Development Of Crossword Puzzles In The Learning Of Explanatory Text Summarization

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Abstract

This research is based on Indonesian language learning that has not been effective yet, so the result of learned is not optimal yet, to overcome this problem, the researcher developed crossword puzzle game. This development research aims to produce crossword puzzle products as well as know the feasibility and effectiveness of the product. This research used Research and Developement method developed by Borg and Gall. The subjects of this study are the students of class V which amounted to 34 students. Data analysis techniques used descriptive percentage and n-gain test. The results showed that the media of crossword puzzles is very feasible to use with the percentage of assessment 89.58%, material expert judgments of 88, 63%. The result of N-gain analysis showed that the value obtained is 0.5226 in the medium category and the response is very good. Based on the result of the research, the crossword puzzle game to summarize the developed explanation text is declared eligible and effective in improving the writing skill of the students' explanatory text.

Keywords; Indonesian language: cross-game design, explanatory text.

1. Introduction

Education is necessary to create the generations with good competitiveness and who think globally. Under Permendiknas Nomor 22 tahun 2006 (Regulation of Minister of Education:22/2006) on Standard of contents for Primary School/Islamic Primary School, it is stated that Language plays central role in intellectual, social, and emotional development of the students and constitutes supporting point to success in learning all subjects. Language learning is expected to help the students identify themselves, their culture, the others' culture, express their ideas and feeling, participate in the activities of the people speaking the relevant language, and find as well as use analytic and imaginative potentials inside themselves.

As stated by National Board for Educational Standards (BSNP, 2006:119) standard of content of Indonesian are the followings: "Indonesian language learning leads to the improvement of the students' communication skill in good and proper Indonesian language both orally and in writing, as well as building appreciation to literary works of Indonesian litterateurs." Indonesian language learning has goals, such as: in order that the students can enjoy and use the literary works to develop the personalities, to widen their life insights as well as to improve their language comprehension and skill. Basically, the Indonesian language learning leads to improvement in the students' communication skill of good and proper Indonesian both orally and written (Susanto,2016:245).

Based on the pre-research activities through interviews in Sekolah Dasar Negeri Mangkang Kulon 02 I found some problems such as: the students were less active and enthusiastic in the learning, especially Indonesian learning, because the students tended to be reluctant and bored when being asked merely to read books, while in teaching, the teacher applied several approaches and methods, they, however, did not vary. That problem has impacts on Indonesian learning outcomes, strengthened by the interviews with grade V classroom teacher and students portfolios showing that Indonesian average grade point was poor, i.e. 51.21 and many did not meet the determined mastery learning criteria (KKM), i.e. 65. This was shown by the data of the scores gotten by 34 grade V students. 28 got below-KKM scores and only 6 got above-KKM scores. The lowest score was 20 and the highest score was 80. This shows that collectively only 17.64% met KKM, while 82.35% others did not

The students need the teaching tool that can stimulate their interests in reading and learning the lessons of Indonesian language, while the learning can be enjoyable when they can interact one another. Varying teaching tools can be used to create the fun learning. With the tool, the students can learn by playing. Games constitute the context where the players interact one another by following certain rules to reach certain goals (Sadiman, 2014:75-76).

Another supporting study i.e. the international one conducted by Michael L. Littman, Greg A. Keim, and Noam Shazeer publishen in Journal of Artificial Intelligence titled "A probabilistic approach solving crossword puzzles" shows that crossword puzzles solutions present a unique inteligential challenge, wide knowledge competition, and speed. These resources allow me to handle a language-related game and another important thing in an application although developing also needs better comprehension on theme and puzzle tricks.

A nother supporting research was the one conducted by Moh. Sholahuddin Ghozali and Ahmad Qosyim published in E-Jurnal Pensa Volume 05 Nomor 01 Tahun 2017 (E-Jurnal Pensa Vol. 05:01/2017) titled "Efektifitas permainan Teka Teki Silang Tiga Dimensi (TTS3D) Sebagai Media Pembelajaran Pada Materi Interaksi Makhluk Hidup" (Effectiveness of 3D Crossword Puzzles as Teaching Tool in Lesson of Interaction between Creatures). The study aimed to describe the effectiveness of 3D crossword puzzles as teaching tool in lesson of interaction between creatures. The study applied Research and Development (R & D) designs restricted to the seventh phase. The study shows that the game was stated as effective. In the study, it was shown that crossword puzzles could improve the students Indonesian language learning outcomes of grade V students while the researchers developed the crossword puzzle to ease the students to learn to summarize the explanatory text. This is supported by the study conducted by Novita Andyani, Kundharu Saddhono, Yant Mujyanto published in *BASASTRA Jurnal Penelitian Bahasa, Sastra Indonesia dan Pengajarannya* Vol. 4 (2:2016) titled *"Peningkatan Kemampuan Menulis Teks Eksplanasi Dengan Menggunakan Media Audiovisual Pada Siswa Sekolah Menengah Pertama"* (Improvement of Explanatory Writing Skill Using Audiovisual Tool on Secondary-School Students) which stated that the study showed the improvement of motivation and explanatory writing skill of the students. The students' average explanatory writing score was 74.61 at success rate 69.23%. In the final period of explanatory text, their average score was 84.42 at success rate 88.46%.

Based on the description above and based on the supporting statement of the experts and based on the supporting preceding studies, then I studied the problem and conducted

(Research and Development) titled *"Pengembangan Media Permainan Teka Teki Silang Untuk Meringkas Teks Eksplanasi Siswa Kelas V SDN Mangkang Kulon 02 Semarang"* (Development of Crossword Puzzles to Summarize Explanatory Writings for Grade V Students of SDN Mangkang Kulon 02 Semarang). The study aims to develop the crossword puzzles, to find its feasibility, and the effectiveness of monopoly game with crossword puzzles to summarize explanatory writings for grade V students.

2. Research Method

This study used Research and Development (R&D). Sugiyono (2013:407) states that Research and Development is the research method that is used to create the particular product, and to test the effectiveness of the product. In the research on and development of the learning comics, I used only 8 steps of Sugiyono's development model due to time and financial constraints to conduct the mass production. The subject of the research is 34 grade V students of SDN Mangkang Kulon 02 Semarang. The data were collected from the classroom teacher of and the students at grade V of SDN Mangkang Kulon 02 Semarang as well as the language and media analysts. The research was conducted from April to May. The data were collected through questionnaire, documentation, interviews, and testing. The data collected for this study comprises media analysis by the language and media analysts, the questionnaire on the teacher's and the students' responses, as well as the students learning outcomes of explanatory writing. The data of the assessments made by the media and language analysts, as well as the teacher's and the students' responses using the descriptive assessment, the percentage was found using likert scale. The students explanatory writing learning outcomes were found from pretest and posttest that subsequently was calculated using N-gain formula.

3. Results and Discussion

The study created a product, i.e. crossword puzzles to summarize the explanatory writings for grade V students. The developed crossword puzzles to summarize the explanatory writings was based on the questionnaire on needs distributed to the teacher and the students of grade V. As stated by Amin quoted by Cahyo (2011.61-62), the crossword puzzle is one of the

most favorite brain-training games. Not only the adults find the game useful, the kids do, too, particularly to train their left-brain capability. In the game, the players must fill the empty spaces (white squares) with letters, forming words or phrases, by solving clues, which lead to the answers. The answer words and phrases are usually placed in the grid from left to right and from top to bottom.

The study is strengthened by another study conducted M.Husni Abdullah published in JPGSD Vol.05:No.03/2017 titled *"Penggunaan Media Teka Teki Silang Untuk Meningkatkan Hasil Belajar Siswa Pada Mata Pelajaran IPS Kelas V SDN Songgokerto 01 Batu"* (The Usage of Crossword Puzzles to Improve the Social Science Learning Outcomes of Grade V Students of SDN Songgokerto 01 Batu). The study aimed to find the usage of the crossword puzzles to improve Arabic learning outcomes. While, as the samples of the study, he only took 18 grade II students of experimental classroom using simple random sampling. The data for the study were collected through testing, observation, interviews and dokumentation. The data then were analyzed using t-test. Thus, the experiment that he made shows the following facts: First, the average learning outcome for introduction to number 1-10 lesson of Arabic subject of grade II students of Madrasah Ibtidaiyah Nurul Iman Pengabuan before applying crossword puzzles was 56.11 (pre-test), it improved after applying crossword puzzles method into 79.44 (post-test). Second, pretest scores were significantly different from the posttest one, which means that Hypothesis Null was rejected, i.e. t_t 5% $< t_o > t_t$ or 2.11$<$ 11.73$>$ 2.90. Based on the finding in the study, he drew a conclusion that the Arabic learning outcomes before and after using crossword puzzles were different.

Another supporting study was the one conducted by oleh Mohammad Andi Wasgito published in *Jurnal Pendidikan Seni Rupa Volume 2 Nomor 3 Tahun 2014* (Journal of Fine Arts Vol.2:No.3/2014) titled *"Pengembangan Media Permainan Edukatif Teka-Teki Silang (TTS) Dalam Proses Pembelajaran Siswa Kelas VII SMP Negeri 2 Kalianget"* [Development of Crossword (TTS) as Educative Game in Learning Process Completed by Grade VII Students of SMP Negeri 2 Kalianget]. The study created (1) Development concept of crossword puzzles in arts and culture learning of grade VII students of SMP Negeri 2 Kalianget containing the things regarding the applied fine arts such as

definition, functions, the types of applied fine arts, and the examples of applied fine artworks packaged into a crossword book. The media was also completed with the pictures and the puzzles adjusted to the basic competencies to achieve, success indicators, and learning objectives; (2) Development of crossword puzzles was conducted after he had accomplished the research, starting from field surveys, analyzing the students needs, determining media/teaching tool, designing the media/teaching tool, validation made by the assessors/analysts, revisions, media/tool application, and reporting; (3) The benefit of crossword puzzles usage in the learning is that it could improve the students activeness. It was shown through recapitulation of the students activeness scores during the learning. He could see that the students activeness was "excellent" at percentage 86%. And the questionnaire on students responses showed that they gave positive responses to the application of crossword puzzles in the learning, at average percentage 2.86% which means "fulfill" standard criteria of students' responses analysis. Then the students learning outcomes after applying crossword puzzles were tested in the class, and it showed "excellent" outcomes at average collective grade point 84.7.

Another study was conducted by Wingga Pratami, Ngurah Ayu, Dan Henry Januar Saputra (2017) titled *"Pengaruh Media Game Edukasi Teka Teki Pengetahuan Terhadap Minat Belajar Siswa Pada Mata Pelajaran IPA Kelas 5 SDN 03 Protomulyo"* (Impact of Crossword Puzzles about Knowledge on Learning Enthusiasm of Grade V Students of SDN 03 Protomulyo to Subject of Natural Science). Based on t-test, they found that level of significance $\alpha = 0.05$ at t-count = 2.115 and t-table = 2.024. As t-count > t-table , i.e. 2.115 > 2.024 thus H_1 was accepted. They, therefore, could draw a conclusion that "Knowledge Crossword" has significant impact on the learning interest of grade 5 students of SDN 03 Protomulyo in Natural Science. The relevant research was also conducted by Putu Hendy Pradika, I Gusti Agung Oka Negara, I G. A.Agung Sri Asri, published in 2017 titled *"Pengaruh Pembelajaran Course Review Horay Dengan Permainan teka Teki Silang (TTS) Terhadap Kompetensi Pengetahuan IPS Siswa kelas V SD Gugus Budi Utomo Dentim Tahun pelajaran 2016/2017"* (The Impact of Course Review Horay Learning Using Crossword Puzzles on Social Science Knowledge of Grade V Students of SD Gugus Budi Utomo Dentim

during 2016/2017 School Year). The study aimed to find the impact of Course Review Horay through crossword puzzles on Social Science lesson mastery of grade V Gugus Budi Utomo Denpasar Timur during 2016/2017 school year. From the research based on the data analysis, they found that t-count = 6.78 > t-table = 2.000 at level of significance 5% and df = 86, thus H_0 was rejected and Ha was accepted. This showed that experimental and control groups have significant difference of Social Science knowledge mastery of grade V students of SD Gugus Budi Utomo Denpasar Timur during 2016/2017 school year. Their average score also showed that Social Science knowledge mastery of experimental group was X = 86.24 > X = 69.89 by control group. Thus, they could draw a conclusion that Course Review Horay through crossword puzzles had impact on Social Science knowledge mastery of grade V students of SD Gugus Budi Utomo Denpasar Timur in 2016/2017 school year.

The relevant study published in international journal was conducted by Wiwat Orawiwatnakul (2013) titled "Crossword Puzzles as a Learning Tool for Vocabulary Development". The study showed that all students' posttest scores were higher than their pretest ones at level of significance 0.05 when dividing the students into three groups. From their vocabulary skills, they found that the students in all groups could improve their vocabulary skills at level of significance 005. Repeated measure ANOVA showed that the significant difference was found in the scores of the three groups based on the scores of the test and their final exam.

Another relevant research was made by Elizabeth Yuriev, Ben Capuano, and Jennifer L. Short on Crossword Puzzle published on Chemistry Education Research and Practice in 2016 titled "Crossword Puzzles for Chemistry Education: Learning Goals beyond Vocabulary".The research developed crossword puzzles to help the students comprehend chemical terms through meaningful learning instead of memorization. They had evaluated the tool on its effectiveness in the study and particularly in the revision. The study showed that the crossword improved the students' problem-solving skill and if it was used systematically, it would make contribution to the learning improvement. This finding was discussed in information-processing and meaningful learning contexts.

Explanatory writing was taught in the development of crossword puzzles. The following is another supporting research published on a journal, i.e. the one conducted by Iis Suwartini published on Bahastra Vol.37 No.1/2014 titled *"Analisis Teks Eksplanasi Pada Media Massa Melalui Pembelajaran Berbasis Masalah"* (Analysis of Explanatory Writing on Mass Media through Problem-Based Learning). The study showed that learning process of explanatory writing lesson needed to apply the effective learning method.

Design of crossword puzzles was developed and it comprised several parts, i.e.: 1) Teacher's and Student's Crossword Books; 2) Crossword Puzzles Board; 3) Boardmarker. The crossword book contained: Core Competencies, Basic Competencies, Indicators of Mastery, Rule of Game, Explanatory Text, and the answers based on the clues.

The design of the combination of the various components in the crossword puzzles was composed in the prototype of product design. The prototype of product design was used as concept in the manifestation of the development ideas. It was the reference for the product making in order that the developed product was in accord with the concept of product development. The design of the crossword puzzles development was put on laminated, framed, and duplex-coated A3+ Ivory paper.

The developed crossword puzzles was also adjusted to the learning objectives and the lesson, i.e. explanatory text. The display of the product of the crossword puzzles development is presented below:

Picture 1. Display of Crossword Puzzles Board

Picture 2. Front and Back Covers of Crossword Book

Picture 3. Contents of Crossword Book

The crossword puzzles were assessed by the media and the lesson materials analysts. The lesson materials analyst was Drs. Sukarir Nuryanto, M.Pd., while the media analyst was

from Department of Educational Technology, i.e. Dr.kustiono, M.Pd. I analyzed the scores given by the analysts using the formula found in Purwanto's book (2013:102), i.e. the received score was divided by the maximum score and multiplied with one hundred percent.

Validation of Applicability Assessment of Learning Comics

Table 1. Assessment of Validation Made by Media and Lesson Materials Analysts

No.	Validator	Validation Tool	Percentage	Remarks
1	Drs. Sukarir Nuryanto, M.Pd.,	Validation of Lesson Materials	88%	Excellent
2	Dr.Kustiono, M.Pd.,	Media Validation	89%	Excellent

Based on table 1 above, the percentage of assessment validation made the analysts was 88% which meant excellent. It was not much different from the assessment made by media analyst at percentage 89% which meant excellent, too. I determined 3 aspects for assessing the crossword puzzles included in 15 questions, such as core competencies, basic competencies, learning objectives, design of the appearance, size, color, the media usage, durability, and usability. Based on assessment validation made by lesson materials and media analysts, I can draw a conclusion that the crossword puzzles were applicable to explanatory writing lesson of Indonesian learning.

Teacher's and Students' Responses

The teacher and the students assessed the applicability of the monopoly game with crossword puzzles through the questionnaires on responses distributed after the learning using the tool had finished. The assessment is presented below.

Table 2. Recapitulation of Assessment in Questionnaire on Teacher's and Students' Responses

No.	Validator	Percentage	Remarks
1	Students of SDN Mangkang Kulon 01	95%	Excellent
2	Teacher of SDN Mangkang Kulon 01	86%	
3	Students of SDN Mangkang Kulon 02	94%	
4	Teacher of SDN Mangkang Kulon 02	88%	

Based on the data above, I find that the percentage score is included in percentage 81%-100%, thus, it is classified in "excellent" responses.

Product Efficacy Test

The efficacy test was conducted to 34 grade V students SDN Mangkang Kulon 02, and the data were collected from the students learning outcomes before using the media or pretest and after using the media or posttest. The average difference test of pretest and posttest scores shows that t_{count} = .-16.058. As t_{table} had positive value, i.e. 2.034 then t-count value was changed into positive number or was rounded up into 16.058 so t-count > t-table, thus Ha was accepted and Ho was rejected, which means that crossword puzzles are effectively used in Indonesian learning.

Table 3. Perbedaan Rata-rata Pretest dan Posttest

Paired Samples Test										
		Paired Differences						t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
					Lower	Upper				
Pair 1	pretest - posttest	-25,088	9,110	1,562	-28,267	-21,910		-16,058	33	,000

I calculated the average improvement using N-gain formula as written by Lestari (2015:234-236), i.e. posttest score minus pretest score then divided with maximum score minus pretest score.

Table 4. Students' Pretest dan Posttest Scores

Average Pretest Score	Average Posttest Score	N-Gain	Remarks
51.02	76.11	0.52	Fair

4. Conclusion

The conclusion of the creation of monopoly game containing the crossword puzzles to summarize the explanatory text for grade V students developed to meet the teacher and the student needs comprises: (1) square monopoly game at 48 cm x 32 cm size; (2) crossword book, which consists of several parts, i.e. core and basic competencies, indicators of mastery, rule of game, explanatory texts, as well as the clues and the answers. The development of crossword puzzles have passed the media applicability assessment scored 89%, and lesson materials applicability assessment scored 88%. The difference test of average pretest dan posttest scores show that t-count was -16.058. As t-table value was in positive number, i.e. 2.034 then the value of t-count was changed into positive number or rounded into 16.058 so t-count > t-table, thus Ha was accepted and Ho was rejected. N-gain of pretest dan posttest scores was 0.5226 which means "fair". Therefore I can draw a conclusion from the study that the crossword puzzles were applicable to and effective to be used in the learning of explanatory text lesson of Indonesian subject and it has impact on the learning outcomes of grade V students of SDN Mangkang Kulon 02.

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