PROJECT-BASED LEARNING WITH POWTOON VIDEO: ENHANCE CRITICAL THINKING SKILLS IN CLASS V IPAS LEARNING

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Abstract
The background of this study stems from the observation that teaching methods, such as problem-based learning using PowerPoint, tend to be less engaging and fail to optimally develop students' critical thinking abilities. This study aims to analyze the effectiveness of applying the Project Based Learning model supported by Powtoon interactive video media on students' critical thinking skills on water cycle material in elementary schools. The method used was a quasi-experiment with a Non Equivalent Control Group design, involving two classes of 25 students each. The research instrument consisted of pre-test and post-test questions that had been tested for validity and reliability. The results showed that the application of the Project Based Learning model supported by Powtoon significantly improved students' critical thinking, especially in interpretation, analysis, evaluation, inference, explanation, information relate to the water cycle. In the results of Cosen's D analysis, the project-based learning model with powtoon video media has a very significant increase compared to the problem-based model with PPT media on students' critical thinking skills, this shows an effect size of 1.182 which means a very large influence.

Keywords*:* Project Based Learning, Powtoon, Critical Thinking, IPAS

INTRODUCTION

Learning models have a crucial role in teaching and learning activities, because they can increase effectiveness and efficiency in the learning process. Learning models must be designed in an active and interactive way to support students to think critically and creatively. one of the effective learning models such as the Project Based Learning model that greatly contributes to encouraging student activeness and deepening their understanding of concepts related to everyday life [1]. In line with opinion [2] that the PjBL model is meaningful learning by actively involving students, facilitating their creative thinking skills, and creating fun learning. The PjBL learning model is expected to help students collaborate in using their skills and knowledge to solve a problem actively.

Learning media becomes a learning resource that makes the learning process more interesting, interactive and effective. Learning media should be creative, relevant, and in line with

[1] Everhard Markiano Solissa et al., "Analisis Implementasi Metode Pembelajaran Berbasis Proyek Dalam Meningkatkan Prestasi Belajar Di Sekolah Dasar," *Al-Madrasah Jurnal Pendidikan Madrasah Ibtidaiyah* 8, no. 2 (2024): 558, https://doi.org/10.35931/am.v8i2.3284.
[2] Prasetyo, (2019)

students' needs. The use of media such as images or audio can help evoke student memory because it tends to be easier to remember than just plain text. Powtoon video media plays an important role because it is made with IT-based which is used as a learning media that presents several features to make presentations interesting for students [3]. Powtoon video is an interactive learning media so that learning becomes fun and not boring for students. Powtoon media can be accessed on the web online or offline [4]. By utilizing this learning media, it can increase the effectiveness of learning by making the material more interesting, relevant, and easily understood by students. This powtoon video anyone can make it attractive with a professional look and feel, in order to improve student understanding of learning materials [5].

Critical thinking ability is an important skill for every individual, especially elementary school students, to prepare students to face various challenges and obstacles in the future. Critical thinking skills not only support academic achievement, but also become the main foundation for success in various fields of life. Critical thinking is not just an intellectual process, but also a foundation in decision making, in-depth analysis, and the development of productive creativity. Critical thinking skills are very important in various fields, especially in education and everyday life. Critical thinking skills can help individuals to improve their learning ability, solve problems more effectively, and make wiser decisions [6]. Critical thinking is an important ability in dealing with a problem, because it can help students improve skills in identifying, analyzing, and finding the right solution. In addition, critical thinking also trains students in asking, answering, and expressing opinions from an existing problem [7]. The purpose of critical thinking is to achieve deep understanding [8].

However, observations and interviews at SDN Tulip 1 show that many students still experience difficulties in critical thinking. The application of problem-based learning models that have been used so far still tend to be textbook-based and conventional problem solving, making it less effective in building active involvement and deeper understanding. Teachers generally use problem-based models with PPT media in learning, but this method is still passive and less interactive, so it is not able to encourage students to analyze, evaluate, and interpret information critically. Teachers also have not utilized learning media optimally, which has an impact on low student motivation and participation. Based on the IPAS test results, only 52% of students achieved scores above the Minimum Completion Criteria (KKM), while the other 48% did not meet the standards. Therefore, it is necessary to implement a more active and fun learning model and utilize learning media to help students develop critical thinking skills and deeper understanding.

The PjBL model is one of the meaningful learning methods that actively involves students and facilitates creative thinking skills, as well as creating a fun learning atmosphere. Through PjBL students are trained to solve problems, make decisions, conduct investigations, and produce work to help solve problems [9]. Project-based learning allows students to explore the material in a

[3] Zulfah Anggita, "Penggunaan Powtoon Sebagai Solusi Media Pembelajaran Di Masa Pandemi Covid-19," *Konfiks Jurnal Bahasa Dan Sastra Indonesia* 7, no. 2 (2021): 44–52, https://doi.org/10.26618/konfiks.v7i2.4538.
[4] Nur Indah Sholikhati and Nia Astuti, "Peningkatan Kualitas Pembelajaran Dengan Media Powtoon," *ENGAGEMENT: Jurnal Pengabdian Masyarakat* 2, no. 2 (2023): 78–84, https://doi.org/10.58355/engagement.v2i2.26.
[5] W. E Hardiyanti et al., "Pelatihan Pembuatan Video Animasi Gambar 'Powtoon' Bagi Guru Paud," *Indonesia Jl. Kapt. Piere Tendean* 3, No. 2 (2020): 93563.
[6] Salsa Novianti Ariadila et al., "Analisis Pentingnya Keterampilan Berpikir Kritis Terhadap Bagi Siswa," *Jurnal Ilmiah Wahana Pendidikan* 9, no. 20 (2023): 664–69.
[7] Sholikhati and Astuti, "Peningkatan Kualitas Pembelajaran Dengan Media Powtoon."
[8] A. S. Egok, "Kemampuan Berpikir Kritis Dan Kemandirian Belajar Dengan Hasil Belajar Matematika," *Jurnal Pendidikan Dasar* 7, no. 2 (2016): 186–99.
[9] Prasetyo, "Pentingnya Model Project Based Learning Terhadap Pemahaman Konsep Di IPS."

meaningful way according to their understanding, while encouraging them to experiment collaboratively. [10]. Projects are not only in groups but can be done independently to create and produce a work [11]. Project-based learning places students as the center of learning activities (Student Centered), while the teacher acts as a motivator and facilitator. In this approach, students are given the freedom to work independently in building their own understanding [12].

The role of technology is also increasingly important for the learning process. Powtoon is one of the IT media that is used as a medium for delivering learning material in an interesting way so that students are not bored with the material the teacher conveys [13]. Powtoon media not only makes learning more interesting, but also facilitates the delivery of complex material in a simple and visual way [14]. Powtoon is an audiovisual-based media available online to create presentations with attractive animation features, such as handwriting animation, cartoon animation, dynamic transition effects, and easy-to-use timeline settings. [15]. The advantages of using powtoon media can present the material to be more interesting and it is hoped that students can understand it more quickly, there are various animation features and interesting transition effects, using the application is very easy and does not require complicated steps, the duration of the video can be adjusted as desired so that it is not too long and does not bored students [16]. The use of powtoon also has advantages according to [17] including: 1) Easy to use and can be accessed directly through the website without the need to download the application from Playstore. 2) Provides a wide selection of templates that allow users only to add images, text, audio, and video as teaching materials. 3) Equipped with animations, various font types, and transition effects. 4) Offers an attractive, interactive, and dynamic display. 5) The results can be saved in MPEG, MP4, AVI, or directly shared to YouTube.

Learning can run optimally if there is active participation from students. A fun learning process can foster understanding and improve students' critical thinking skills. Critical thinking helps students to become more independent in their thinking, allowing students to overcome challenges and problems with more confidence [18] Critical thinking is a thinking process in solving problems by using reasoning to obtain valid and accountable conclusions [19]. Critical thinking skills in the learning process consist of three main stages, namely the problem recognition stage, the

[10] Neza Agusdianita et al., "Penerapan Model Pembelajaran Pjbl Untuk Meningkatkan Hasil Belajar Mahasiswa Pada Perkuliahan Pengembangan Pembelajaran Tematik," *Jurnal Pembelajaran Dan Pengajaran Pendidikan Dasar* 6, no. 1 (2023): 43–49, https://doi.org/10.33369/dikdas.v6i1.24617.

[11] Natty et al., 2019)

[12] Surya et al., 2018)

[13] Nidar Yusuf, Dewi Setiyaningsih, and Nanda Giyatri Lestari, "Prosiding Seminar Nasional Penelitian LPPM UMJ Website: Http://Jurnal.Umj.Ac.Id/Index.Php/Semnaslit E-Efektivitas Penggunaan Media Pembelajaran Audiovisual Powtoon Dalam Meningkatkan Motivasi Belajar Siswa Kelas 1 Di SDN Bambu Apus 02," *Prosiding Seminar Nasional Penelitian LPPM UMJ*, 2021, 1–8.

[14] Erlina Kusnul Kotimah, "Efektivitas Media Pembelajaran Audio Visual Berupa Video Animasi Berbasis Powtoon Dalam Pembelajaran IPA," *Jurnal Pelita Ilmu Pendidikan* 2, no. 1 (2024): 1–18.

[15] Nurul Latifah and Lazulva, "Desain Dan Uji Coba Media Pembelajaran Berbasis Video Animasi Powtoon Sebagai Sumber Belajar Pada Materi Sistem Periodik Unsur," *Al Intaj: Jurnal Ekonomi Dan Perbankan Syariah* 6, no. 2 (2020): 159.

[16] Arie Rahmawati, "Kelebihan Dan Kekurangan Powtoon Sebagai Media Pembelajaran," *Jurnal Ilmiah Kependidikan* 17, no. 1 (2022): 1–8.

[17] Fitriyani, (2019)

[18] Ningsih & Rizki, 2021)

[19] Nuqthy Faiziyah and Bagas Legowo Priyambodho, "Analisis Kemampuan Berpikir Kritis Dalam Menyelesaikan Soal Hots Ditinjau Dari Metakognisi Siswa," *AKSIOMA: Jurnal Program Studi Pendidikan Matematika* 11, no. 4 (2022): 2823, https://doi.org/10.24127/ajpm.v11i4.5918.

information gathering stage, and the decision-making stage [20]. According to [21] Indicators of critical thinking include: 1) Interpretation, 2) Analysis, 3) Evaluation, 4) Inference, 5) Explanation, and 6) Self-regulation. The level of students' critical thinking skills is influenced by various factors according to [22] One of the factors that affect critical thinking skills is internal factors, which include: 1) physical condition, 2) motivation to learn, 3) anxiety, 4) intellectual development, and 5) interaction.

Research from [23] Proving that the use of Project Based Learning models can improve students' critical thinking skills at the elementary school level. In line with the research of [24] ; [25] ; dan [26] show that students' critical thinking can increase by applying project-based learning, but the research has not measured project learning with the help of powtoon interactive videos in water cycle material. While research from [27]; [28]; [29]; [30] with an innovative digital media-assisted learning process, such as powtoon, can improve students' critical thinking skills in elementary schools, but these studies have not applied innovative and creative learning models such as project-based learning models.

Previous research shows that the application of Project-Based Learning (PjBL) assisted by interactive digital media can improve students' critical thinking skills. This model allows students to be more involved in learning, develop a deeper understanding, and train them to solve problems actively. Powtoon as an audiovisual-based media can support project-based learning by presenting material in a more interesting, dynamic, and easy-to-understand manner. Therefore, This research is to analyze how effective the use of Project-Based Learning models assisted by Powtoon media is in improving the critical thinking skills of elementary school students on water cycle material. This research is expected to be the basis for further studies regarding the effectiveness of the Project Based Learning model with Powtoon video media on other materials besides the water cycle.

RESEARCH METHODS

This type of research uses quantitative experimental research. The type of research used is quasi-experiment. A quasi-experiment is a design that is conducted without randomization, but involves the placement of participants into groups. The quasi-experimental approach used was Non-Equivalent Control Group Design by comparing control and experimental classes by giving pretest and postest in the form of multiple choice and description. Data taken as research students in grades VA and VB of Tulip 1 State Elementary School, totaling 25 students each. The class was treated (Experiment) using the Project Based Learning Model with Powtoon interactive video media and while the group without treatment (control) used ordinary presentation media or PPT.

[20] H. Budiono and A. Utomo, "Strategi Guru Dalam Mengembangkan Keterampilan Berpikir 17Kritis (Critical Thingking) Pada Pembelajaran Tematik Terpadu Kelas V Sekolah Dasar.," *Journal of the European Academy of Dermatology and Venereology* 5, no. 3 (2020): 138–145.
[21] Facione, (2011)
[22] Prameswari et al., (2018)
[23] Ratno et al., (2022)
[24] Fitriani et al., (2019)
[25] L. Fitriani & Istianti, (2017)
[26] Herlina et al., (2022)
[27] Wahyuni & Fitria, (2023)
[28] Sae & Radia, (2023)
[29] Laksono et al., (2021)
[30] Kotimah, (2024)

The data collection techniques used are pre-test and post-test questions. In the critical thinking question indicator to get the validity of the question tested in class VI to test its validity and reliability, after getting a valid question instrument will be used as a pre-test in the experimental class and control class.

RESEARCH RESULTS AND DISCUSSION

Before implementing the research instrument, a validity test was conducted to ensure that each item used was able to measure students' critical thinking skills appropriately and in accordance with the research objectives. The validity results of the critical thinking question indicators can be seen in the table below:

Table 1. Question validity test

Question items	Value r count	Value r table	Status
1	0,376	0,396	Invalid
2	0,457		Valid
3	0,414		Valid
4	0,449		Valid
5	0,449		Valid
6	0,414		Valid
7	0,389		Invalid
8	0,492		Valid
9	0,519		Valid
10	0,376		Invalid
11	0,525		Valid
12	0,414		Valid
13	0,342		Invalid
14	0,448		Valid
15	0,408		Valid
16	0,770		Valid
17	0,789		Valid
18	0,555		Valid
19	0,656		Valid
20	0,628		Valid
21	0,451		Valid

The results of the instrument test of multiple choice questions consisting of 15 questions and description questions as many as 6 questions showed that 11 multiple choice questions were

declared valid, while 4 other questions were invalid. Meanwhile, all 6 description questions were declared valid with a significance value> 0.396. Therefore, valid questions will be used in the research, while invalid questions will be removed from the instrument. After the validity test, the instrument will be tested for reliability, as listed in the table below.

Table 2. Reliability test

Learning Outcomes Instrument	
Crombach's Alpha	**N Item**
.651	11
.724	6

With an r-table value of 0.396 on the critical thinking ability instrument, the test reliability measurement results listed in Table 2 show that Cronbach's Alpha for multiple choice questions is 0.651 and for description questions is 0.724, both of which are classified as reliable. In giving the pre-test to the experimental class and control class, the researcher gave treatment to the experimental class and no treatment to the control class, then conducted a post-test with the same questions as the pre-test. The results of the two groups were analyzed using SPSS version 25 for normality test, homogeneity, hypothesis test, and cohen's D. Normality test was conducted using Shapiro-Wilk, homogeneity test using F test, and hypothesis test was conducted with t-test on normally distributed data. The t-test is used to test whether there is a significant difference between the predicted value and the results of statistical calculations, with a significance level <0.05. This t-test is used to analyze the effect of using the Project Based Learning model on students' critical thinking skills supported by Powtoon interactive video media.

The criteria for the t-test hypothesis in this study are if t count < t table, then H0 is rejected and H1 is accepted, which means that there is an effect of using the Project Based Learning model on students' critical thinking skills assisted by Powtoon interactive video media. Conversely, if t count > t table, then H0 is accepted and H1 is rejected, which indicates that there is no effect of using the Project Based Learning model on students' critical thinking skills with the help of Powtoon interactive video media.

The normality test was carried out using the Shapiro-Wilk formula at a significance level of 0.05. The following are the results of the normality test calculation:

Tabel 3. Normality Test

Test Name	Group	Significance Value	α
Pre-Test	Eksperimen	0,507	0,05
	Control	0,299	
Post-Test	Eksperimen	0,064	0,05
	Control	0,396	

Based on Table 3, the significance values for the experimental class pre-test and post-test are 0.507 and 0.064. Meanwhile, the significance values for the pre-test and post-test of the control class are 0.299 and 0.396. Since the significance values for both classes are greater than 0.05, it can be concluded that the experimental and control classes are normally distributed.

Tabel 4. Homogeneity Test

Data 1	Data 2	Significance Value	α
Pre-test eksperiment	Pre-test control	0,834	0,05
Post-test eksperiment	Post-test control	0,325	0,05
Pre-test eksperiment	Post-test eksperiment	0,606	0,05

The results of table 4 show that the significance value meets the sig.>0.05 requirement so the conclusion of the experimental class and control class data variance is homogeneous.

1. Independent test

An independent test is a type of statistical test used to compare the means of two unrelated groups. This test can be applied to test hypotheses on pre-test and post-test data from the experimental class, as well as pre-test and post-test data from the control class.

Pre-test independent test

H0 = There is no difference in the average pre-test between the experimental class using the Project Based Learning model with Powtoon interactive media and the control class using the conventional model with PPT media. ($\mu 1 = \mu 2 = \mu i = \mu j$)

H1 = There is a difference in the average pre-test between the experimental class using the Project Based Learning model with Powtoon interactive media and the control class using the conventional model with PPT media. ($\mu i \neq \mu j \ , i \neq j$)

Tabel 5. Pre-test independent T-test

Sig. (2-tailed)	Significance Level (α)	status
0,814	0,05	H_0 accepted

Based on the results of the calculation of the independent t-test test on the pre-test, the sig. (2-tailed) of 0.814 which is greater than 0.05. Therefore, based on the hypothesis H0 is accepted and H1 is rejected, which means that there is no difference in the average pre-test between the experimental class using the Project Based Learning model with Powtoon interactive media and the control class using the conventional model with PPT media. For more information about the average post-test of the experimental class and control class, see table 6.

Post-Test Independent T Test

H0 = There is no difference in the average post-test between the experimental class using the Project Based Learning model with Powtoon interactive media and the control class using the conventional model with PPT media. ($\mu 1 = \mu 2 = \mu i = \mu j$)

H1 = There is a difference in the average post-test between the experimental class using the Project Based Learning model with Powtoon interactive media and the control class using the conventional model with PPT media. ($\mu i \neq \mu j$,$i \neq j$)

Tabel 6. Post-test independent T-test

Sig. (2-tailed)	Significance Level (α)	status
0,001	0,05	H_0 rejected

Based on the results of the independent t-test calculation, the sig value is obtained. (2-tailed) of 0.001 which is smaller than 0.05. Therefore, based on the hypothesis, H0 is rejected and H1 is accepted, which means that there is a difference in the average post-test between the experimental class using the Project-based learning model with Powtoon interactive media and the control class using the conventional model with PPT media.

2. Dependent Hypothesis Test

This test is used to compare two interrelated groups on the same subject. This test aims to determine whether there is a significant difference in the use of the Project Based Learning model assisted by Powtoon interactive media on students' critical thinking skills.

H0 = There is no difference between the pre-test and post-test in the use of the Project Based Learning model with Powtoon interactive media on students' critical thinking skills. (μ1=μ2)

H1 = There is a difference between the pre-test and post-test in the use of the Project Based Learning model with Powtoon interactive media on students' critical thinking skills. ($\mu 1 \neq \mu 2$)

Tabel 7. Uji T Dependent Pre-test dan Post-test

Sig. (2-tailed)	Significance Level (α)	status
0,000	0,05	H_0 rejected

Based on the results of the sig value. (2-tailed), the pre-post experimental results were obtained at 0.000 which is smaller than 0.05. Thus, it can be concluded that H0 is rejected and H1 is accepted, which means that there is an influence between the pre-test and post-test regarding the use of the Project-based learning model with Powtoon interactive media on students' critical thinking skills.

3. Cohen's D

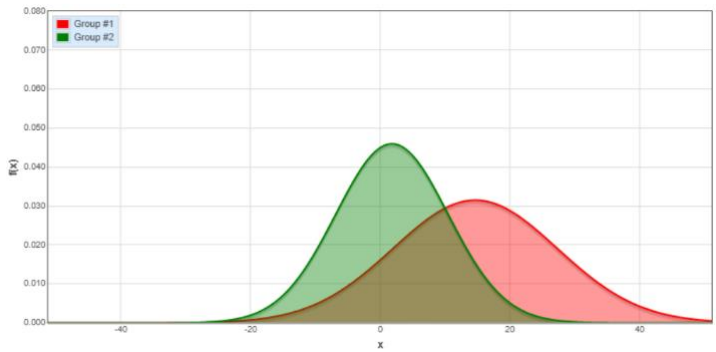
Cohen's D is an effect size measure used to determine how much difference there is between two groups in a study. From the calculations that have been carried out, the cohen d value is 1.182 which is calculated using a mean value of 14.640 with a standard deviation of 12.672, while the mean value of 2 is 1.800 with a standard deviation of 8.684. So for decision making can be seen in the table in this answer.

Tabel 8. Katagori ES Cohen's D

Effect Size	Category

d > 0,8	Very large
0,5 < d ≤ 0,8	Large
0,2 < d ≤ 0,5	Moderate
0 < d ≤ 0,2	Small

The results of the calculation of cohen,s d obtained 1.182 which is included in the category greater than 0.8. This shows that the peoject-based learning model with the help of powtoon media has a very big influence on the critical thinking skills of elementary school students. The graph can be seen in the picture below.



Picture 1. Effect size graph

Based on this graph, it can be concluded that the green-colored class, the class that received the treatment had a significant effect on students' critical thinking skills, while the red-colored class did not get the treatment.

The results of this study indicate that the application of the Project-Based Learning (PjBL) model assisted by Powtoon media is effective in improving students' critical thinking skills on water cycle material in elementary schools. This is evidenced by the significant difference between the experimental class and the control class, where the class that used PjBL with Powtoon experienced a higher increase in critical thinking skills compared to the problem-based learning model that only used PPT media. Thus, it can be concluded that the integration of Powtoon media in the PjBL model creates more interactive and meaningful learning, so that it can support the development of students' critical thinking skills more effectively.

The Project Based Learning model with the help of powtoon interactive media provides active and fun learning. The project-based learning model allows teachers to manage learning in the classroom by involving students to work together with their groups in completing a project (Nisfa et al., 2022). Through the project, students can discuss their ideas with the help of powtoon interactive video shows that contain problems to work on a project. This model can also motivate students to gain the best experience about the task or project given. Students are given the opportunity to design projects according to their own creativity (Gunawan et al., 2019)

With Powtoon media, teachers can more easily convey material, so that it can increase students' interest in participating in learning and develop students' critical thinking skills. According to Febriani Putri, (2021) using powtoon media in learning, students tend to be more active and enthusiastic in receiving material that is packaged with audiovisuals.

This Project Based Learning model with Powtoon learning media helps students to improve the critical thinking skills of grade V students. In line with the results of research conducted by Widyaningrum, (2023) That the application of the project-based learning model with the help of Powtoon media has a significant effect on the learning outcomes of IPAS grade V elementary school students. Research conducted by Anissa & Hastuti, (2021) that the use of a project-based learning model using powtoon in learning history shows the results that the use of powtoon media makes learning more interesting and can be efficiently applied in learning.

From research conducted by Rizki et al., (2022) So it can be concluded that the development of powtoon animation-based learning videos using the ADDIE development model on grade IV elementary school science material is declared valid, practical, and effective in supporting the learning process. In addition, the results of research Sanjaya et al., (2021) based on the analysis of powtoon application-based learning video media on grade VI solar system material are valid and feasible to use to overcome low student motivation in learning. In contrast to the results of research conducted by Maesaroh et al., (2024) it can be concluded that the Project Based Learning model can increase student creativity such as covering aspects of fluency, flexibility, originality, and collaboration on water cycle material in elementary school students. Research from Song et al., (2024) Project-Based Learning (PBL), characterized by its integration of real-world challenges and emphasis on collaborative learning, demonstrates significant potential to positively influence the development of Critikal Thinking in English as a Foreign Language (EFL) learners.

In previous research, it discussed and examined the effectiveness of powtoon media in increasing student motivation and understanding, as well as the advantages of project-based learning in developing creativity and critical thinking in students. However, the research conducted here discusses that the combination of the Project Based Learning model with Powtoon media is more effective in improving the critical thinking skills of elementary school students, especially on water cycle material. Therefore, this research makes a new contribution in the field of education, especially in the utilization of digital technology in project-based learning models to improve students' critical thinking skills.

Before the project-based learning model with powtoon media was implemented to improve students' critical thinking skills, this study consisted of three main steps, namely pre-test, treatment, and post-test. The pre-test was given to two groups, namely the experimental group and the control group, to measure their initial abilities. The final step was to give a post-test to both classes to evaluate the development of their learning abilities. From the results of statistical analysis using Effect Size (cohen's d) calculator and SPPS version 25 shows there is a significant increase in critical thinking skills with a significance value (2-tailed) of $0.000 < 0.05$ when using a project-based learning model assisted by powtoon media. Cosen's D is used to measure how much a model and media used increases. In the analysis, the project-based learning model with powtoon video media has a very significant increase compared to the problem-based model with PPT media on students' critical thinking skills, this shows an effect size of 1.182 which means a very large effect.

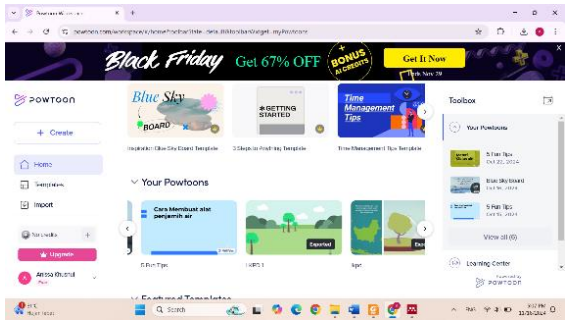
The core learning activities apply the steps in the Project Based Learning learning model, according [31] including: 1) Presentation of Problems, this stage the teacher presents problems to students where they are asked to design and make props that can illustrate the existing problems. 2) Making a plan, after understanding the problem, learners are asked to plan their project which includes formulating ideas, designing props, and identifying a problem. 3) Making a schedule, learners plan a schedule. They set a deadline to solve the problem. 4) Monitoring the project, Learners start working on their project with guidance from the teacher and provide feedback, and

[31] Ayuninrum & Saputra, (2024)

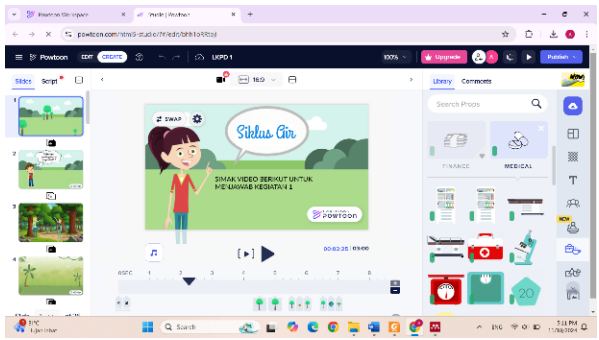
ensure that the project goes according to plan. 5) Assessment, make a presentation of the project creation that has been made. 6) Evaluating, after the project is complete, students and teachers reflect on the learning process that has taken place. They evaluate the success of the project, identify what has been learned, obstacles faced, and improvements that can be made in the future.

The first step, students observe Powtoon animation videos that present problems related to everyday life. Furthermore, after completing the observation, students discuss with their respective groups to complete the LKPD by starting to design the project to be done, setting a schedule / target for completing the project. In this step, the teacher guides and ensures that the project runs smoothly. After all groups have completed their projects, students present the results. In the final stage, students and teachers evaluate and reflect on the projects that have been made. In 1x meeting has 2 x 35 minutes, where each meeting has a project for making water cycle dioramas, making posters and making water purification devices.

The following Powtoon learning media is used in class V water cycle material that can attract students' attention to understand problems related to everyday life. With the Powtoon video, students are more understanding and enthusiastic.



Picture 2. The initial application view of Powtoon media



Picture 3. Powtoon content display

The results further demonstrate that the Project Based Learning model with Powtoon interactive media is an effective approach to enhancing critical thinking skills in fifth-grade students on water cycle material. This approach made the learning process in the experimental class more engaging, enjoyable, and meaningful, leading to a positive impact on the development of students' critical thinking skills.

CONCLUSION

Based on the results of the study, the application of the Project-Based Learning model with Powtoon interactive video media proved effective in improving students' critical thinking skills on

water cycle material in elementary schools. The results of the analysis show that the experimental class using the Powtoon-assisted PjBL model experienced a more significant increase in critical thinking skills compared to the control class using the problem-based method with PPT media. Quantitative data supports this finding, where the effect size obtained a result of 1.182, which means that the model and media used have a very large influence on critical thinking skills. while the t-test results also show a significant difference between the experimental and control groups of 0.000<0.05, which indicates the effectiveness of the PjBL model with Powtoon in improving students' critical thinking skills.

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