

**IMPROVING STUDENTS' LEARNING OUTCOME:
IMPLEMENTATON MIND MAPPING METHOD WITH GOCONQR**

Dewi Dewantara ¹

**¹ Pendidikan Fisika, FKIP, Universitas Lambung Mangkurat
Kalimantan Selatan, 70123, Indonesia
dewantarafisika@gmail.com**

Accepted: October 10, 2019

Published: October 31, 2019

DOI: 10.21107/jps.v6i2.6017

ABSTRACT

This article aims to describe the improvement in student learning outcomes after applying to learn with the mind mapping method using the GoConqr application. This type of research is a quantitative descriptive. The sampling technique was purposive sampling, namely students who took the "Telaan Fisika SM III" at Lambung Mangkurat University 2018/2019 Academic Year. The number of research subjects is 15 students. Data collection techniques are using pretest and posttest. Data were analyzed using N-gain. N-gain test results obtained a value of 0.503. Therefore, it can be concluded that the effectiveness of learning with mind mapping methods using the GoConqr application is in the medium category. Thus, learning with the mind mapping method using the GoConqr application is effectively applied to improve student learning outcomes.

Keywords: GoConqr, mind mapping, learning outcomes.

¹ Corresponding Author

Introduction

The alternating current circuit is one of the physics materials in high school with necessary competencies, namely analyzing the alternating current circuit and its application and presenting the working principle of applying the alternating current circuit in daily life. This basic competency shows that students must have analytical skills and presentation skills. The ability of analysis and the ability of students to present a series of alternating currents will be illustrated from the results of student learning after carrying out the Study of Physics Study III on the material of alternating current circuits.

One way to improve student learning outcomes on the material alternating current circuit is the use of mind mapping methods. Because mind mapping can help students see the relationship between ideas (Rianita & Juliani, 2017) and provide opportunities for students to construct their knowledge (Miranti & Wilujeng, 2018). In addition, learning with mind mapping will teach students to gain meaningful knowledge. Furthermore, mind mapping makes students more eager to find more information and makes it easier for students to remember it (Rahma, 2013). It shows that information will be stored in the long term memory of students (Slavin, 2006). Thus, students will easily recall the information that has been built up in their knowledge.

Another advantage of the mind mapping method is that it helps students unite a variety of materials from various sources, summarize the material, and develop ideas. (Buzan, 2008; Windura, 2013). Mind mapping is handy for exploring ideas by using the language of images to capture thoughts so that they can explore ideas in more detail without limits (Herdin, 2017). Mind mapping

invites students to imagine an object as an interconnected whole (Handayani, 2018). The mindset of students will be more developed by bringing up ideas in the learning process that is assisted by mind mapping (Dewantara, 2019b; Rahma, 2013). Thus, the mind mapping method makes it easier for students to develop concepts (Dewantara, 2019b; Ulya, Santoso, & Hamidi, 2015) to be able to improve students' cognitive learning outcomes (Mariyam & Nuraida, 2017).

Mind mapping was initially only explained manually, but now mind mapping can be done using various mind mapping software (Dewantara, 2019c, 2019b, 2019a; Miranti & Wilujeng, 2018). Not only in the form of software but making mind mapping can also be done online. One site that provides space and facilities for creating mind mapping is GoConqr. GoConqr is an online platform used for mind mapping and sharing mind mapping contents in various formats (Borchers, 2018; Shaykina, 2015). GoConqr aims to empower both educators and students to reach their potential. The results of the study (Yuliasutik & Samsul, 2019) showed that GoConqr could be used in helping high school students in learning. The application of mind mapping using GoConqr is expected to improve student learning outcomes on alternating current circuit material. This article aims to describe the improvement in student learning outcomes after applying to learn with the mind mapping method using GoConqr.

Research Method

This research is a quantitative descriptive study. The sampling technique was purposive sampling, namely the Physics education students taking the Physics III Middle School study subject in 2018. The number of research samples

Implementaton Mind Mapping Method With GoConqr

was 15 students. Data collection techniques are to use tests given before the learning process and afterward. The test aims to find out the increase in student learning outcomes after applying to learn with mind mapping methods using the GoConqr application. The material in this study is limited to alternating current circuits.

Data analysis using N-gain test (Hake, 1998).

$$\langle g \rangle = \frac{\% \langle S_f \rangle - \% \langle S_i \rangle}{100\% - \% \langle S_{pre} \rangle}$$

Information :

$\langle g \rangle$ = gain score

$\% \langle sf \rangle$ = percentage average posttest score

$\% \langle si \rangle$ = average percentage of pretest scores

Categories of the results of improving student learning outcomes can be seen in table 1.

Table 1. Criteria for the results of improving student learning outcomes

No	Score	Criterion
1	$\langle g \rangle > 0,7$	High
2	$0,3 \leq \langle g \rangle \leq 0,7$	Fair
3	$\langle g \rangle < 0,3$	Low

Result and Discussion

Learning with the mind mapping method using GoConqr is carried out on alternating current circuit material. Figure 1 shows the GoConqr display used in learning.

Mind mapping made with GoConqr is an effective way. Students easily place essential information from the process of studying the material. The information becomes meaningful for students by using lines, symbols, conjunctions, colors, and images. Students also easily organize their knowledge. Giving color to the mind mapping makes knowledge more memorable.

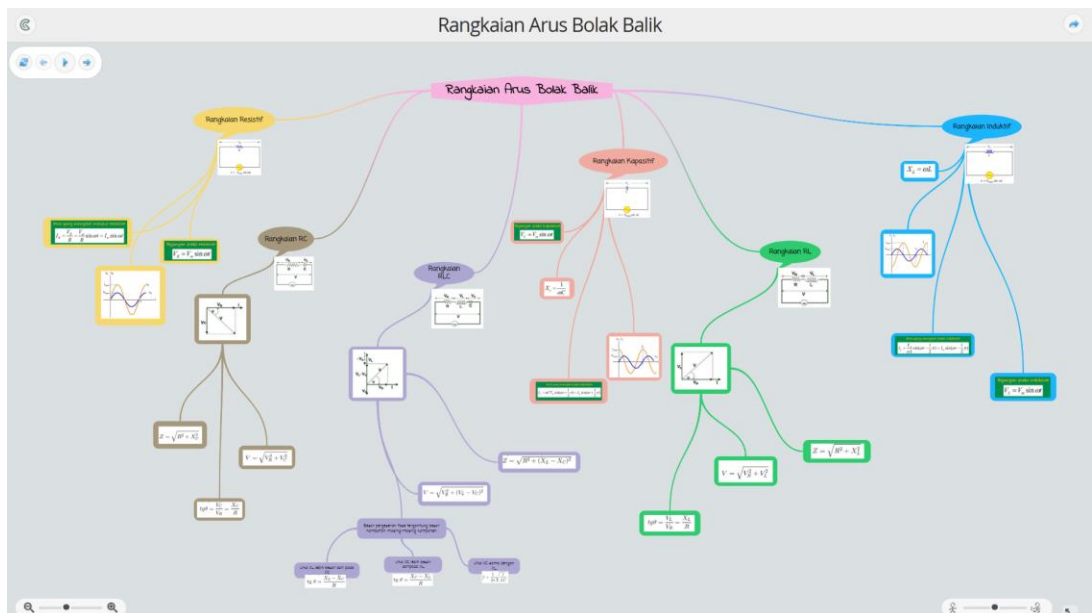


Figure 1. Mind mapping display using GoConqr

Source: https://www.goconqr.com/en-US/p/14472157-Rangkaian-Arus-Bolak-Balik-mind_maps

Dewantara

Learning using the direct instruction model. At each phase of the implementation of learning, I use mind mapping has been made using GoConqr. GoConqr provides various paths that can be tailored to the needs of users. I see that students easily understand important concepts in the material of alternating current circuits. Students are more interested in using mind mapping. Based on the test results before and after learning by using mind mapping, student learning outcomes have increased. The average pretest and posttest results can be seen in Table 2.

Table 2. Pretest and Post-test Result

	Min	Max	average
Pretest	4,00	21,00	9,87
Posttest	17,00	71,00	55,2
N-gain score			0,503

N-gain test results show a value of $<g>$ of 0.503. Based on the criteria in table 1, the increase in student learning outcomes with the mind mapping method using GoConqr is in the medium category. These results indicate that the mind mapping method effectively improves student learning outcomes in line with previous research. Mind mapping method in this study was chosen because mind mapping is very effective in learning (Riswanto & Dasmo, 2015), and can train students' ability to be able to analyze concepts (Rahma, 2013).

The mind mapping method can be used in learning activities to improve student learning outcomes on physics material (Annisa, Heryanto, Rusilowati, & Subali, 2018; Ningrum, Siswoyo, & Rustana, 2015). The existence of mind mapping can provide an initial overview of the understanding of the material to be learned by students so that students

become more motivated (Mariyam & Nuraida, 2017). Mind Map can help students how to take notes that accommodate the way the brain works naturally (Handayani, 2018).

Mind mapping makes it easy for students to summarize subject matter and increase the speed of thinking (Rahma, 2013). Mind mapping helps in integrating the work functions of the brain simultaneously and interrelated with each other, making it easier for students to understand and remember learning concepts (Putri, Masril, & Gusnedi, 2017). Based on information processing theory states that information will be easier to remember if the information is stored in long term memory (Slavin, 2006).

Giving mind mapping shows that students can store relevant information in long-term memory. It is evidenced by an increase in student learning outcomes after using the mind mapping method. Student test scores experienced a significant increase seen in table 2. Furthermore, students can also construct their knowledge from existing mind mapping. Knowledge constructed by students results in more meaningful learning (Slavin, 2006).

The use of GoConqr in learning with mind mapping methods helps students improve their learning outcomes. GoConqr is a tool on one website, which contains mind mapping and other useful learning tools (Mann, 2018). GoConqr allows students to share information in creative ways and use a limited number of words to express knowledge (Minuche, Celi, & Ulehlova, 2019). The use of GoConqr in the classroom is intended to work together in groups or individually facilitate discussion and overall test knowledge (Shaykina, 2015).

Implementaton Mind Mapping Method With GoConqr

Conclusion

Finally, improving student learning outcomes with the mind mapping method using the GoConqr application is in the medium category. Thus, learning with the mind mapping method using the GoConqr application can improve student learning outcomes. Based on the results of this study, it is suggested that you can try to use the mind mapping method using GoConqr in learning to improve student learning outcomes. In addition, further research on the use of mind mapping methods using the GoConqr application on various topics, both science and outside science, is needed.

References

- Annisa, R., Heryanto, W. P., Rusilowati, A., & Subali, B. (2018). Peningkatan daya ingat dan hasil belajar siswa dengan mind mapping method pada materi listrik dinamis. *Jurnal Pendidikan (Teori Dan Praktik)*, 3(1), 19–23.
- Borchers, A. (2018). *Technology Management in Organizational and Societal Context*. USA: IGI Global.
- Buzan, T. (2008). *Buku Pintar Mind Map*. Jakarta: PT Gramedia Pustaka Utama.
- Dewantara, D. (2019a). Pembelajaran fisika dengan metode mindmapping menggunakan mindmeister pada materi rangkaian arus searah. *Jurnal Inovasi Pendidikan Fisika Dan Riset Ilmiah*, 3(1), 15–19.
- Dewantara, D. (2019b). Penerapan pembelajaran dengan metode mindmapping menggunakan coggle TM. *Thabieca: Journal of Natural Science Teaching*, 02(01), 13–18.
- Dewantara, D. (2019c). The effect of learning with the mind mapping method using i-mindmap towards student's analytical ability. *Indonesian Journal of Science and Education*, 3(1).
- Hake, R. R. (1998). *Analyzing Change/Gain Score*. Department of Physics at Indiana University.
- Handayani, A. (2018). Strategi mind map dalam pembelajaran group investigation terhadap keterampilan proses sains dan prestasi belajar siswa. *Momentum: Physics Education Journal*, 2(1), 15–20.
- Herdin. (2017). *7 Rahasia Mind Map Membuat Anak Genius*. Jakarta: PT Elex Media Komputindo.
- Mann, A. (2018). *Live Well, Teach Well: A practical approach to wellbeing that works*. Great Britain: Bloomsbury Publishing.
- Mariyam, & Nuraida, D. (2017). Pengaruh model pembelajaran brain based learning dipadukan dengan mind mapping terhadap penguasaan konsep siswa the influence of learning model of braind based learning with mind mapping on student concept construction. *Proceeding Biology Education Conference*, 14(1), 494–497.
- Minuche, G. C., Celi, V. E., & Ulehlova, E. (2019). Cooperative learning and the use of ICT as an alternative to reinforce knowledge about pedagogical models in higher education. *Analysis*, 22, 47–50.
- Miranti, M. G., & Wilujeng, B. Y. (2018). Creative thinking skills enhancement using mind mapping. In 1st International Conference on Social, Applied Science and

Dewantara

- Technology in Home Economics (ICONHOMECS 2017) Creative (Vol. 112, pp. 39–42).
- Ningrum, D. W., Siswoyo, & Rustana, C. E. (2015). Perbandingan hasil belajar fisika siswa kelas xi yang menggunakan metode pembelajaran peta pikiran (mind mapping) dan metode pembelajaran peta konsep (concept mapping). In *Prosiding Seminar Nasional Fisika (E-Journal) SNF2015* (Vol. IV, pp. 105–110).
- Putri, W. R., Masril, & Gusnedi. (2017). Pengaruh penggunaan lkpd berbasis mind map pada pembelajaran berbasis masalah terhadap pencapaian kompetensi fisika peserta didik kelas XI SMA Negeri 2 Padang pada materi teori kinetik gas dan pemanasan global. *Pillar Of Physics Education*, 10, 169–176.
- Rahma, A. A. (2013). Pengaruh model siklus belajar berbantuan mind map terhadap prestasi belajar fisika ditinjau dari kinerja laboratorium siswa kelas VIII SMPN 1 Rejoso Kabupaten Pasuruan. *Jurnal Pendidikan Sains*, 1(2), 187–193.
- Rianita, R., & Juliani, R. (2017). Penerapan model pembelajaran berbasis masalah berbantuan mind map untuk hasil belajar fisika siswa di SMA Negeri 3 Binjai. *Jurnal Inovasi Pembelajaran Fisika*, 5(4), 51–56.
- Riswanto, H., & Dasmu. (2015). Upaya meningkatkan hasil belajar ilmu pengetahuan alam (ipa) dengan metode pembelajaran mind map. *Jurnal Formatif*, 5(2), 100–106.
- Shaykina, O. I. (2015). Blended learning in english language teaching: open educational resources used for academic purposes in tomsk polytechnic university. *Mediterranean Journal of Social Sciences*, 6(3).
- Slavin, R. E. (2006). *Educational Psychology* (8th ed.). Boston: Pearson Education, Inc.
- Ulya, A., Santoso, S., & Hamidi, N. (2015). Peningkatan hasil belajar melalui penerapan metode peta pikiran pada pembelajaran dasar-dasar perbankan. *Jurnal "Tata Arta" UNS*, 1(3), 332–342.
- Windura, S. (2013). *1st Mind Map Untuk Siswa, Guru, dan Orang Tua*. Jakarta: PT Elex Media Komputindo.
- Yuliastutik, F., & Samsul, S. I. (2019). Pengembangan latihan membaca kelas xii semester 1 SMAN 12 Surabaya melalui "GoconQr." *Laterne*, 8(1), 1–11.