawati, N. (2019). Buzz Group Application Methods to Improve The Students' Reasoning Ability and Mathematical Communication Skills of Class VIII Budi Mulya High School Bandar Lampung. *Journal of Physics: Conference Series*, *1155*(1), 012040.

Isnaini, L. K., Indiati, I., & Sugiyanti, S. (2019). Eksperimentasi Model Pembelajaran Kooperatif Tipe Bamboo Dancing Terhadap Hasil Belajar Siswa Ditinjau Dari Kemampuan Komunikasi Matematis. *Senatik*, 362–369.

Jiang, C., Zhang, H., Ren, Y., Han, Z., Chen, K.-C., & Hanzo, L. (2016). Machine learning paradigms for next-generation wireless networks. *IEEE Wireless Communications*, *24*(2), 98–105.

Kamandoko, K., & Suherman, S. (2017). Profil Intuisi Matematis Siswa dalam Pemecahan Masalah Matematika Ditinjau dari Gaya Kognitif Field Independent dan Field Dependent. *Jurnal Penelitian LPPM (Lembaga Penelitian Dan Pengabdian Kepada Masyarakat) IKIP PGRI MADIUN*, *5*(1), 1–8.

Kasna, I. M. F. P., Sudhita, I. W. R., & Rati, N. W. (2015). Penerapan Model Pembelajaran CRH (Course Review Horay) dengan Bantuan Permainan Ular Tangga untuk Meningkatkan Hasil Belajar Siswa pada Mata Pelajaran Matematika Kelas II SD. *MIMBAR PGSD Undiksha*, *3*(1).

Kennedy, C., & Miceli, T. (2010). Corpus-assisted creative writing: Introducing intermediate Italian learners to a corpus as a reference resource. *Language Learning & Technology*, *14*(1), 28–44.

Komariyah, L., & Syam, M. (2016). Pengaruh Model Pembelajaran Inkuiri Terbimbing (Guided Inquiry) dan Motivasi terhadap Hasil Belajar Fisika Siswa. *Saintifika*, *18*(1).

Komarudin, K. (2017). Analisis kesalahan siswa dalam pemecahan masalah matematika pada materi peluang berdasarkan high order thinking dan pemberian scaffolding. *Jurnal Darussalam: Jurnal Pendidikan, Komunikasi Dan Pemikiran Hukum Islam*, *8*(1), 202–217.

Komarudin, K., Rosmawati, N., & Suherman, S. (2020). The Effect of Algebra Finger-Based Brain Gym Method to Improve Student Learning Outcomes. *Eduma: Mathematics Education Learning and Teaching*, *8*(2), 80–88.

Komarudin, K., Sujadi, I., & Kusmayadi, T. A. (2014). Proses Berpikir Kreatif Siswa SMP Dalam Pengajuan Masalah Matematikaditinjau Dari Gaya Kognitif Siswa (Studi Kasus Pada Siswa Kelas Viii-h SMP Negeri 1 Sukoharjo Tahun Pelajaran 2012/2013). *Jurnal Pembelajaran Matematika*, *2*(1).

Kozma, R. B. (2008). Comparative analysis of policies for ICT in education. In *International handbook of information technology in primary and secondary education* (pp. 1083–1096). Springer.

Kristin, F. (2016). Efektivitas Model Pembelajaran Kooperatif Tipe STAD Ditinjau Dari Hasil Belajar IPS Siswa Kelas 4 SD. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, *6*(2), 74–79.

Lapatta, J., Nuryanti, S., & Kendek, Y. (2015). Peningkatan Hasil Belajar Siswa Melalui Penggunaan Model Course Review Horay Pada Mata Pelajaran IPA Kelas IV SD Inpres Sintuwu. *Jurnal Kreatif Online*, *7*(3).

Lince, R. (2016). Creative thinking ability to increase student mathematical of junior high school by applying models numbered heads together. *Journal of Education and Practice*, *7*(6), 206–212.

Maarif, S. (2016). Improving junior high school students' mathematical analogical ability using discovery learning method. *International Journal of Research in Education and Science*, *2*(1), 114–124.

Magier-Łakomy, E., & Rozkwitalska, M. (2013). Country-of-origin effect on manager's competence evaluations. *Journal of Intercultural Management*, *5*(4), 5–21.

Malmia, W., Makatita, S. H., Lisaholit, S., Azwan, A., Magfirah, I., Tinggapi, H., Chairul, M., & Umanailo, B. (2019). Problem-Based Learning as an Effort to Improve Student Learning Outcomes. *Int. J. Sci. Technol. Res*, *8*(9), 1140–1143.

Marcus, C. (2014). Strategies for improving the quality of verbal patient and family education: A review of the literature and creation of the EDUCATE model. *Health Psychology and Behavioral Medicine: An Open Access Journal*, *2*(1), 482–495.

Marhadi, H., Lazim, N., Erlisnawati, E., & Purnama, N. (2018a). Effect of Cooperative Learning Model Type Course Review Horay (CRH) on Elementary Students' Learning Outcome in Social Subject. *JOURNAL OF TEACHING AND LEARNING IN ELEMENTARY EDUCATION (JTLEE)*, *1*(1), 20–29.

Marhadi, H., Lazim, N., Erlisnawati, E., & Purnama, N. (2018b). Effect of cooperative learning model type course review Horay (CRH) on elementary students' learning outcome in social subject. *Journal of Teaching and Learning in Elementary Education (JTLEE)*, *1*(1), 20–29.

Meganingtyas, B. R., Winarni, R., & Murwaningsih, T. (2019). The effect of using course review horay and talking stick learning methods towards social science learning result reviewed from learning interest. *International Journal of Educational Research Review*, *4*(2), 190–197.

Muhandaz, R., Trisnawita, O., & Risnawati, R. (2018). Pengaruh Model Pembelajaran Course Review Horay terhadap Kemampuan Pemahaman Konsep Matematis Berdasarkan Kemandirian Belajar Siswa SMK Pekanbaru. *JURING (Journal for Research in Mathematics Learning)*, *1*(2), 137–146.

Ningsih, Y. L., Misdalina, M., & Marhamah, M. (2017). Peningkatan Hasil Belajar dan Kemandirian Belajar Metode Statistika Melalui Pembelajaran Blended Learning. *Al-Jabar: Jurnal Pendidikan Matematika*, *8*(2), 155–164.

Novitasari, D. (2017a). Upaya Meningkatkan Keaktifan dan Hasil Belajar Siswa Pada Mata Pelajaran Sosiologi Melalui Penerapan Model Cooperative Learning Tipe Bamboo Dancing (Tari Bambu) Kelas XI IPS 3 SMA Negeri Kebakkramat Tahun Pelajaran 2016/2017. *SOSIALITAS; Jurnal Ilmiah Pend. Sos Ant*, *7*(2).

Novitasari, D. (2017b). Upaya Meningkatkan Keaktifan dan Hasil Belajar Siswa Pada Mata Pelajaran Sosiologi Melalui Penerapan Model Cooperative Learning Tipe Bamboo Dancing (Tari Bambu) Kelas XI IPS 3 SMA Negeri Kebakkramat Tahun Pelajaran 2016/2017. *SOSIALITAS; Jurnal Ilmiah Pend. Sos Ant*, *7*(2).

Pantić, N., & Wubbels, T. (2010). Teacher competencies as a basis for teacher education–Views of Serbian teachers and teacher educators. *Teaching and Teacher Education*, *26*(3), 694–703.

Permatasari, B., Nyeneng, I. D. P., & Wahyudi, I. (2018). Pengembangan LKPD Berbasis POE Untuk Pembelajaran Fisika Materi Momentum dan Impuls SMA. *Jurnal Pembelajaran Fisika Universitas Lampung*, *6*(1), 77.

Prameswari, K. K., Wiyasa, I. K. N., Kes, M., Ganing, N. N., & Hum, M. (2017). Pengaruh Model Pembelajaran Course Review Horay (CRH) Berbantuan Media Lingkungan Sekolah Terhadap Kompetensi Pengetahuan IPA Siswa Kelas V SD Gugus Kompyang Sujana Kecamatan Denpasar Utara. *MIMBAR PGSD Undiksha*, *5*(2).

Purwanti, R. D., Pratiwi, D. D., & Rinaldi, A. (2016). Pengaruh Pembelajaran Berbatuan Geogebra terhadap Pemahaman Konsep Matematis ditinjau dari Gaya Kognitif. *Al-Jabar: Jurnal Pendidikan Matematika*, *7*(1), 115–122.

Putra, R. W. Y., & Anggraini, R. (2016). Pengembangan Bahan Ajar Materi Trigonometri Berbantuan Software iMindMap pada Siswa SMA. *Al-Jabar: Jurnal Pendidikan Matematika*, *7*(1), 39–47.

Putri, P. H., Kasdi, A., & Sukartiningsih, W. (2018). The Effectiveness of Course Review Horay Cooperative Learning Model for Elementary School Students. *2nd International Conference on Education Innovation (ICEI 2018)*.

Rahayu, S., & Istiani, A. (2019). Experimentation on Bamboo Dancing Learning Model on Student's Mathematics Learning Outcomes Viewed from Adversity Quotient (AQ). *Journal of Physics: Conference Series*, *1155*(1), 012045.

Rany, W., Suherman, S., Anggoro, B. S., Negara, H. S., Yuliani, M. D., & Utami, T. N. (2020). Understanding Mathematical Concept: The Effect Of Savi Learning Model With Probing-

Prompting Techniques Viewed From Self-Concept. *Journal of Physics: Conference Series*, *1467*, 012060.

Rohartati, S. (2019). Influence of Cooperative Learning Model of Bamboo Dancing to Students Learning Outcomes in Social Sciences in Elementary School. *International Journal of Science and Applied Science: Conference Series*, *3*(1), 163–175.

Rohman, M. G., & Susiolo, P. H. (2017). APLIKASI GAME PETUALANGAN SI KANCIL BERBASIS ANDROID. *Joutica*, *2*(2).

Ruihong, H. (2007). Constructs "the Person and the Nature Harmonious Society" Philosophy Research. *Journal of Changchun University of Science and Technology (Higher Education Edition)*, *2*.

Ruyadi, Y. (2010). Model Pendidikan Karakter Berbasis Kearifan Budaya Lokal: Penelitian terhadap Masyarakat Adat Kampung Benda Kerep, Cirebon, Provinsi Jawa Barat untuk Pengembangan Pendidikan Karakter di Sekolah. *Proceedings of The 4th International Conference on Teacher Education*, 577–595.

San Pedro, M. O. Z., d Baker, R. S., Gowda, S. M., & Heffernan, N. T. (2013). Towards an understanding of affect and knowledge from student interaction with an intelligent tutoring system. *International Conference on Artificial Intelligence in Education*, 41–50.

Septiyana, W., & Pujiastuti, H. (2018). Model Pembelajaran Matematika Knisley untuk Meningkatkan Kemampuan Pemahaman Konseptual Matematis Siswa SMP. *Kalamatika: Jurnal Pendidikan Matematika*, *3*(2), 155–174.

Shodikin, A. (2015). Interaksi Kemampuan Awal Matematis Siswa dan Pembelajaran Dengan Strategi Abduktif-Deduktif Terhadap Peningkatan Kemampuan Penalaran dan Disposisi Matematis Siswa. *INSPIRAMATIKA*, *1*(1).

Siregar, H. L., Syihabuddin, K. A. H., & Komalasari, K. (2020). Application of Project Based Learning (PjBL) inIslamic Religious Education Courses. *Journal of Critical Reviews*, *7*(1), 21–28.

Sudarsana, I. K. (2016). Peningkatan Mutu Pendidikan Luar Sekolah Dalam Upayapembangunan Sumber Daya Manusia. *Jurnal Penjaminan Mutu*, *1*(1), 1–14.

Suherman, S., Komarudin, K., Rosyid, A., Aryanita, S., Asriyanto, D., Aradika Putra, T., & Anggoro, T. (2018). Improving Trigonometry Concept Through STEM (Science, Technology, Engineering, and Mathematics) Learning. *International Conference On Multidisciplinary Academic (ICMA)*.

Suherman, S., Prananda, M. R., Proboningrum, D. I., Pratama, E. R., Laksono, P., & Amiruddin, A. (2020). Improving Higher Order Thinking Skills (HOTS) with Project Based Learning (PjBL) Model Assisted by Geogebra. *Journal of Physics: Conference Series*, *1467*, 012027.

Sukmawan, S., & Nurmansyah, M. A. (2014). Etika Lingkungan dalam Folklor Masyarakat Desa Tengger. *LITERASI: Indonesian Journal of Humanities*, *2*(1), 88–95.

Sumarni, W. (2015). The strengths and weaknesses of the implementation of project based learning: A review. *International Journal of Science and Research*, *4*(3), 478–484.

Suryani, A., Maulana, M., & Julia, J. (2016). Pengaruh pendekatan course review horay (CRH) terhadap pemahaman matematis dan motivasi belajar matematika siswa sekolah dasar pada materi penjumlahan dan pengurangan bilangan bulat. *Jurnal Pena Ilmiah*, *1*(1), 81–90.

Sutarna, N., & Kusdiana, D. (2018). Pengaruh Model Pembelajaran Bamboo Dancing (Tari Bambu) Terhadap Hasil Belajar IPS Siswa SDN 1 Cipedes. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, *2*(2), 251–260.

Syazali, M., Putra, F., Rinaldi, A., Utami, L., Widayanti, W., Umam, R., & Jermsittiparsert, K. (2019). Partial correlation analysis using multiple linear regression: Impact on business environment of digital marketing interest in the era of industrial revolution 4.0. *Management Science Letters*, *9*(11), 1875–1886.

Tamrin, H. A. Z., Netriwati, N., & Suherman, S. (2018). Model Fraction Circle untuk Meningkatkan Pemahaman Konsep Peserta Didik dalam Penjumlahan Pecahan. *Prosiding Seminar Nasional Matematika Dan Pendidikan Matematika*, *1*, 487–493.

Triyana, E., Pricilia, A., Maulana, R. H., & Yulianto, M. N. (2019). How Course Review Horay (CRH) Assisted by The Media Prezi Can Improve Cognitive Abilities of Students. *Journal of Physics: Conference Series*, *1155*, 012038.

Vickers, R., Field, J., & Melakoski, C. (2015). Media culture 2020: Collaborative teaching and blended learning using social media and cloud-based technologies. *Contemporary Educational Technology*, *6*(1), 62–73.

Vidákovich, T. (2014). Students' task response times and task solving efficiency on online foreign language vocabulary tests. *PÉK*, 127.

Wahyudi, M. D., & Tripuspitaningrum, G. (2018). Improving Students Learning Outcome Using Group Investigation Model Combined with Think Pair Share and Course Review Horay. *1st International Conference on Creativity, Innovation and Technology in Education (IC-CITE 2018)*.

Wardani, N., Muntari, M., Hadisaputra, S., & Loka, I. N. (2019). Studi Perbandingan Hasil Belajar Kimia antara Model Pembelajaran Team Quiz dengan Model Pembelajaran Course Review Horay Pada Siswa Kelas XI MIA SMAN 1 Lingsar. *Chemistry Education Practice*, *1*(2), 14–19.

Yasin, M., Huda, S., Komarudin, S., Suherman, S., Septiana, R., & Palupi, E. K. (2020). Mathematical Critical Thinking Ability: The Effect of Scramble Learning Model assisted by Prezi in Islamic School. *Journal of Physics: Conference Series*, *1467*, 012007.

Yuanpei, Y. U. (2005). The Building of a Harmonious Society and the Construction of a Comfortably-off Society. *Journal of Shanghai Teachers University*, *2*.