



# Development of Prezi-Based KOH Link Learning Media in Elementary School Science Lessons

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**Abstract:** The background of this research is because the Prezi application-based KOH Link learning media has not yet been developed in science learning. In the learning process, the teacher already uses learning media but is less creative, while at school the facilities and infrastructure are adequate, such as LCD projectors. This study aims to determine the process of developing prezi-based KOH Link learning media products, to determine the level of effectiveness of learning media. This type of research is research and development (research and development) of the Four-D model which consists of defining, designing, developing, and disseminating. Data collection techniques are carried out by carrying out effectiveness. Data analysis techniques are performed by calculating the average value of the results of effectiveness. The results showed that classical completeness was 81.48% with very good criteria and student responses obtained an average of 3.7 with very positive criteria. Thus, it can be concluded that the Prezi-based KOH Link learning media in classifying animals based on the type of food is very effective as one of the media in science subjects.

**Keywords:** Development; Four D; Learning Media; Prezi.

## Introduction

The rapid development of science and technology has given rise to many new innovations. Because basically, technology uses science to solve problems and science uses technology to make new discoveries. Science and technology continue to experience development, with the help of sophisticated technology used to facilitate work, including in the field of education. Teachers are required to provide creative, innovative, and active learning in order to motivate students to study well. To encourage this in the learning process, you can use tools, in conveying information that is in accordance with learning theory, so that it can stimulate the attention, feelings, thoughts, and willingness of students, known as learning media (Poedjiastutie & Oliver, 2017). Learning media is not only useful for teachers in explaining teaching materials but also useful for the students themselves.

This learning media is able to build students' interest in learning and learning motivation because the material described is more systematic and attracts

students' attention to learning. The use of instructional media in explaining teaching materials can affect the improvement of student learning outcomes (Muhamad et al., 2023). One of the media that can streamline the teaching and learning process is media presentations. Based on the results of observations in class V during the PPL activities in November 2021 at SD Negeri 30 Kendari, it can be seen that the majority of students think that science subjects are difficult because the learning media used is still limited. This is shown from the attitude of students who are less enthusiastic, interested in learning, and learning motivation in attending lessons, and this can also be seen from the behavior of students who often go in and out of class and even disturb their friends. In addition, the media used does not focus the attention of students and does not support the teaching and learning process, where the teacher still uses media images from books.

This was also found in previous research which stated that in the learning process, most teachers were only fixated on textbooks as a source of teaching and learning (Poedjiastutie & Oliver, 2017). A similar

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problem was also found in a previous study conducted by (Goldberg et al., 2021) which stated that the weak science learning process was carried out by the teacher because the implementation of the learning process was one-way and students still memorized science materials. Apart from that, the facts that occur in the field, sometimes in the learning process the teacher uses PowerPoint-based media in the learning process, but not many students come to the front of the class because the pictures look small and are not clear (Paramasti Ratu & Komara, 2021). This causes the learning process not to run effectively. A teacher should prepare learning media that provide convenience to students but the functions and objectives of learning media can be conveyed. In the learning process, the teacher has not used zoom media. Based on this, researchers can conclude that it is very necessary to develop a learning media containing a Zoom User Interface (Garini, 2022).

One application that has a Zoom User Interface, namely Prezi, facilitates the learning process and also focuses on learning, and learning motivation in attending lessons this can also be seen from the behavior of students who often go in and out of class and even disturb their friends. In addition, the media used does not focus the attention of students and does not support the teaching and learning process, where the teacher still uses media images from books. This was also found in previous research which stated that in the learning process most teachers were only fixated on textbooks as a source of teaching and learning (Poedjiastutie & Oliver, 2017). A similar problem was also found in a previous study conducted by (Goldberg et al., 2021) which stated that the weak science learning process was carried out by the teacher because the implementation of the learning process was one-way and students still memorized science materials.

Apart from that, the facts that occur in the field, sometimes in the learning process the teacher uses PowerPoint-based media in the learning process, but not many students come to the front of the class, because the pictures look small and are not clear (Paramasti Ratu & Komara, 2021). This causes the learning process not to run effectively. A teacher should prepare learning media that provide convenience to students but the functions and objectives of learning media can be conveyed. In the learning process, the teacher has not used zoom media. Based on this, researchers can conclude that it is very necessary to develop a learning media containing a Zoom User Interface (Garini, 2022). One application that has a Zoom User Interface, namely Prezi, facilitates the learning process and also focuses learning process to provide meaningful and enjoyable learning for each student. The prezi application, which is accessed online, also makes it easier for students to be able to access these learning media anytime and anywhere. In addition, especially for teachers, prezi learning media can be

repaired or used repeatedly, because the data is stored on the website (Moro et al., 2023).

Based on this description, it is very necessary to develop learning media that are interesting, creative, innovative and developed through the Prezi application so that it can increase interest in learning and be motivated in participating in the learning process and make it easy for teachers to explain teaching materials. Thus the researcher is interested in taking the research title "Development of KOH Link Learning Media Sharing Prezi in Class V Elementary School Science Lessons". The purpose of this study was to develop and design Prezi-based KOHLink learning media. The development procedure carried out in this study refers to the Four D (4D) development model, namely Define, Design, Development, and Disseminate.

## Method

This type of research is research and development (research and development) or what we usually know as R&D. According to (Sutton & Austin, 2015) research and development (R&D) is a research method used to produce or obtain a particular product and test the effectiveness of that product. R&D research is a type of research that develops and tests the effectiveness of a product. This research consists of quantitative data and qualitative data. Quantitative data contains the results of the effects seen from the learning outcomes using the prezi application-based KOHLink learning media. Qualitative data in the form of questionnaires and opinions of experts in validating learning media.

The purpose of this study was to develop and design Prezi-based KOH Link learning media. The development procedure carried out in this study refers to the Four D (4D) development model, namely Define, Design, Development, and Disseminate. Researchers chose this development model because the 4D model is a development model whose stages are in accordance with the needs of developing learning media (Gorbi Irawan et al., 2018). The Define stage aims to determine products that will develop prezi-based KOH Link learning media. At the Design stage, the aim is to design prezi-based KOH Link learning media. The Development stage aims to produce a final product that has been revised based on input from experts through validation and testing of prezi-based KOH Link learning media. The Dissemination stage aims to develop products on a wider scale, for example in classes or in different schools. However, due to the limited number of researchers, the trial of Prezi-based KOH Link learning media was limited to only being distributed to a few schools.

The data collection technique used is the validity test data from experts and the effectiveness test. Data

analysis also uses validity test data from experts and effectiveness tests (Dewi, 2022).

**Result and Discussion**

The stage for setting and defining learning requirements, researchers obtain information about the limitations of learning media in the learning process in class. The teacher carries out the learning process using conventional media such as pictures posted on the classroom wall and focuses on practice questions contained in the student's book or teacher's book. So that students are not facilitated with interesting and interactive learning media, so that the interest in learning and the motivation of students to learn science is still low. When viewed in terms of characteristics, the fifth grade students at SD Negeri 30 Kendari are on average 10-11 years old. If it is related to the stage of cognitive development according to (Rabindran & Madanagopal, 2020), then VA class students are at the Concrete Operational development stage while the abilities of students in this class are classified as heterogeneous. So that researchers compile material and goals that will be used to design learning media.

*Design Stage (Design)*

At this stage the researcher compiled a test that was adjusted to the level of cognitive ability. In addition to giving ability tests, students will also be given response questionnaires after learning using learning media (Syukri et al., 2018). In the initial design stage, the researchers developed KOH Link learning media based on the prezi application in science learning material grouping animals based on the type of food they eat. The results at this design stage are called prototype 1. In general, the results of the initial design of the KOH Link learning media consist of covers, an introduction of material and learning experiences, material for grouping animals based on the type of food, and giving quizzes after the material is explained.

*Stage Development (Development)*

After the KOH Link learning media was designed in the form of prototype 1, then the validity test was then carried out by experts. The validity test consists of material, media, and design validation tests. The results of the validation are in the form of validation values, criticisms, corrections, and suggestions which are used as a basis for revising and improving learning media (Tammilehto et al., 2021). The results of the validation of material experts with an overall average total score for material in learning media is 3.7 with the criteria of "very valid". The suggestions for improvement are:

**Table 1.** Suggestions for Improvement

Error	Improvement Suggestions
Lack of captions on the video	The description on the video is Complete



Video how to overeat a tiger



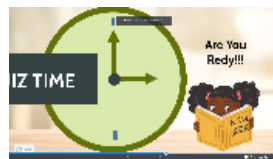
The video how to eat a tiger has been replaced



Typos



Fixed typing



Video how to overeat a tiger



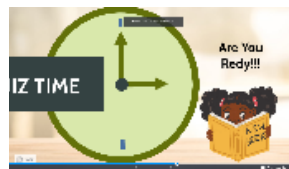
The video how to eat a tiger has been replaced



Typos



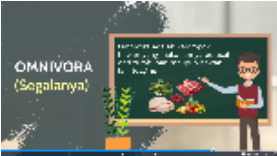

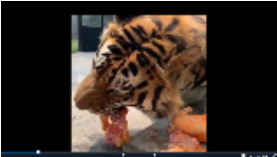



Fixed typing



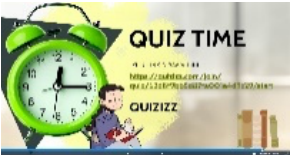
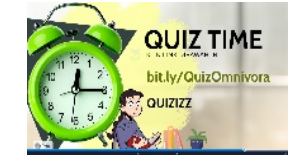
The results of the design expert validation are with an overall average total score for material in learning media of 3.8 with the criteria of "Very Valid". The suggestions for improvement are:

**Tabel 2.** Improvement suggestions

Error	Improvement suggestions
a. Media objects lack contrast with the background	Media object fixes
	
b. Improved image rotation	Improved image resolution
	
c. The video is still in portrait mode	Fix to landscape video
	

The results of the validation of media experts are the average total score for media in learning media of 3.8 with the criteria of "Very Valid". The suggestions for improvement are:

**Table 3.** Suggestion improvement

Error	Improvement suggestions
The website link is quite long on the media	Improved shortened website links
	

After the learning media developed met the validity criteria according to experts, then the KOH Link learning media was tested in the field where the research was conducted, namely VA class students at SD Negeri 30 Kendari with a total of 27 students. This trial was conducted in 3 meetings, in accordance with the lesson plan that had been made, to see the effectiveness of this media using test data on learning outcomes and students' responses to the KOH Link learning media.

**Tabel 4.** Ability Test Results

	Ability test scores		Enhancement
	Pretest	Posttest	
Average	40.81	86.44	45.63

The table shows the results of the science ability test on grouping animals based on the type of food in students before and after participating in learning using the prezi-based KOH Link learning media has increased. If seen from the average post-test test results experienced a significant increase to reach 86.4. And for the average increase in pretest and posttest scores reaches 45.6. Whereas for the classical test graduation presentation on KOH Link learning media material grouping animals based on the type of food is 81.48 with the criteria "Very Good".

**Tabel 5.** Student Response Results

No	No. student response statements							The number of each respondent	
	1	2	3	4	5	6	7		
Amount								189	705
The average of all respondents									3.73

In the response data of students to learning media, an average total score of the overall response of students to material in learning media was 3.7 with the criteria "Very Positive"

*Stage of Disseminate (Dissemination)*

The Disseminate stage is the final stage of development (Edwards, 2015). At this stage of dissemination, it was first distributed at SD Negeri 30 Kendari as a test site for prezi-based KOH Link learning media and was well received by the school principal. In addition, the researcher also distributed it to two schools and received it directly via a link sent via WhatsApp by the homeroom teacher for class V from SD Negeri 84 Kendari and SDS Pelangi so that KOH Link learning media products can be utilized in the learning and teaching process.

Research and development of prezi-based KOH Link learning media uses a 4D development model consisting of Define, Design, Development, and Disseminate. The final results obtained in this study were prezi-based KOH Link learning media in science learning. Through the process of validating material, design, and media, a Prezi-based KOH Link learning media was created. Despite all the limitations of the research, the results showed that the KOH Link learning media has aspects of media quality, as stated by (Adi et al., 2021) that a product developed is of high quality if it meets the criteria, namely effectiveness.

Prezi-based KOH Link learning media is said to be effective because the objectives formulated have been achieved. The intended goal is to achieve students with the minimum completeness criteria and there is a positive response from students to the prezi-based KOH Link learning media. The results of the student's ability tests after the application of the Prezi-based KOH Link learning media experienced an average increase of 40.8

to 86.4, so classical completeness was obtained at 81.48% with the criteria of "very good". This is supported by Ernayanti et al. (2019) who state that the media is said to be effective if the percentage of students' classical learning completeness reaches a minimum classification of good or  $\geq 60\%$ . According to (Sopian et al., 2021) which states that fun learning can be created through the learning media used. So that the use of KOH Link learning media in the learning process greatly influences the motivation of students to learn and improve the results of abilities.

More specifically research conducted by (Yunitasari et al., 2019) which concluded that learning uses media. This is reinforced by Agustina et al. (2022), that the implementation of development theory in learning, namely the cognitive development of children is different from that of adults. Therefore, teachers who teach using learning media must be adapted to the way children think. In terms of the development of children's thinking, researchers put more emphasis on children's cognitive development, namely researchers developed KOH Link learning media based on the concrete operational stage because elementary school age grade V is at the concrete operational stage. According to Rohmah et al. (2022), at this stage the child is mature enough to use logical or operational thinking, but only for existing physical objects. Referring to Piaget's theory, learning using the KOH Link learning media in elementary schools developed by researchers starts from concrete things to abstract things, namely getting to know animal groups based on the type of food to giving cases of grouping animals based on the type of food around the environment where they live.

## Conclusion

A prezi-based KOH Link learning media has been developed on animal grouping material based on the type of food in grade V elementary school using a four-D Research and development model consisting of define, design, development, and disseminate. The effectiveness of the prezi-based KOH Link learning media used in the learning process because it gives results of ability tests in the form of classical completeness 81.48% with the criteria of "very good" and very positive responses of students after participating in the learning process using learning media.

## References

- Adi, N. H., Wahdi, Y. W., Dewi, I. P., Lubis, A. L., & Trilidia, A. (2021). The Effectiveness of Learning Media as a Supporter of Online Learning in Computer Networking Courses. *Jurnal Teknologi Informasi dan Pendidikan*, 14(3), 278-283. Retrieved from <http://tip.pjj.unp.ac.id/index.php/tip/article/view/535>
- Agustina, R., Sudrajat, A., Setiawan, J., & Sudarwati, N. (2022). Development of Mind Mapping Based Prezi Multimedia to Improve History Learning Outcomes. *Ta'dib*, 25(2), 129. <https://doi.org/10.31958/jt.v25i2.6852>
- Dewi, I. G. A. A. O. (2022). Understanding Data Collection Methods in Qualitative Research: The Perspective of Interpretive Accounting Research. *Journal of Tourism Economics and Policy*, 1(1), 23-34. <https://doi.org/10.38142/jtep.v1i1.105>
- Edwards, D. J. (2015). Dissemination of Research Results: On the Path to Practice Change. *The Canadian Journal of Hospital Pharmacy*, 68(6). <https://doi.org/10.4212/cjhp.v68i6.1503>
- Ernayanti, S., Hadi, W., & Saragi, D. (2019). Feasibility of Audiovisual Media for Literacy Activities of Students of Grade V in Public Elementary School (SDN) 067241 Medan Denai. *Budapest International Research and Critics in Linguistics and Education (BirLE) Journal*, 2(2), 235-249. <https://doi.org/10.33258/birle.v2i2.293>
- Garini, W. (2022). Undergraduate Students' Voices of Learning English Through Online Application: Zoom Meeting Discussion. *Journal of Languages and Language Teaching*, 10(2), 276. <https://doi.org/10.33394/jollt.v10i2.4969>
- Goldberg, P., Schwerter, J., Seidel, T., Müller, K., & Stürmer, K. (2021). How does learners' behavior attract preservice teachers' attention during teaching? *Teaching and Teacher Education*, 97, 103213. <https://doi.org/10.1016/j.tate.2020.103213>
- Gorbi Irawan, A., nyoman Padmadewi, N., & Putu Artini, L. (2018). Instructional materials development through 4D model. *SHS Web of Conferences*, 42, 00086. <https://doi.org/10.1051/shsconf/20184200086>
- Hartini, S., Misbah, M., Dewantara, D., Oktovian, R. A., & Aisyah, N. (2017). Developing Learning Media Using Online Prezi into Materials about Optical Equipments. *Jurnal Pendidikan IPA Indonesia*, 6(2), 313. <https://doi.org/10.15294/jpii.v6i2.10102>
- Moro, C., Mills, K. A., Phelps, C., & Birt, J. (2023). The Triple-S framework: Ensuring scalable, sustainable, and serviceable practices in educational technology. *International Journal of Educational Technology in Higher Education*, 20(1), 7. <https://doi.org/10.1186/s41239-022-00378-y>
- Muhamad, R., Mahmud, M., & Bahsoan, A. (2023). The Use of Learning Media on Students' Learning Outcomes. *Journal of Economic and Business Education*, 1(1), 30-35. <https://doi.org/10.37479/jebe.v1i1.16925>
- Rohmah, N. N. S., Wilandari, M. D., & Darsinah, D. (2022). Teori Perkembangan Jean Piaget dan

- Implikasinya Dalam Perkembangan Anak Sekolah Dasar. *Jurnal Ilmiah Wahana Pendidikan*, 8(12), 230-239. <https://doi.org/10.5281/ZENODO.6944543>
- Paramasti Ratu, R., & Komara, C. (2021). An Analysis of Efl Students' Perception of Powerpoint Used as English Learning Media in Classroom. *Ellter Journal*, 2(1), 1-13. <https://doi.org/10.22236/ellter.v2i1.5370>
- Poedjiastutie, D., & Oliver, R. (2017). Exploring Students' Learning Needs: Expectation and Challenges. *English Language Teaching*, 10(10), 124. <https://doi.org/10.5539/elt.v10n10p124>
- Rabindran., & Madanagopal, D. (2020). Piaget's Theory and Stages of Cognitive Development- An Overview. *Scholars Journal of Applied Medical Sciences*, 8(9), 2152-2157. <https://doi.org/10.36347/sjams.2020.v08i09.034>
- Safi'i, A. (2022). Active Learning, Innovative, Creative, Effective and Fun, Happy and Quality (PAIKEM GEMBROT) Islamic Elementary School Miftahul Huda Plosokandang, Kedungwaru. *EDUTECH: Journal of Education and Technology*, 5(4), 1024-1031. <https://doi.org/10.29062/edu.v5i4.438>
- Sopian, A., Nandiyanto, A. B. D., Kurniawan, T., & Bilad, M. R. (2021). The Influence Use of SocialMedia on the Learning Motivation of Junior High School Students. *Indonesian Journal of Multidisciplinary Research*, 2(1), 137-142. <https://doi.org/10.17509/ijomr.v2i1.38662>
- Sutton, J., & Austin, Z. (2015). Qualitative Research: Data Collection, Analysis, and Management. *The Canadian Journal of Hospital Pharmacy*, 68(3). <https://doi.org/10.4212/cjhp.v68i3.1456>
- Syukri, M., Halim, L., Mohtar, L. E., & Soewarno, S. (2018). The Impact of Engineering Design Process in Teaching and Learning to Enhance Students' Science Problem-Solving Skills. *Jurnal Pendidikan IPA Indonesia*, 7(1), 66-75. <https://doi.org/10.15294/jpii.v7i1.12297>
- Tammilehto, J., Punamäki, R.-L., Flykt, M., Vänskä, M., Heikkilä, L. M., Lipsanen, J., Poikkeus, P., Tiitinen, A., & Lindblom, J. (2021). Developmental Stage-Specific Effects of Parenting on Adolescents' Emotion Regulation: A Longitudinal Study from Infancy to Late Adolescence. *Frontiers in Psychology*, 12, 582770. <https://doi.org/10.3389/fpsyg.2021.582770>
- Yunitasari, Irwandani, Triyana, E., Pricilia, A., Maulana, R. H., & Yulianto, M. N. (2019). How Course Review Horay (CRH) Assisted by The Media Prezi Can Improve Cognitive Abilities of Students. *Journal of Physics: Conference Series*, 1155, 012038. <https://doi.org/10.1088/1742-6596/1155/1/012038>