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The Effect of Using the Powtoon Application on Learning Outcomes of Class XI IPA Students SMAN 1 Sidrap

Sri Wahyuni¹, Usman M², Syamsunir³, Sam Hermansyah⁴, Jusman Tang⁵

¹Universitas Muhammadiyah Sidenreng Rappang, Indonesia

²Universitas Muhammadiyah Sidenreng Rappang, Indonesia

³Universitas Muhammadiyah Sidenreng Rappang, Indonesia

⁴Universitas Muhammadiyah Sidenreng Rappang, Indonesia

⁵Universitas Muhammadiyah Sidenreng Rappang, Indonesia

ABSTRACT

Background. This Powtoon application on the science learning outcomes of students in Class XI IPA SMA Negeri 1 Sidrap. The population is 190 students, so the sampling in this thesis is 20% of the population, meaning $190 \times 20\% = 38$ student samples using Suharsimi Arikunto's opinion with sampling techniques, namely, percent.

Purpose. There are 2 variables in this study, namely the independent variable using the Powtoon application (X) and the dependent variable, namely science learning outcomes (Y).

Method. This research was conducted at SMA Negeri 1 Sidrap, precisely in Rappang Kec. Panca Rijang, Kab. Sidenreng Rappang Data collection techniques using tests and documentation.

Results. The collected test results data were analyzed using descriptive techniques using the average formula (mean). Based on the results of data analysis obtained X value = 87.052 > Y value = 72.842 so it can be known that there is an effect of using the Powtoon application on the science learning outcomes of students in class XI IPA SMA Negeri 1 Sidrap.

Conclusion. Based on the research results obtained, it can be concluded that there is an effect of using the Powtoon application on the science learning outcomes of students in class XI IPA SMA Negeri 1 Sidrap, this shows that the working hypothesis which states that there is an effect of using the Powtoon application on the science learning outcomes of students in class XI IPA SMA Negeri 1 Sidrap, is accepted.

KEYWORDS

Influence, Powtoon, Natural Science

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Correspondence:

Sri Wahyuni
srwhyuni0208@gmail.com

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INTRODUCTION

Education is an important part of life. Education is expected to create a generation that is able to build a better nation (Khoirunnisa & Robiansyah, nd). As for the national context, education is a conscious and planned

effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and the skills needed by themselves, the nation's community. and the State.

In the current era, we have entered the industrial era 4.0 towards the era of society 5.0 where we always live side by side with technology. Technology is currently experiencing tremendous progress. Every corner of the world utilizes technology in various fields, thereby helping to solve various kinds of problems (S. Dasar et al., 2021) . In addition to problems in the social, political, cultural, economic, and educational fields. The world of education develops according to the demands of the times and is followed by increasingly rapid technological developments. The world of education today is very dependent on technology because it can help the process learner (S. Basic et al., 2021) . Learning is a process of communication between students, teachers and teaching materials. Learning media is a powerful tool that can be used in conveying learning information (M et al., 2021) .

The era of the industrial revolution 4.0 is an era where almost everything is controlled by technology, including in the world of education. The impact of the 4.0 industrial revolution era in the world of education is that there are more and more technology-based learning media that make it easier for teachers to convey their learning material (Firmadani, 2020) . To achieve effective learning, we need a media that is in accordance with the character of the students and the subjects presented, the atmosphere and infrastructure supporting technology (Syamsunir, 2021) .

Technology in education is a study and ethical practice on how to facilitate learning media and improve performance by creating, using and managing learning processes and resources appropriately (Eka et al., 2022) . Learning media is a factor that plays an important role during the learning process (Wahyuningtyas & Sulasmono, 2020) . Learning media can play a role in the learning process because it is an integral part that cannot be separated from the world of education. Learning media is anything that can be used to channel messages from senders to recipients, so that they can stimulate students' thoughts, feelings, concerns, and interests to learn (Tafonao, 2018) . Therefore teachers must be able to use technology so that in teaching they can utilize various technologies as media or learning resources. Teachers are expected to be able to design learning media that are innovative, creative, efficient and effective so that they can increase the activeness of students in the learning process (Ferdiansyah et al., nd) .

Based on the results of observations made on Friday 6 January 2023 at SMA Negeri 1 Sidrap, it was found that several subject teachers still used classic learning media such as textbooks or media presentations such as PowerPoint 2007 which according to the teacher was still not attractive to students so that some the student learning outcomes still do not meet the minimum completeness criteria standard (kkm), namely 80, so the author took the initiative to offer one of the presentation media using the Powtoon application , because Powtoon is not much different from Powerpoint media for presenting teaching materials, but Powtoon is more interesting because there are many choice of animation (Rahmawati, 2022) .Based on the explanation above, the writer is interested in raising this title, namely the effect of using the Powtoon application on student learning outcomes in class XI IPA SMA Negeri 1 Sidrap. It has several features that Microsoft Office PowerPoint 2007 does not yet have, such as animation that can be taught to students for more effective learning because the media has many animations and can be taught in distance learning, teachers can develop this media so that students are not far behind by the times.

RESEARCH METHODS

This study uses 2 variables, namely the use of applications Powtoons as the influencing variable (X or independent variable) and science learning outcomes as the affected variable (Y or dependent variable). B. Design _ Study The research process was designed systematically according to the following steps:

Plan activities

Prepare tools

Managing time

The students who were the target of the research were divided into 2 groups

The first group (experiments) is the one with the odd serial number, meanwhile

The second group (control) is the one with even serial number.

Doing learning

Evaluate in the form of multiple choice of 30.

Each correct answer is given a score of 1, while an incorrect answer will be given a score of 0.

If all answers are correct then a score of 100 is given.

Analyze results

Draw a conclusion

Variable Operational Definition

To clarify the scope of this research, it is necessary to state the definitions of the terms used as follows:

Application Powtoons is application presentation Web-based used in study this .

Learning outcomes are the values that students will get after taking the test at the end of learning.

Science is a compulsory subject at the senior high school level which is the focus of this research.

Population and Sample

Population

Population is a generalization area consisting of: objects or subjects that have certain qualities and characteristics determined by researchers to be studied and then conclusions drawn (Kurniawan, 2012) . The population in this study were all students majoring in science class XI at SMA Negeri 1 Sidrap.

Table circumstances population

No	Class	Man	Woman	Amount
1	XI IPA 1	9	22	31
2	XI IPA 2	6	24	30
3	XI IPA 3	10	20	30
4	XI IPA 4	9	25	34
5	XI IPA 5	8	25	33
6	XI IPA 6	8	24	32
Amount		50	140	190

Sample

The sample is part or representative of the population studied (Suharsimi Arikunto, 2010) . If the number of respondents is less than 100, all samples are taken so that the research is a population study. Meanwhile, if the number of respondents is more than 100, then the sampling is 10% - 15% or 20% -25% or more (Arikunto, 2002: 112). Some of the reasons for sampling are:

The ability of researchers seen from the time, energy and funds

Narrow area of observation of each subject, because this involves a lot of data,
It is easier to distribute questionnaires because the number has been determined.

Based on the opinion above, the sampling in this study was 20% of the existing population, because the total population exceeded 100, namely 190 students. Means $190 \times 20\% = 38$, so the sample used in this study was 38 students. .

Tabel circumstances sample study

No	Class	Population	Sample (20%)
1	XI IPA 1	31	6
2	XI IPA 2	30	6
3	XI IPA 3	30	6
4	XI IPA 4	34	7
5	XI IPA 5	33	7
6	XI IPA 6	32	6
Amount		190	38

The sampling method was to randomly take 20% of class XI IPA students at SMA Negeri 1 Sidrap in each class without determining the characteristics of the students to be sampled. This means that if there are 190 students in class XI IPA at SMA Negeri 1 Sidrap and 20% of the 190 or 38 students who will be sampled, then each of these elements has a $38/190$ probability of being selected as the sample. Purposive cluster random sampling was carried out by lottery, namely drawing the names of individuals in the population in each class. The names were then drawn to take as many samples as needed. This technique was chosen because the researcher wanted to provide equal opportunities for each class in the entire population of class XI IPA students at SMA Negeri 1 Sidrap to become a sample and were randomly selected in each classroom (Han et al., 2019) .

Technique Data Collection

Data collection techniques in this study using tests. In the context of learning the test used to measure student learning outcomes is a multiple choice test of 30 questions. Documentation techniques are used to obtain data about the condition of students who actively participate in the teaching and learning process and the number of students in class XI IPA at SMA Negeri 1 Sidrap.

Technique Data Analysis

The collected data were then analyzed using descriptive statistical techniques using the Mean formula. The steps to analyze the data are student test results used to determine the classification of student scores. The score obtained by the researcher is converted into a value in the formula below :

$$N = \frac{\text{Skor yang diperoleh}}{\text{X100}}$$

To find out whether there is an effect of using the Powtoon application on student learning outcomes in class XI IPA SMA Negeri 1 Sidrap, the mean formula is used as follows :

$$M_y = \frac{\sum f_y}{N_y} M_x = \frac{\sum f_x}{N_x}$$

RESULTS AND DISCUSSION

The research was conducted in class XI at SMA Negeri 1 Sidrap. The class chosen as the sample was class XI IPA of SMA Negeri 1 Sidrap. In this study it was divided into 2 groups, namely the experimental group which in the process of learning activities would use powtoon and the control group where in learning activities they would not use the powtoon application or use conventional learning. After carrying out the teaching and learning process the two groups were given a test.

Data presentation from the results of research that has been done using documentation and tests in the form of options dual as a data collection instrument, the following results are obtained:

Data with variable X is the result of learning science that uses

powtoon (experimental group)

science learning outcomes that do not use powtoons (control group).

To facilitate the process of data analysis, the data that has been collected will be presented first and then analyzed, then proceed with hypothesis testing using statistical techniques

Table Score And mark group experiment

No	Sample Code	Score	Mark
1	US	25	83
2	US	23	76
3	AKZ	26	86
4	AMR	26	86
5	CAA	25	83
6	DN	25	83
7	MI	25	83
8	MRA	26	86
9	NAS	27	90
10	NY	27	90
11	NFS	27	90
12	NNR	27	90
13	RH	27	90
14	S	27	90
15	S	27	90
16	SR	26	86
17	MA	26	86
18	MZZ	29	96
19	NS	27	90

From the results of studying natural sciences in the Experimental Group above, it shows that none of the students scored 100. The highest score was 96, then the lowest score was 76.

Furthermore, table 4.2 below presents the results of the project obtained by the control group of class XI students of SMA Negeri 1 Sidrap. Based on calculation on found that results test on group given experiment _ by student have average score flat that is 87,052 And mark average Which got from results test on group control is 72,842. Can seen the difference that test group experiment using _ powtoons own mark more tall than test group control Which use learning conventional .

Matter the can become instruction exists influence use powtoons to results Study Knowledge Knowledge Natural student class XI SMA Negeri 1 Sidrap taught use book in the learning process

and which taught use Powtoons . With thereby can seen that Powtoons used _ very help student in learn material Which served , so from That Powtoons give influence positive for student .

Discussion Results Study. This research was conducted with the intention to determine the effect of powtoon application-based learning media on learning outcomes in Science subjects Knowledge Class XI IPA SMA Negeri 1 Sidrap . The location for the implementation of this research was at SMA Negeri 1 Sidrap by taking a sample of 38 students. In determining the division of the experimental and control groups by dividing based on the odd number of attendance for the experimental group and the even number of attendance for the control group.

Based on the acquisition of values obtained in this study, it shows differences in science learning outcomes knowledge Nature of class X I IPA SMA Negeri 1 Sidrap using the powtoon application in the learning process better than students who carry out the learning process as usual. Learning outcomes can be seen from the comparison of the results of the tests that have been carried out on students at the end of the learning process.

The results of the experimental group using the powtoon application in the learning process obtained a higher score compared to the control group which did not use the powtoon application during the learning process. This can be seen from the results of the data analysis that was carried out showing the average value of the experimental group ($M_x = 87.052$) while the control group ($M_y = 72.842$). This value indicates that the value of M_x is greater than M_y ($87.052 > 72.842$).

Based on the gains obtained in the statement above, the hypothesis states that there is an effect of using the application powtoon on science learning outcomes knowledge Natural class XI IPA SMA Negeri 1 Sidrap "accepted" . The consequence of this acceptance is the hypothesis which states that there is no effect on the use of the application powtono on science learning outcomes knowledge Nature of class X I IPA Sidrap 1 Public High School "rejected" . Thus it can be concluded that the use of the powtoon application in the learning process can have a positive influence. This is demonstrated by using the powtoon application in the learning process on student learning outcomes is quite satisfactory compared to learning outcomes that do not use the powtoon application on the learning process.

CONCLUSION

After do study and analysis so writer in stage This expose a number of conclusion Which based to formula problem Which has determined. Conclusion the is as following: Use Powtoons on process learning give influence on learning outcomes of Natural Science class XI students of SMA Negeri 1 Sidrap. Matter This Because with use Powtoon, Teacher And student can do process learn to teach more easily and convey information to student with Good And interesting. Based on the research results in accordance with testing the hypothesis through analysis data obtained mark average that is $M_x = 87,052 > M_y = 72,842$.. Here means the difference in the average value indicates the effect of use Powtoons to results Study Natural Science class XI student of SMA Negeri 1 Sidrap. Results of analysis with test end show that student Which taught use Powtoons impact positive compared with student Which taught with use learning conventional (book package).

REFERENCES

- Aldowah, H., Al-Samarraie, H., & Fauzy, W. M. (2019). Educational data mining and learning analytics for 21st century higher education: A review and synthesis. *Telematics and Informatics*, 37, 13–49. <https://doi.org/10.1016/j.tele.2019.01.007>

- Alhammadi, S., Archer, S., & Asutay, M. (2020). Risk management and corporate governance failures in Islamic banks: A case study. *Journal of Islamic Accounting and Business Research*, 11(9), 1921–1939. <https://doi.org/10.1108/JIABR-03-2020-0064>
- Atmaja, H. T. (2019). Pelatihan dan Pendampingan Pembuatan dan Pemanfaatan Media Audio-Visual Interaktif dalam Pembelajaran Sejarah yang Berbasis pada Konservasi Kearifan Lokal Bagi MGMP Sejarah Kabupaten Banjarnegara. *Jurnal Panjar: Pengabdian Bidang Pembelajaran*, 1(2), 131–140. <https://doi.org/10.15294/panjar.v1i2.29722>
- Bhatti, M. (2019). Managing Shariah Non-Compliance Risk via Islamic Dispute Resolution. *Journal of Risk and Financial Management*, 13(1), 2. <https://doi.org/10.3390/jrfm13010002>
- Chandrasekar, R., Chandrasekhar, S., Sundari, K. K. S., & Ravi, P. (2020). Development and validation of a formula for objective assessment of cervical vertebral bone age. *Progress in Orthodontics*, 21(1), 38. <https://doi.org/10.1186/s40510-020-00338-0>
- Craik, A., He, Y., & Contreras-Vidal, J. L. (2019). Deep learning for electroencephalogram (EEG) classification tasks: A review. *Journal of Neural Engineering*, 16(3), 031001. <https://doi.org/10.1088/1741-2552/ab0ab5>
- Crawford, A., & Serhal, E. (2020). Digital Health Equity and COVID-19: The Innovation Curve Cannot Reinforce the Social Gradient of Health. *Journal of Medical Internet Research*, 22(6), e19361. <https://doi.org/10.2196/19361>
- Dunn, P., & Hazzard, E. (2019). Technology approaches to digital health literacy. *International Journal of Cardiology*, 293, 294–296. <https://doi.org/10.1016/j.ijcard.2019.06.039>
- Estacio, E. V., Whittle, R., & Protheroe, J. (2019). The digital divide: Examining socio-demographic factors associated with health literacy, access and use of internet to seek health information. *Journal of Health Psychology*, 24(12), 1668–1675. <https://doi.org/10.1177/1359105317695429>
- Guess, A. M., Lerner, M., Lyons, B., Montgomery, J. M., Nyhan, B., Reifler, J., & Sircar, N. (2020). A digital media literacy intervention increases discernment between mainstream and false news in the United States and India. *Proceedings of the National Academy of Sciences*, 117(27), 15536–15545. <https://doi.org/10.1073/pnas.1920498117>
- Hikmi, R., Simorangkir, M., & Sudrajat, A. (2020). Development Of Interactive Multimedia Lectora Inspire Problem Based On Science. *Journal of Physics: Conference Series*, 1485(1), 012036. <https://doi.org/10.1088/1742-6596/1485/1/012036>
- Irwandani, Umarella, S., Rahmawati, A., Meriyati, & Susilowati, N. E. (2019). Interactive Multimedia Lectora Inspire Based on Problem Based Learning: Development in The Optical Equipment. *Journal of Physics: Conference Series*, 1155, 012011. <https://doi.org/10.1088/1742-6596/1155/1/012011>
- Kang, S., & Kim, Y. (2021). Examining the quality of mobile-assisted, video-making task outcomes: The role of proficiency, narrative ability, digital literacy, and motivation. *Language Teaching Research*, 136216882110479. <https://doi.org/10.1177/13621688211047984>
- Kurniawan, R. B., Mujaam, M., Yusuf, I., & Widyaningsih, S. W. (2019). Development of physics learning media based on Lectora Inspire Software on the elasticity and Hooke's law material in senior high school. *Journal of Physics: Conference Series*, 1157, 032022. <https://doi.org/10.1088/1742-6596/1157/3/032022>
- Le Berre, C., Sandborn, W. J., Aridhi, S., Devignes, M.-D., Fournier, L., Smail-Tabbone, M., Danese, S., & Peyrin-Biroulet, L. (2020). Application of Artificial Intelligence to Gastroenterology and Hepatology. *Gastroenterology*, 158(1), 76-94.e2. <https://doi.org/10.1053/j.gastro.2019.08.058>
- Mangaroska, K., & Giannakos, M. (2019). Learning Analytics for Learning Design: A Systematic Literature Review of Analytics-Driven Design to Enhance Learning. *IEEE Transactions on Learning Technologies*, 12(4), 516–534. <https://doi.org/10.1109/TLT.2018.2868673>
- McGuinness, C., & Fulton, C. (2019). Digital Literacy in Higher Education: A Case Study of Student Engagement with E-Tutorials Using Blended Learning. *Journal of Information Technology Education: Innovations in Practice*, 18, 001–028. <https://doi.org/10.28945/4190>

- Morse, J. S., Lalonde, T., Xu, S., & Liu, W. R. (2020). Learning from the Past: Possible Urgent Prevention and Treatment Options for Severe Acute Respiratory Infections Caused by 2019-nCoV. *ChemBioChem*, 21(5), 730–738. <https://doi.org/10.1002/cbic.202000047>
- Moto, M. M. (2019). Pengaruh Penggunaan Media Pembelajaran dalam Dunia Pendidikan. *Indonesian Journal of Primary Education*, 3(1), 20–28. <https://doi.org/10.17509/ijpe.v3i1.16060>
- Reffiane, F., Iswari, R. S., & Marwoto, P. (2019). The effectiveness of Lectora Inspire media assisted guided inquiry method on the students' critical thinking skill in the science nature: A case study at gugus Diponegoro elementary schools Semarang. *Journal of Physics: Conference Series*, 1170, 012078. <https://doi.org/10.1088/1742-6596/1170/1/012078>
- Shalikhah, N. D., Sari, K. P., Iman, M. S., Oktradiksa, A., Nugroho, I., & Aufa, M. (2023). Utilization Kinemaster in making learning videos for elementary school teachers. 020045. <https://doi.org/10.1063/5.0125788>
- Sieck, C. J., Sheon, A., Ancker, J. S., Castek, J., Callahan, B., & Siefer, A. (2021). Digital inclusion as a social determinant of health. *Npj Digital Medicine*, 4(1), 52. <https://doi.org/10.1038/s41746-021-00413-8>
- Solomon, D. H., & Rudin, R. S. (2020). Digital health technologies: Opportunities and challenges in rheumatology. *Nature Reviews Rheumatology*, 16(9), 525–535. <https://doi.org/10.1038/s41584-020-0461-x>
- Sriwahyuni, I., Risdianto, E., & Johan, H. (2019). Pengembangan Bahan Ajar Elektronik Menggunakan Flip Pdf Professional Pada Materi Alat-Alat Optik Di Sma. *Jurnal Kumparan Fisika*, 2(3), 145–152. <https://doi.org/10.33369/jkf.2.3.145-152>
- Tieman, M. (2020). Measuring corporate halal reputation: A corporate halal reputation index and research propositions. *Journal of Islamic Marketing*, 11(3), 591–601. <https://doi.org/10.1108/JIMA-05-2018-0095>
- Tubagus, M., Muslim, S., & Suriani, S. (2020). Development of Learning Management System-Based Blended Learning Model using Claroline in Higher Education. *International Journal of Interactive Mobile Technologies (IJIM)*, 14(06), 186. <https://doi.org/10.3991/ijim.v14i06.13399>
- Van Deursen, A. J. (2020). Digital Inequality During a Pandemic: Quantitative Study of Differences in COVID-19–Related Internet Uses and Outcomes Among the General Population. *Journal of Medical Internet Research*, 22(8), e20073. <https://doi.org/10.2196/20073>
- Van Workum, F., Stenstra, M. H. B. C., Berkelmans, G. H. K., Slaman, A. E., Van Berge Henegouwen, M. I., Gisbertz, S. S., Van Den Wildenberg, F. J. H., Polat, F., Irino, T., Nilsson, M., Nieuwenhuijzen, G. A. P., Luyer, M. D., Adang, E. M., Hannink, G., Rovers, M. M., & Rosman, C. (2019). Learning Curve and Associated Morbidity of Minimally Invasive Esophagectomy: A Retrospective Multicenter Study. *Annals of Surgery*, 269(1), 88–94. <https://doi.org/10.1097/SLA.0000000000002469>
- Wahyuningtyas, D., & Okimustava, O. (2023). Media Pembelajaran Berbasis Android Guna Penunjang Belajar Siswa Di Era Society 5.0. *Semnas Ristek (Seminar Nasional Riset Dan Inovasi Teknologi)*, 7(1), 750–755. <https://doi.org/10.30998/semnasristek.v7i1.6410>

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