



DEVELOPING LEARNING MEDIA USING ONLINE PREZI INTO MATERIALS ABOUT OPTICAL EQUIPMENTS

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ABSTRACT

The instructional media used at schools are not maximized. Therefore, researchers developed an internet-based instructional media using Prezi online software. The objectives of this study are: (1) to describe the instructional medium validity using Prezi; (2) to describe the practicality of Prezi medium as an evaluation from students' questionnaire responses; and (3) to describe the effectiveness of Prezi medium seen from students' learning outcomes. This media development refers to the KEMP model development. The instruments used were in the form of media validation sheet, student questionnaire responses, and achievement test. The results showed that: (1) the validity of the medium category is very valid; (2) the practicality of the medium is on the very practical category; (3) the effectiveness of the medium is on the effective category. It is concluded that the Online Prezi instructional medium which was developed is eligible for use in learning.

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Keywords: prezi online; media development; optical equipment

INTRODUCTION

Teachers are obliged to plan good quality learning, as well as assess and evaluate learning outcomes in carrying out the tasks of professionalism. In addition, teachers also have a duty to improve and develop the academic qualifications and competence on an ongoing basis in accordance with the development of technology and art. Teachers should be able to keep abreast of technology to improve learning outcomes. One of them is developing the media with the latest current technology.

Instructional media can be used as an alternative source of learning in the learning process (Alimah, 2012). Well-designed instructional media will greatly help students digest and comprehend the subject matter (Muhson, 2010). Interesting learning media are also able to stimulate

students' attention to the material presented by teachers so that the material is more easily understood by Students (Utari et al., 2014). The use of multimedia in the learning process will help students in the learning process because the teaching materials become visible (Ramansyah, 2014).

The use of media for learning in schools, such as computers, projectors, and internet networks, is still not optimal. This can make students feel bored and uninterested in learning; as a result, students learning outcomes would be below the minimum criteria of mastery.

The physics learning in the school-based curriculum is expected to include better interaction and communication between teacher and students so that the learning objectives can be achieved well. Effective and efficient physics learning process can be realized well if teachers use appropriate instructional media so that students' learning outcomes can be optimum (Melida et al., 2014).

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One of the alternatives of the media that can be used is internet-based instructional media using Prezi online software. Prezi is internet-based software which is used as a media presentation as well as a tool to deliver ideas on a virtual canvas (Rodhi & Wasis, 2014). Prezi offers several new techniques in the presentation, which make the presentation more interactive and detailed (Good & Bederson, 2002). Prezi's excellence is its Zooming User Interface (ZUI), that is the ability to zoom in and zoom out the presentation slides (Brock & Brodahl, 2013).

Prezi is an effective instructional tool to improve students' learning process (Conboy et al., 2012). Prezi is a more effective instructional medium for gaining knowledge compared to the traditional media (Chou et al., 2015). Prezi is a transformative tool that builds students' ability to present information through logical, visual, and spatial relationships (Manning et al., 2011). Prezi medium usage makes it easier for students to understand information, and to insert a variety of pictures, photographs and videos to support the ease of preparing the presentation slides (Utari et al., 2014). This is because the Prezi medium is equipped with multimedia integration, therefore, the medium can combine photos, videos, images, and animations (Sari, 2014).

The use of Prezi media can be said to be effective as a medium of physics learning (Utari et al., 2014). The instructional medium application using Prezi software can increase students' learning interest (Suharjanto, 2014). In addition, Prezi presentation medium also positively influences students' learning outcomes (Mardiansyah et al., 2017) and can enhance students' critical thinking skills (Aotar et al., 2017). The previous study by Fitri (2016) stated that the application of learning through the Prezi medium can improve students' learning mastery. The instructional media can hopefully provide maximum results in the learning process (Taufiq et al., 2014).

Based on this research background and the development of an instructional medium using Prezi Online software, this research was conducted with the aim of producing an instructional medium using Prezi online software on optical devices topic which is feasibly used in the study based on validity, practicality, and effectiveness.

METHODS

This is a Research and Development. This study developed Internet-based instructional medium using Prezi Online software on optical

devices topic. The employed model development was by Kemp. Kemp's model emphasizes interdependence in every stage of the process, it also emphasizes on evaluation and it involves many factors in the educational field, such as resources, facilities, and time (Ibrahim, 2015).

The subjects of the try out were the students of Class X-1 SMA Negeri 8 Banjarmasin academic year 2015/2016, there are 29 students involved. Research data were collected through observation, distribution of questionnaires, as well as a written test. The validity was measured through the media validation sheet, then using the passing grade (X) which was the average score of the assessment results of academic and practitioners validators, and adapted to the media aspect of the assessment criteria that have been developed in Table 1.

Table 1. Criteria for Validating the Instructional Media

Interval	Category
$X \geq 3.25$	Very valid
$2.5 < X \leq 3.25$	Medium validity
$1.75 < X \leq 2.5$	Low validity
$X \leq 1.75$	Invalid

(Sudijono, 2009)

The practicality of the developed media was measured using students' questionnaire responses using the criteria in Table 2.

Table 2. Instructional Media Practicality Criteria

Interval	Category
$X \geq 3.25$	Very valid
$2.5 < X \leq 3.25$	Medium validity
$1.75 < X \leq 2.5$	Validity is low
$X \leq 1.75$	Invalid

The media effectiveness was measured using achievement test and analyzed using a normalized gain (N-gain). The media effectiveness criteria are seen in Table 3.

Table 3. Criteria of The Instructional Media Effectiveness

Value	Criteria
$\langle g \rangle \geq 0.7$	High
$0.7 > \langle g \rangle \geq 0.3$	Medium
$\langle g \rangle < 0.3$	Low

(Hake, 1998)

RESULTS AND DISCUSSION

The medium was tested, students' questionnaire responses, and achievement test were validated by two validators. Table 4 shows the

results of media validation. After the validation was carried out, the try out was done in the class X-1 SMA N 8 Banjarmasin which consisted of 29 students. The data obtained were from the media practicality of the students' questionnaire responses and effectiveness of media of the learning outcome test.

Table 4. Media Validation Results

Aspects of Assessment	Average	Category
Presentation variation	2.75	Good
Enforceability	3.17	Good
Completeness of the media	3.00	Good
Media design	3.75	Very Good
Thorough look	3.00	Good
Validity	3.13	Valid
Reliability	0.70	High

Table 5 shows the results of students' questionnaire responses. The physics learning media validation consists of five aspects, such as, variations in the presentation, enforceability, media completeness, good category of overall display and good category of media design.

Table 5. Results of The Analysis of Students' Questionnaire Responses

Indicator	Average	Category
Ease of use	3.54	Very Practical
Benefits	3.48	Very Practical
Time efficiency	3.49	Very Practical
Average	3.50	Very Practical

Table 6 shows the learning outcome test. The validation result of the instructional media by academics and practitioners earned an average score of 3.13 with a valid category for the validity and gained 0.70 by the category of high reliability.

Table 6. Results of The Students' Learning Outcomes on The Pretest and Posttest

On average pretest	On average posttest	N-gain	Category
25.36	77.90	0.70	Effective

The media practicality was acquired from students' questionnaire responses. According to Nieveen (Hobri, 2010) "the practicality aspects are associated with the experts and practitioners who state that the media developed can be applied, and that the application in the field is seen from students' response questionnaire". Practicality aspect is measured by the aspects of ease of use, benefits, and efficiency of learning time. The results of the analysis of the practicality obtained an average score of 3.50 with a very practical category. Prezi is easy to use, and it attracts students to learn (Mustafa et al., 2013). Students can use Prezi to work more easily together in projects (Strasser, 2010). Prezi medium has many advantages (Perron & Stearns, 2011), including (1) the ability to integrate text, images, animation, audio, and video into a single presentation; (2) having almost the same concept as mind mapping so that users can see all the elements of overall presentation; (3) can be used as a tool to create dynamic and informative presentation, because there are many templates; (4) is accessible online and offline; and (5) provides zooming out and zooming in that makes it easier for users to use, and the content can be delivered well (Brock & Brodahl, 2013).

The use of media makes the role of teacher only as an intermediary in the learning process, but it can make students motivated so that students become more active in learning (Mahbub et al., 2016). The developed instructional media effectiveness was obtained through achievement test and analyzed through the achievement test. According to Hobri (2010), "aspects of the media effectiveness can be seen from the mastery of students' cognitive learning outcomes". Based on the calculation, the result of the $\langle g \rangle$ was 0.70; , thus, it is categorized in the effective category. Prezi instructional medium influences the learning outcomes as it can improve students' learning outcomes (Brock & Brodahl, 2013; Virtanen et al., 2013; Wirawan, 2015). Therefore, Prezi is an effective instructional media to acquire some knowledge, and it can improve students' conceptual understanding (Akgun et al., 2016; Chou et al., 2015).

Prezi medium use in learning motivates students to be active and creative, improves students' imagination, clarifies complex events, and reveals the material or object that cannot be directly displayed so that learning becomes innovative and fun. The application of Prezi zooming presentation medium on physics learning gave a significant impact on improving students' learning outcomes in the cognitive, affective, and psychomotor components characterized by improvement of students' learning outcomes (Melida et al., 2014).

CONCLUSION

Based on the results of development and try-out, it can be concluded that the Internet-based instructional media using Prezi online software on optical equipment topic is feasible to use. This is supported by: the validity of this developed medium based on the validation results, is categorized as very valid, with an average score of 3.25; the practicality of the developed media, measured by students' questionnaire responses, is categorized as very practical, with an average score of 3.50; and the media effectiveness is in the category of effective, with a score of 0.70.

REFERENCES

- Akgun, O. ., Babur, A., & Albayrak, E. (2016). Effects of Lectures with PowerPoint or Prezi Presentations on Cognitive Load, Recall, and Conceptual Learning. *International Online Journal of Educational Sciences*, 8(3), 1-11.
- Alimah, S. (2012). Pengembangan Multimedia Pembelajaran Embriogenesis Hewan untuk Mengoptimalkan Pemahaman Kognitif Mahasiswa. *Jurnal Pendidikan IPA Indonesia*, 1(2), 131-140.
- Aotar, A., Adlim, A., & Safrida, S. (2015). Penerapan Presentasi Media Prezi Pada Materi Sistem Saraf Manusia Terhadap Keterampilan Berfikir Kritis Siswa Kelas XI SMA Negeri 2 Bukit. *Jurnal Edubio Tropika*, 3(2), 51-97.
- Brock, S., & Brodahl, C. (2013). A Tale of Two Cultures: Cross Cultural Comparison in Learning The Prezi Presentation Software Tool in The US and Norway. *Journal of Information Technology Education: Research*, 12(1), 95-119.
- Chou, P. N., Chang, C. C., & Lu, P. F. (2015). Prezi Versus Power Point: The Effects of Varied Digital Presentation Tools on Students' Learning Performance. *Computers & Education*, 91, 73-82.
- Conboy, C., Fletcher, S., Russell, K., & Wilson, M. (2012). An Evaluation of the Potential Use and Impact of Prezi, the Zooming Editor Software, as a Tool to Facilitate Learning in Higher Education. *Innovative in Practice*, 7, 31-45.
- Fitri, Y. (2016). Penerapan Media Prezi pada Materi Sistem Respirasi terhadap Ketuntasan Belajar Siswa di SMA Negeri Seribu Bukit Kabupaten Gayo Lues. *Jurnal Ilmiah Mahasiswa Pendidikan Biologi*, 1(2), 175-183.
- Good, L., & Bederson, B. B. (2002). Zoomable User Interfaces as A Medium for Slide Show Presentations. *Information Visualization*, 1(1), 35-49.
- Hake, R. R. (1998). *Analyzing Change/Gain Score*. Department of Physics Indiana University.
- Hobri, H. (2010). *Metodologi Penelitian Pengembangan (Aplikasi Pada Penelitian Pendidikan Matematika)*. Jember: Pena Salsabila.
- Ibrahim, A. A. (2015). Comparative Analysis between System Approach, Kemp, and ASSURE Instructional Design Models. *International Journal of Education and Research*, 3(12), 261-270.
- Manning, C., Brooks, W., Crotteau, V., Diedrich, A., Moser, J., & Zwiefelhofer, A. (2011). Tech Tools for Teachers, by Teachers: Bridging Teachers and Students. *Wisconsin English Journal*, 53(1), 24-28.
- Mardiansyah, M., Syaiful, M., & Basri, M. (2017). Pengaruh Media Presentasi Prezi Terhadap Hasil Belajar Siswa pada Mata Pelajaran Sejarah. *PESAGI (Jurnal Pendidikan dan Penelitian Sejarah)*, 5(2), 1-12.
- Melida, D., Masri, & Hufri. (2014). Pengaruh Media Prezi The Zooming Presentations Terhadap Hasil Belajar Fisika Siswa Kelas XI SMA N 12 Padang. *Pillar of Physics Education*, 4(2), 113-120.
- Muhson, A. (2010). Pengembangan Media Pembelajaran Berbasis Teknologi Informasi. *Jurnal Pendidikan Akuntansi Indonesia*, 8(2), 1-10.
- Mustaffa, A., Najid, N. E. M., & Sawari, S. S. M. (2013). Students' Perceptions and Attitude towards the Effectiveness of Prezi Uses in learning Islamic Subject. *arXiv preprint arXiv:1312.5481*.
- Perron, B. E., & Stearns, A. G. (2011). A Review of a Presentation Technology: Prezi. *Research on Social Work Practice*, 21(3), 376-377.
- Ramansyah, W. (2014). Pengembangan Multimedia Pembelajaran Interaktif Berbasis Adobe Flash CS3 pada Kelas 1 SDN Bancaran 3 Bangkalan. *Edutic-Scientific Journal of Informatics Education*, 1(1), 28-37.
- Rodhi, M. Y. & Wasis. (2014). Pengembangan Media Pembelajaran Berbasis Prezi untuk Meningkatkan Keterampilan Berpikir Kritis pada Materi Kalor. *Inovasi Pendidikan Fisika*, 3(2), 137-142.
- Strasser, N. (2010). Using Prezi in Education. *Educational Publishers LLP*, 11(2), 95-98.
- Sudijono, A. (2009). *Pengantar Statistik Pendidikan*. Jakarta: Rajawali Pers.
- Suharjanto, A. (2014). Penerapan Media Pembelajaran dengan Penggunaan Software Prezi dalam Upaya Meningkatkan Minat Belajar Mata Diklat Komunikasi. *Jurnal Pendidikan Administrasi Perkantoran*, 2(1), 144-152.
- Utari, Y. P. (2014). Pengembangan Media Pembelajaran Fisika Online Prezi dalam Pokok Bahasan Alat Optik pada Siswa Kelas X IPA SMA Negeri 3 Purworejo Tahun Pelajaran 2013/2014. *RADIASI: Jurnal Berkala Pendidikan Fisika*, 5(2), 45-49.
- Virtanen, P., Myllärniemi, J., & Wallander, H. (2013). Diversifying Higher Education: Facilitating Different Ways of Learning. *Campus-Wide Information Systems*, 30(3), 201-211.
- Widoyoko. (2013). *Evaluasi Program Pembelajaran*. Yogyakarta: Pustaka Pelajar.

- Wirawan, A. W. (2015). Penerapan Media Pembelajaran Berbasis Prezi untuk Meningkatkan Hasil Belajar Administrasi Kepegawaian. In *Prosiding Seminar Pendidikan Ekonomi dan Bisnis* (Vol. 1, No. 1).
- Zubaidillah, M. M., Kirana, K., & Poedjiastoeti, S. (2016). Development of STAD Cooperative Based Learning Set Assisted With Animation Media To Enhance Students' Learning Outcome in An Islamic Junior High School. *Jurnal Pendidikan IPA Indonesia*, 5(2), 247-255.