

META-ANALYSIS OF THE EFFECT OF CROSSWORD PUZZLE MEDIA TO LEARNING AND STUDENTS' SOCIAL SCIENCE LEARNING OUTCOME IN ELEMENTARY SCHOOL

Fidrayani^{1*}, Rusni Deden Purdiasih²

^{1,2}Universitas Islam Negeri Syarif Hidayatullah Jakarta, Indonesia

*Correspondence adress: fidrayani7276@uinjkt.ac.id

Abstract

This study aims to analyze the effect of crossword puzzle learning media on learning and social science learning outcomes of elementary school students. The research method practiced is a meta-analysis by describing the results of the analysis of various studies, in various schools in Indonesia, which have been published nationally. The sample is ten articles that have been published in accredited national journals from 2014 to 2019. The writing instrument is in the form of a coding sheet containing data and information on research findings in each article. Based on the analysis, the average size effect of crossword puzzles on learning and overall Social Science learning outcomes is 1.49 which is included in the high category of effectiveness. The average value of crossword puzzles effect on social science learning outcomes based on the dependent variable is 2.25 which is also included in the high category. This fact denotes that crossword puzzles are effective in teaching Social Sciences on any material, and have an effect on decent student learning outcomes.

Keywords: Crosswords, Elementary School, Learning Outcomes, Social Sciences

Abstrak

Penelitian ini bertujuan untuk menganalisis pengaruh media pembelajaran teka-teki silang terhadap pembelajaran dan hasil belajar Ilmu Pengetahuan Sosial peserta didik di sekolah dasar. Metode penelitian yang digunakan adalah meta-analisis dengan mendeskripsikan hasil analisis terhadap berbagai penelitian-penelitian, di berbagai sekolah di Indonesia, yang telah dipublikasikan secara nasional. Sampel yang digunakan adalah sepuluh artikel yang telah terbit di jurnal nasional terakreditasi dengan rentang waktu 2014-2019. Instrumen penulisan berupa lembar pengkodean yang memuat data dan informasi temuan penelitian di setiap artikel. Berdasarkan analisis yang dilakukan bahwa nilai rata-rata besar pengaruh teka-teki silang terhadap pembelajaran dan hasil belajar Ilmu Pengetahuan Sosial secara keseluruhan sebesar 1,49 yang termasuk dalam kategori tinggi efektivitasnya. Nilai rata-rata dari besar pengaruh teka-teki silang terhadap hasil belajar Ilmu Pengetahuan Sosial berdasarkan variabel terikatnya sebesar 2,25 yang juga termasuk dalam kategori tinggi. Fakta ini menunjukkan bahwa media teka-teki silang sangat efektif digunakan dalam pembelajaran Ilmu Pengetahuan Sosial pada materi apapun, dan berpengaruh terhadap hasil belajar peserta didik yang baik.

Kata Kunci: Media Teka-teki Silang, Sekolah Dasar, Hasil Belajar, Ilmu Pengetahuan Sosial

INTRODUCTION

In learning, it is common that not all students achieve optimal learning outcomes, some students experience a decrease in their learning outcomes. According to Juniarti et al., (2011) the decline in learning outcomes was caused by several factors, both internal factors such as attitude, time, neglecting tasks, laziness, too relaxed, and how students study at home, and external factors. including the environment of parents and families, the community environment, and the school environment, especially the prominent role of educators or teachers.

Educators are one of the main elements that affect learning outcomes in the school peripheral, therefore a teacher must be able to make the teaching and learning process transform and progress towards improvement by choosing effective and efficient learning media to create an interesting and amusing learning process that can be accepted by students. Teachers are demanded to exert learning media based on students' needs and educational growth (Wandini et al., 2021). The appropriate learning media in the teaching and learning process has a great influence on achieving learning objectives.

One of the appealing learning media employed in the learning process is a crossword puzzle. Crossword puzzles are one of the developments of active learning strategies (Ramadani, 2019). It is a puzzle filled with letters that form words in empty boxes and the words are based on the clues provided in the form of complete sentences, phrases, or words. Crossword puzzles are educational games that can nurture patience and sharpen the intelligent of students. Another reason why crossword puzzles should be practiced to improve student learning outcomes is that it is "reviewing" or repeating hence when using crosswords, students can remember the material and knowledge they have acquired and answer them in the box.. Khalilullah dalam Edriati et al., (2017) stated that crossword puzzles can make memories fresh because when using them, the brain's nerves are awakened, and returns to work optimally.

Students experience obstacles and difficulties in receiving lessons, especially in Social Sciences (IPS). Evidence from Nurani et al. (2015) namely out of 476 students, there are 86 students who have distress learning social studies. Other evidence is also written in Rusmawan (2012), 163 students have an impediment learning social studies and their learning outcomes are low (2017) found that out of 17 students at fifth-grade SD Negeri (Elementary School) II Pagutan, 9 children had low social studies learning outcomes Azhar et al., (2017), out of 29 fourth-grade students at SDN Terpencil Lambani Tada, the average score of students' social studies learning outcomes has not reached the standard. Moreover Priyoga & Halidjah (2015) comprehend that there are still many fifth-grade students of State Elementary Schools in Sekayam District attain below standard learning outcomes.

The adversities that have been stated are because teachers in delivering lesson still utilize conventional learning such as lectures without involving the interaction among students, inadequate facilities or infrastructure, students do not read about the material being studied, and interest and motivation to learn from the students themselves. In the end, those difficulties have an impact on the low social studies learning outputs.

However, from the various findings related to learning hardships and low learning outcomes above, there is a proven effective media in influencing student learning outcomes based on the findings of studies that have been conducted in various places. However, there has not been a single article describing various research findings regarding the effect of puzzle media on students' social studies learning outcomes. Therefore, this paper aims to comprehensively review the studies on the puzzle media effect on social studies learning and learning outcomes of students in various elementary schools in Indonesia through the meta-analysis method, which is a form of quantitative research to gain as much information as possible from the data acquired, to approach comprehensiveness by using statistical methods from several research results (Chandra, 2011).

RESEARCH METHOD

The method applied in this study is the meta-analysis method. It is a collection of methods to combine several results from different studies but have the same theory or hypothesis (Kadir, 2004). In this method, an analysis with statistical procedures was carried out to verify the results of the research hypothesis (Tohari & Otok, 2014). Accumulate data from related literacies, books, and journals. The population of this research is journals and undergraduate theses about the implementation of crossword puzzle learning media that have been published nationally. The samples were 10 articles from general researchers or students from 2014-2019 and experimental research articles with a similar issue.

This research procedure adjusts the steps in conducting the meta-analysis suggested by David B. Wilson dan George Kelley dalam (Anggreni et al., 2019), which is to determine the research question first, then determine the research results period that is used as data sources, searching for research reports related to the issue to be studied, reading their titles, abstracts, research-focused, research problems and methodologies. Assigning categories to each research, comparing research results according to categories, and analyzing conclusions found.

This study employs an observation sheet instrument in the form of coding data. The data in each article is calculated and analyzed to measure the effect because the meta-analysis does not only focus on the conclusions obtained in various studies, but also focuses on the data, such as calculating the effect size, variables, and sample size (Daryanto et al., 2016). The data analysis technique used is descriptive analysis, describing the results of the analysis of studies that have been published nationally and have been enumerated through prerequisite tests to attain the effect size. This effect size is a combination of the difference in effects between the experimental group and the control group that has been presented using certain statistics (Ansor, 2017).

RESULTS AND DISCUSSION

Based on data analysis, the effect size data obtained from 10 articles can be classified into two categories based on all categories and dependent variables as shown in the following table:

Table 1. The Effect Size Data Based on Category

No.	Author, Year	Code Artikel	Grade	Effect Size	Category
1.	Hana Aditya Candra, Endro Wahyuno, 2016	A10	IV	5,84	High
2.	Zulkarnain, 2018	A2	V	1,64	High
3.	Yuniarti, Marzuki, Suhardi Marli, 2016	A4	V	1,56	High
4.	Pt. K Laksmi, Wyn. Sujana, dan B. Gd. Suryaabadi, 2014	A3	V	1,55	High
5.	Mardhatillah, Henra Saputra Tanjung, 2018	A9	V	1,55	High
6.	Sri Kurniawati Putri, 2019	A1	V	0,84	Middle
7.	Yuaida Nur Rohma, 2018	A8	V	0,62	Middle
8.	Muhafidin, 2018	A5	V	0,57	Middle
9.	Falupi Lailil Ramadhani, Mulyani, 2017	A6	IV	0,47	Low
10.	Juwita Rahmi, 2018	A7	V	0,27	Low
Average				1,49	High

The table above shows that 5 journals are in the high category, 3 journals are in the middle category, and 2 journals are in a low category. Overall, the average effect size of the crossword

puzzle implementation on social science learning outcomes is 1.49 and is included in the high category.

The high size effect attests that the crossword puzzle exertion on Social Science learning outcomes has a major effect on the learning process. This can be seen from the experimental class score using crossword puzzles is superior to the control class using conventional learning. Indirectly, the crossword puzzle learning media has a positive impact on learning compared to conventional learning methods. It means that the creativity and innovation of an educator are needed to compose an interesting, fun, and memorable to exacerbate learning outcomes.

Based on the analysis, after conducting a study of the dependent variable from the 10 articles studied, the researchers generated the following data:

Table 2. Effect Size Based on Dependent Variables

No.	Dependent Variables	N Article	Effect Size Average
1.	Social Science Learning Outcomes	7	0,98
2.	The Ability to Describe Patriot Figures During Dutch and Japan Colonialism	1	0,62
3.	Social Ability on Ethnic and Culture Diversity In Indonesia	1	1,55
4.	Social Science Learning Process	1	5,84
Average			2,25

The effect size of the crossword puzzle based on the dependent variable from the highest to the lowest order, Social Science Learning is in the highest position. In the next order, social skills on the subject of Ethnic and Culture Diversity in Indonesia; Social Studies learning outcomes are in the third position; and the ability to describe the patriot figures during the Dutch and Japanese colonial times is in the fourth position. Overall, the average effect size is 2.25. It means the effect degree of using crossword puzzles involving the dependent variables is in the high category.

The facts above verify that crossword puzzles can be applied to various social studies subjects including geography, history, sociology, and economics (Mbudja et al., 2019). In fact, in another study, this puzzle media was effectively used on other subjects Amalia & Hidayat (2018) affirms that there is an ability enhancement to read and write Arabic vocabulary through crossword puzzles. Moreover, Research by Permana (2018) specified that crossword puzzles effect science learning activities and outcomes.

Nevertheless, according to the table above, puzzle media has the most effect on Social Science learning. This occurs because all students feel pleased and engaged in game-based learning and crossword puzzle media. Meanwhile, on the learning outcomes variable, there is a significant distinction in the size effect of the crossword puzzle media on the Social Sciences learning outcomes. This difference is caused by several factors, namely the levels of students' cognitive abilities, and students' environment. However, all studies stated that there was a significant effect on student learning outcomes.

This puzzle media makes it easy for students to apprehend the material being studied. This media, from the 10 articles above, show the student's engagement in the learning process. Under its definition, crossword puzzles are one of the establishments of an active learning strategy (Ramadani, 2019). It is basically designed to make students feel amused and actively participate in learning. This is in line with Kharisma & Arvianto (2019), findings, that educational games are an amusing activity and can be used as a way or tool in educating.

A Crossword puzzle is practiced with a puzzle game filled with letters that form words in empty squares and the words are based on the clues provided in complete sentences, phrases, or words about the social studies materials that are taught. It is an educational game that can train patience and sharpen the minds of students. The exact thing was stated by Khalilullah dalam Edriati et al., (2017) that it can make freshen memories because when using them the brain nerves are awakened, and returns to work optimally. Therefore, it can rectify student learning outcomes because this media is reviewing or repeating the material learned, encouraging students to remember the material and knowledge they have acquired and answer in available squares.

This student activity can arise because students feel excited and cheerful in the educational game. The existence of educational games in this crossword puzzle media provides entertainment for every student. The impact is that students enjoy following the learning process. In the end, students favorably participated in learning activities.

In addition, in educational games on crossword puzzle media, students also receive rewards such as appreciation, praise, and even prizes when they completed the game. When they receive those rewards, they feel happier and more enthusiastic about participating in learning.

This circumstance makes students more confident with their competence. The feeling of pleasure and happiness above is indeed necessary for the learning atmosphere of elementary school students. This is aligned with Bujuri (2018), students in elementary age strongly require a sense of pleasure and happiness in the learning process to actualize their desires and abilities. These senses are part of the essentials that must be met. If not, students feel unhappy, uncomfortable, and passively partake in learning which has an impact on mastery of the material being taught.

Likewise, appreciation, praise, and even gifts received by students are part of the fundamental needs that must be met in the student learning process. Appreciation and praise are part of the necessities for every human being that must be met. Every individual entails the recognition of others for their abilities and values, including elementary-age children. Elementary-age children love to be praised for everything they do. Children will feel pleased and proud when they received such rewards from others (parents, teachers, friends, and so on). Children adore being recognized amid a crowd. A child who has sufficient self-esteem will feel more confident, viable, progressive, and productive. For instance, when in the classroom, if one of the children is appreciated and praised with kind words such as great, smart, and diligent in front of his friends, the child will be more confident and proud of himself.

Thus, this study asserts that in the learning process, it is pivotal to establish a pleasant learning atmosphere and provide opportunities for students to actualize their abilities. Therefore, various active, effective, and delightful learning innovations must be created by teachers through various strategies, methods, and learning media. With learning media, it is expected that students' knowledge and understanding can develop and foster interest and deliver motivation for students in their learning activities (Sejati et al., 2021). As the findings in this study; crossword puzzles can generate a fun learning atmosphere and are proven to be effective in improving student learning outcomes in elementary schools.

CONCLUSION

To conclude, this research proves that crossword puzzles can be applied to any material in Social Science learning and are implemented in different types of elementary schools. The crossword puzzle also has a significant effect on the social science learning outcomes of students in various elementary schools in Indonesia. This occurs because it can incite pleasant learning conditions therefore, students feel delighted and engaged in learning. As a result, students can apprehend the material well and directly affect student learning outcomes. Crossword puzzle

learning media can be exercised as an alternative to exacerbate student learning outcomes in elementary school.

However, this study has a limited sample of journal articles studied. It also lacked depth in term of what factors influenced the effect size of crossword puzzles on learning outcomes from each school studied. Therefore, the researcher considers it important that this research must be refined in subsequent studies.

REFERENCES

- Amalia & Hidayat, N. (2018). Penggunaan media teka-teki silang (crossword puzzle) untuk meningkatkan kemampuan membaca dan menulis kosakata bahasa Arab peserta didik di MI Ma'arif Giriloyo 1 Imogiri Bantul. *Al-Bidayah: Jurnal Pendidikan Dasar Islam*, 10(1). <https://doi.org/10.14421/al-bidayah.v10i1.133>
- Ansor, S. (2017). Studi Meta Analisis Strategi Dan Pemanfaatan Jurnal Elektronik (E-Journals) Untuk Mahasiswa Lulusan Universitas Negeri Malang Dalam Upaya Publikasi Ilmiah Bereputasi Internasional. *Record And Library Journal*, 3(5).
- Azhar, Kapile, C., & Imran. (2017). Meningkatkan Hasil Belajar Siswa Dalam Pembelajaran IPS Dengan Menggunakan Media Gambar Di Kelas IV SDN Terpencil Lambani Tada. *Jurnal Kreatif Tadulako Online*, 3(3).
- Bujuri, A. D. (2018). Analisis Kebutuhan Dasar dan Implikasinya dalam Penyelenggaraan Pendidikan. *JIP (Jurnal Ilmiah PGMI)*, 4(1), 82-97. <https://doi.org/10.19109/jip.v4i1.2269>
- Bujuri, A. D., Baharudin, B., Fiteriani, I., Istiyani, I., & Baiti, M. (2022). Improving Student's Learning Liveliness of Natural Science by Giving Question and Getting Answer Strategy At Islamic Elementary School. *JIP (Jurnal Ilmiah PGMI)*, 7(1), 17-27. <https://doi.org/https://doi.org/10.19109/jip.v7i1.7990>
- Candra, Hana Aditiya, & Endro Wahyuno. (2016). Permainan Teka-Teki Silang Bergambar Dalam Pembelajaran Ilmu Pengetahuan Sosial Anak Tunagrahita Ringan. *Jurnal Ortopedagogia*, 2(2009).
- Chandra, E. (2011). Efektivitas Media Pembelajaran dalam Pembelajaran Biologi (Meta Analisis Terhadap Penelitian Eksperimen dalam Pembelajaran Biologi. *Jurnal Holistik* 12(1).
- Daryanto, Eka, Situmorang, B., Lubis, W., Marpaung, R., & Lubis, S. (2016). Studi Meta Analisis Hubungan Antara Efektivitas Pengawasan Dengan Kinerja Guru. *Universitas Negeri Medan*.
- Edriati, Sofia, Handayani, S., & Sari, N. P. (2017). Penggunaan Teka-Teki Silang Sebagai Sebagai Strategi Pengulangan dalam Meningkatkan Pemahaman Konsep Matematika Siswa SMA Kelas XI IPS. *Jurnal Pelangi* 9(2).
- Juniarti, Nia, Bahari, Y., & Riva'ie, W. (2015). Faktor Penyebab Menurunnya Hasil Belajar Siswa Pada Pembelajaran Sosiologi di SMA Nia. *Khatulistiwa: Jurnal Pendidikan dan Pembelajaran*, 4(2).
- Kharisma, G. I., & Arvianto, F. (2019). Pengembangan aplikasi android berbentuk education games berbasis budaya lokal untuk keterampilan membaca permulaan bagi siswa kelas 1 SD/MI. *Premiere Educandum: Jurnal Pendidikan Dasar dan Pembelajaran*, 9(2). <http://doi.org/10.25273/pe.v9i2.5234>
- Laksmi, P. K., Sujana, I. W., & abadi, I. B. G. S. (2014). Pengaruh Model Pembelajaran Berbasis Otak (Brain Based Learning) Berbantuan Media Teka-Teki Silang Terhadap Hasil Belajar IPS Siswa Kelas V SD Gugus I Gusti Ngurah Jelantik. *Jurnal Mimbar PGSD Universitas Pendidikan Ganesha*, 2(1).

- Mardhatillah & Tanjung, H. S. (2018). Pengaruh Penerapan Metode Crossword Puzzle Terhadap Keterampilan Sosial Pada Materi Keragaman Suku Bangsa Dan Budaya Di Indonesia Siswa Kelas V SD Negeri Suak Pandan. *Jurnal Bina Gogik*, 5(2).
- Mbudja, A. P., Walujo, D. A., & Sugito. (2019). Efektivitas hasil belajar IPS melalui penggunaan model pembelajaran snowball throwing pada siswa kelas IV SDN Ende 5 dan SDI Ende 10. *Premiere Educandum: Jurnal Pendidikan Dasar dan Pembelajaran*, 9(2). <http://doi.org/10.25273/pe.v9i2.4430>
- Muhafidin. (2018). Pengaruh Strategi Pembelajaran Crossword Puzzle Terhadap Hasil Belajar Siswa Pada Mata Pelajaran Ilmu Pengetahuan Sosial Siswa Kelas V MIN 6 Bandar Lampung. *Skripsi, UIN Raden Intan Lampung*.
- Nurani, Candra, G., Meter, G. & Negara, G. A. O. (2015). Analisis Kesulitan-Kesulitan Belajar Matematika Siswa Kelas V Dalam Implementasi Kurikulum 2013 Di SD Piloting Se-Kabupaten Gianyar Tahun Pelajaran 2014/2015. *Jurnal Mimbar PGSD Universitas Pendidikan Ganesha*, 2(1).
- Permana, E. P. (2018). Efektifitas Model Creative Problem Solving Dengan Media Teka-Teki Silang Daun Terhadap Aktivitas dan Hasil Belajar IPA Sekolah Dasar. *Jurnal Riset Pendidikan Dasar*, 1(2). <https://doi.org/10.26618/jrpd.v1i2.1441>
- Priyoga, Catur, S., Suryani, & Halidjah, S. (2015). Analisis Kesulitan Belajar Siswa Dalam Pembelajaran Ilmu Pengetahuan Sosial di Kelas V. *Jurnal Pendidikan Dan Pembelajaran*, 4(3).
- Putri, S. K. (2019). Pengaruh Strategi Pembelajaran Crossword Puzzle (Teka Teki Silang) Terhadap Hasil Belajar Ilmu Pengetahuan Sosial (IPS) Murid Kelas V SDN Bontomaero II Kabupaten Gowa. *Skripsi, Universitas Muhammadiyah Surakarta*.
- Rahman, H. (2017). Peningkatan Hasil Belajar IPS Melalui Strategi Pembelajaran Bermain Bala-Bala Pada Siswa Kelas V SD Negeri II Pagutan Tahun Ajaran 2015/2016. *Skripsi, Universitas Muhammadiyah Surakarta*.
- Rahmi, J. (2018). Pengaruh Strategi Pakem (Pembelajaran Aktif Kreatif Efektif Dan Menyenangkan) Berbasis Permainan Teka-Teki Silang Terhadap Hasil Belajar Siswa Melalui Mata Pelajaran IPS di Mis Nurul Fadhillah Bandar Setia Tahun Ajaran 2017/2018. *Skripsi, UIN Sumatera Utara*.
- Ramadani, A. (2019). Pengaruh Penerapan Metode Pembelajaran Crossword Puzzle Berbasis Aplikasi Puzzle Maker Terhadap Hasil Belajar Biologi Konsep Kingdom Animalia Pada Siswa Kelas X SMA Negeri 5 Maros. *Jurnal Binomial*, 2(2).
- Ramadhani, Lailil, F., & Mulyani. (2017). Pengaruh Penggunaan Media Teka-Teki Silang Terhadap Hasil Belajar IPS Materi Koperasi Pada Siswa Kelas IV SDN Tenggulungan Sidoarjo. *Jurnal Penelitian Pendidikan Guru Sekolah Dasar*, 5(3).
- Rohma, Y. N. (2018). Artikel Pengaruh Strategi Crossword Puzzle Didukung Media Flashcard Terhadap Kemampuan Mendeskripsikan Perjuangan Tokoh Pejuang Pada Masa Penjajahan Belanda Dan Jepang Siswa Kelas V SDN Sumberagung 3 Tahun Pelajaran 2017/2018. *Artikel Skripsi, Universitas Nusantara PGRI Kediri*.
- Rusmawan. (2013). Faktor Yang Memengaruhi Kesulitan Belajar IPS Siswa Sekolah Dasar. *Jurnal Cakrawala Pendidikan*, 32(2).
- Sejati, A. K., Yuniawatika, & Sutansi. (2021). Need analysis of solid geometry material learning media with character strengthening for 5th grade elementary school. *Premiere Educandum: Jurnal Pendidikan Dasar dan Pembelajaran*, 11(2). <http://doi.org/10.25273/pe.v11i2.10040>
- Supratiknya, A. (2012). *Penilaian Hasil Belajar Dengan Teknik Nontes*. Universitas Sanata Dharma.

- Surahman, E., & Mukminan. (2017). Peran Guru IPS Sebagai Pendidik Dan Pengajar Dalam Meningkatkan Sikap Sosial dan Tanggung Jawab Sosial Siswa SMP. *Harmoni Sosoal: Jurnal Pendidikan IPS*, 4(1).
- Wandini, R. R., Damanik, E. S. D., Daulay, S. H., & Iskandar, W. (2021). The Effect Of Snake And Ladder Game on Student Learning Outcomes In Studying of Islamic History “Fathu Mecca” at the Elementary School Muhammadiyah, North Sumatera, Indonesia. *Al-Bidayah: Jurnal Pendidikan Dasar Islam*, 13(1). <https://doi.org/10.14421/al-bidayah.v13i1.637>
- Yuniarti, Marzuki, & Marli, S. (2016). Pengaruh Teka-Teki Silang Terhadap Hasil Belajar Ilmu Pengetahuan Sosial Kelas V Sekolah Dasar. *Khatulistiwa: Jurnal Pendidikan dan Pembelajaran*, 5(11).