



Development of an Animated Video on Atomic Structure Material Integrated with Qur'an for Online Learning Using PowToon Web Apps

Raliandana Louise Santoso¹, Agus Kamaludin^{1*}, Aytan Safarova²

¹ Department of Chemistry Education, Universitas Islam Negeri Sunan Kalijaga, Indonesia

² Department of High Molecular Compounds Chemistry, Baku State University, Azerbaijan

*Correspondence Author: aguskamaludin@gmail.com

ABSTRACT

Qur'an science learning is needed so that students are intelligent academically, attitudinal, and spiritually. This study aims to develop an animated video of the integrated atomic structure material of the Qur'an using the PowToon web app. The method used in this study is the 4D Research & Development (R&D) model (Define, Design, Development, and Disseminate). The products developed were assessed by media experts, material experts, reviewers, and student responses. The results of product quality assessment by material experts get a percentage of 95% in the excellent category, media experts get 90% in the outstanding variety, and reviewers get a rate of 94% in the excellent category. Class X high school students responded positively to the products developed with a percentage of 94%. Based on the assessment results, the video can be used as an online learning medium for Qur'an-integrated atomic structure material to increase gratitude to Allah SWT.

Keywords: *the animated video, integrated qur'an, atomic structure, powtoon*

INTRODUCTION

The emergence of the COVID-19 pandemic at the end of 2019 has formed a new order in the world of education (Saleh, 2020; Seda Yildirim et al., 2021). COVID-19 is an infectious disease caused by coronavirus 2 (Siahaan, 2020). Since December 31, 2019, the coronavirus 2 infection has been declared a global pandemic (Ridlo, 2020). This pandemic caused many schools worldwide to close due to COVID-19 (Mastura & Santaria, 2020; Fathmath Nishan & Ahmed Mohamed, 2021). School closures were carried out to avoid crowds that could potentially accelerate the spread of the virus (Asmono, 2022; Nurhafidah, 2021). Meanwhile, amid social restrictions due to the COVID-19 outbreak, teachers must ensure that learning activities continue even if students are at home (Solviana, 2020). Policies issued to limit the spread of COVID-19 impacted the education sector (Luh Devi et al., 2020). The Indonesian Ministry of Education issued a policy that teaching and learning activities in schools are still implemented and replaced by an online system (Amalia & Sa'adah, 2020). Unfortunately, this online learning transition policy creates various problems in school implementation (Zalat et al., 2021; Nur Syasya Karim & Meredian Alam, 2021). Limited facilities and infrastructure must improve online learning and mastery of technology, internet networks, and expensive quota fees (Haryadi and Selviani, 2021).

Online learning indirectly uses the platform to facilitate teaching and learning activities (Ika Handarini & Sri Wulandari, 2020; Khasanah et al., 2021; Mar'ah et al., 2020). Online learning

expects students to be able to take part in learning optimally, like face-to-face learning (Jaelani et al., 2020). Online learning requires facilities and infrastructure, as well as learning media, prepared by teachers to support the smoothness and ease of the learning process (Hatmo, 2021). Teachers have a significant role in online learning success (Joshi et al., 2021). Therefore, teachers must manage classes well to create a conducive, creative, and innovative learning atmosphere and motivate students to produce quality learning outcomes (Djuwairiyah & Nawafil, 2021). However, the fact is that teachers sometimes do not design lessons (Grosch et al., 2014; Yusuf et al., 2017). Therefore, students consider online learning less effective, and the media used also seems messy (Alfarisyi & Mahardika, 2021; Hidayani, 2016; Nadhiroh, 2018). One of the reasons why teachers do not use instructional media is that many teachers have not mastered the technology, so in the learning process, they only use sober learning media (Nahdi et al., 2020). The use of learning media could be more optimal due to the limitations of learning media and the weak ability of teachers to make learning media (Rahim & Suherman, 2019; Sunandar, 2020). Learning media is crucial in supporting online learning to achieve learning objectives more optimally (Miftah, 2013; Sapriyah, 2019). The lack of media use in online learning as a learning resource causes the material the teacher delivers to be not optimal (Basar, 2021). Therefore, appropriate and effective learning media are needed for online learning (Handayani, 2020; Sakiah & Effendi, 2021; Salsabila et al., 2020).

Learning media can be defined as one of tool to facilitate the delivery of student material so that students can easily understand the material presented by the teacher (Ally, 2004; Barnes et al., 2007; Nurrita, 2018). Instructional media must be attractive, so students feel energized when learning occurs (Lindfors & Hilmola, 2015). With learning media, students will focus more on the material the teacher teaches to improve learning outcomes (Annisa et al., 2018). Therefore, teachers need to adapt to preparing exciting learning materials, especially using digital technology (Rumaksari, 2021). Video animation is one learning medium involving digital technology (Sunami & Aslam, 2021). Video animation is a tool to help learn media in the form of images into moving animation (Agustien et al., 2018). Using animated videos in the learning process can increase learning interest and student learning outcomes (Susilo & Widiya, 2021; Vethanayagam & Hemalatha, 2010; Sirait, 2016; Aslam, 2021; Johari et al., 2014). However, many teachers still need help making animated videos (Ichsan et al., 2018; Walangadi & Pratama, 2018). Obstacles experienced by teachers in making animated videos include requiring a relatively long time, expensive costs, and difficulties in operating programs to make animated videos (Suranto, 2020).

One program to make animated videos that is free and easy to use is the PowToon web app (Anggita, 2020; Jatiningtias, 2017). PowToon is an online learning media service in the form of animated videos (Qurrotaini et al., 2020). The animation features are handwriting, cartoons, livelier transition effects, and elementary timeline settings (Astika et al., 2019). The advantages of PowToon are the availability of many choices of animated characters, so there is no need to make animations manually, and the final product is in the form of animated videos (Adkhar, 2015). On the other hand, PowToon animated videos can improve students' cognitive, affective, and psychomotor abilities (Veen C. V. D & Oers, 2017). Using PowToon in online learning can make abstract material more concrete (Merry, 2015; Qurrotaini et al., 2020; Yusuf et al., 2017). According to research by Ariyanto et al. (2018), PowToon perfectly affects student enthusiasm and interest in learning. Therefore, animated PowToon videos are perfect for explaining abstract material (Donna et al., 2021).

Chemistry is a field of science that contains a lot of abstract and complex material, so most students consider chemistry a difficult and tedious subject (Muderawan; et al., 2019; Priliyanti et al., 2021; Sariati et al., 2020). Material that is difficult for students to understand has the potential to cause misconceptions (Mentari et al., 2017). One of the chemistry materials that students find challenging and tedious is atomic structure (Langitasari et al., 2021; Sadhu, 2019). Atomic structure material requires a deep understanding and requires students to be more

focused so that the material can be more easily understood (Juliana & Haryati, 2017). This material has several characteristics: (1) it is abstract, namely about electrons, protons, neutrons, isotopes, isobars, isotones, and atomic models, (2) conceptual understanding, namely configuration rules, and atomic theory, (3) application of concepts, namely configure the electrons of an atom (Widiyowati, 2014). *Atomic structure material* is a fundamental concept that students must master because it relates to subsequent chemical concepts (Mampate, 2020). However, based on the results of interviews with chemistry teachers in Yogyakarta, it was stated that atomic structure is a complex material to learn because much of the material is abstract. Therefore, PowToon animation videos are needed in teaching atomic structure material.

Learning atomic structure material by teachers has so far been taught without linking the atomic structure material to religion to increase student piety. The learning that is carried out seems to run independently and has no connection with religion (Badlisyah & Wahyu Munawwarah, 2017). So far, chemistry and religion have been in a dichotomy (Basri, 2019). Learning should not only be able to apply chemical material in real life but also increase religious values to Allah SWT (Qurniati, 2021). Religious values instilled in students can form the next generation with character. Instilling religious values can be done by integrating religious values into the subject matter (Ningrum et al., 2020). Integrating religious values is one of the strategies to improve character education in learning (Savita, 2018). Unfortunately, applying religious values in chemistry learning materials is rarely practiced (Kisworo & Azizah, 2018; Muslim et al., 2021; Qurniati, 2021; Subarkah, 2021). Even though applying religious values to chemical material can build character values in the learning process, it increases student learning achievement (Ningrum et al., 2020).

Integrating chemistry learning with verses from the Qur'an can improve the quality of learning (Lestari & Dewi, 2020). The structure of the atom is part of chemistry which is widely explained in the Qur'an (Lailiyah, 2020; Purwaningrum, 2015). The existence of atomic structure learning integrated with Qur'an values can provide provisions for teachers to be more aware of the majesty of Allah SWT (Chang & Overby, 2011; Larasati et al., 2020). Students also study the interrelationships of atomic structure material in the Qur'an to increase their faith and piety to Allah SWT (Qurniati, 2021; Sari & Vebrianto, 2017). Unfortunately, applying Al-Qur'an values in chemistry learning materials is still relatively low (Muslim et al., 2021; Subarkah, 2021). So far, chemistry learning at school seems to have nothing to do with religion (Badlisyah & Wahyu Munawwarah, 2017). Qur'an integrated learning can answer these problems (Handrianto, 2010). Qur'an integrated learning proves a clear link between chemistry and Islam through the verses of the Qur'an (Fiteriani, 2014; Munadi, 2016; Purwanto & Rizki, 2015). This learning aims to apply knowledge based on the Qur'an and hadith and create knowledge through religious teachings (Ramzi, 2004). Qur'an integrated learning is the general goal of national education, namely to form human beings who have faith and are devoted to God Almighty (Fitriani et al., 2016). Therefore, chemistry learning should be able to properly apply Qur'an integrated learning processes (Zain & Vebrianto, 2017).

Qur'an integrated learning requires students to be able to master internalizing the verses of the Qur'an, which supports students to have more character (Tahir, 2021). The characteristics of integrated Qur'an teaching materials include the content of values of faith and devotion, science and technology, and practical and flexible implementation (Daryanto, 2013). Qur'an integrated learning videos can be used as a new method to increase the strength of current student education (Mustikaningrum et al., 2020). In addition, this method is by the goal of education to have religious and spiritual strength, personality, intelligence, and noble character (Kholis, 2014). The existence of the development of a learning model that integrates learning materials with the Al Qu'ran can form a generation that is not only bright academically but also attitude and spiritually (Shofa et al., 2020).

Based on the description of the problems above, this study aims to produce an animated video of atomic structure material for integrated Qur'an-based online learning using the PowToon web app. The existence of an integrated Qur'an-based animated video media is expected to make students understand more about the relationship between atomic structure material and the Qur'an so that they can increase their piety and become individuals who have good morals (Nurrifa, 2018; Nursarifah, 2021). In addition, the developed media can make it easier for teachers to explain the relationship between material and Qur'an.

METHODOLOGY

This study employed the Research and Development (R&D) research method. The development model used is a 4-D model, which aims to develop an integrated Qur'an video animation of atomic structure material using the PowToon web application. The steps for the 4-D development model consist of defining, designing, developing, and disseminating, as seen in Image 1 (Sa'adah & Wahyu, 2020).

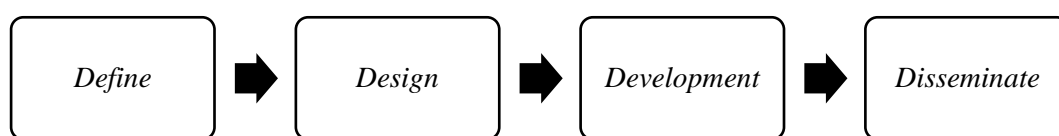


Image 1. 4D Development Model

The definition stage aims to identify the needs required in the development of a product, consisting of five stages: front-end analysis, student analysis, concept analysis, task analysis, and learning objective specification. Front-end and student analyses were conducted by observing and interviewing chemistry teachers and high school students. The concept analysis is conducted by identifying concepts related to the material in the 2013 curriculum. Task analysis is carried out by identifying the minimum competencies that students must have. The specification of learning objectives is done by making goals or changes in behavior expected of students after learning. The design stage is the stage to produce product designs that will be developed according to the needs of the interview results. This stage begins with selecting software and collecting reference material, then designing the initial product design and preparing product instruments. The development stage aims to produce the final form of learning media that has been assessed and validated by media experts, material experts, high school chemistry teachers (reviewers), and responded to by high school students. The dissemination stage is the stage for disseminating the animated Powtoon video of Qur'an integrated atomic structure material that has been made.

The instruments used to collect data in this research were product validation sheets, product quality assessment sheets, and student response sheets. Before validating the product, namely video media, first validate the instrument with an instrument expert. Instrument validation is carried out to find out and evaluate the instrument whether it is suitable or not to be used for data collection. The following Table 1. is a validation of the assessment instrument used.

Table 1. Validation of the Assesment Instrument

No.	Aspects of assessment of Indicators	Indicator	Number
1.	Language	Use of communicative sentences	1
		Use of words that do not give rise to double meanings	2
2.	Material	Depth of material	3
		Correctness of concepts in material	4

No.	Aspects of assessment of Indicators	Indicator	Number
3.	Islam-science integration	Suitability of Islam-science integration with the material	5
		Integrating Islam-science with material	6
		Islam-science integration increases students' religiosity	7
4.	Video	Opening	8
		Visuals	9
		Audio	10
		Closing	11

The product research subjects consisted of one material expert lecturer, one media expert student, four peer reviewers, four high school/MA chemistry educators, and responded by ten class X high school students. The validation process began with the product being reviewed by the supervisor. After that, the product will be validated by four peer reviewers who understand chemistry and animated videos. Once the product is reviewed, the product is validated and assessed by one lecturer as a material expert who masters chemistry, namely atomic structure material and one media expert who understands and has created Powtoon learning media. Next, the product quality assessment was carried out by reviewers (four SMA/MA chemistry educators). Products whose quality has been assessed by reviewers will be responded to by ten high school students in class.

The data analysis technique was carried out by changing the results of the assessments from media experts, material experts, and reviewers in the form of qualitative values to be converted into quantitative values. It makes media development decisions based on a Likert scale with the answer options Very Good, Good, Adequate, Less, and Very Poor, with a score of 5, 4, 3, 2, 1 for each option. Next, the average value of each aspect of the assessment is calculated from the score that has been obtained. The average score (\bar{X}) is calculated from the total score of each assessor ($\sum x$) divided by the number of assessors (n). The score obtained is then converted into quantitative data according to Table 2. (Sukardjo & Sari, 2009).

Table 2. Ideal Assessment Criteria

Score Range	Category
$X_i + 1,80 S_{Bi} < X$	Very Good
$X_i + 0,60 S_{Bi} < X \leq X_i + 1,80 S_{Bi}$	Good
$X_i - 0,60 S_{Bi} < X \leq X_i + 0,60 S_{Bi}$	Adequate
$X_i - 1,80 S_{Bi} < X \leq X_i - 0,60 S_{Bi}$	Less
$X \leq X_i - 1,80 S_{Bi}$	Very Poor

Ten students' response data were converted into quantitative data in the form of scores using the Guttman scale. The data that has been changed is then calculated as the percentage of product ideality. The percentage of ideal student responses is calculated by dividing the achieved score by the maximum ideal score and then multiplying it by 100%.

RESULT AND DISCUSSION

This study aims to produce learning media through animated videos on Qur'an integrated atomic structure material using the PowToon web app. Animated videos are technology-based learning media that can make abstract material concrete so that students easily understand it (Andrasari et al., 2022; Nurdiana et al., 2021; Roy et al., 2020). The implementation of video as a learning media is expected to increase students' interest in online learning (Parawansa, 2022). The

PowToon web app was chosen because it has exclusive and interesting animation features that make it easier for teachers to create animations (Anggita, 2020; Ernalida et al., 2018; Ilsa et al., 2020). Powtoon audio and video editing using the Adobe Premiere application (Fatmasari, 2022). The Adobe Premiere application has a simple and accessible interface. The research process was carried out using the 4D model (define, design, develop, and disseminate).

Define

Front-end analysis and student analysis at the define stage were carried out by observing and interviewing chemistry teachers and students at MAN 1 Yogyakarta, MAN 2 Yogyakarta, SMA N 1 Gamping, and SMA 1 Banguntapan. The results of these interviews were then studied to determine the products needed during online learning. Based on the observations and interviews, information was obtained that in the atomic structure learning process, the teacher only used PowerPoint and worked on practice questions. Teachers do not use special learning media, so they cannot explain atomic structure material in detail in the online learning process. Concept analysis was done by identifying concepts related to atomic structure material in the 2013 curriculum syllabus. Task analysis was carried out by analyzing essential competencies and learning indicators. The results of the analysis of concepts and assignments are then included in the learning media that will be made. Furthermore, the material that has been determined is then made for learning objectives to be achieved by students.

Design

At the design stage, the researcher prepares a product concept design to be developed. The steps taken in the design stage include selecting media, selecting formats, collecting references, making instruments, and making initial designs. The media chosen in this study is a Powtoon animated video—a collection of reference material on atomic structure from books, websites, and YouTube. The material is then inserted into the media. They are, furthermore, making instruments to assess the quality of the product being developed. The research instrument is used as an assessment to improve product design (Arfah & Fatisa, 2020). The assessment instrument in a product quality assessment questionnaire with a Likert scale was given to material experts, media experts, and reviewers. At the same time, the student response sheet uses the Guttman scale to respond to the product. This instrument is consulted with the supervisor before being validated by an instrument expert. The initial design is made by creating a product storyboard to simplify the video design process that will be developed (Wahyuni et al., 2020). Here is the process of making a PowToon animated video.

The first stage is designing all videos by creating material scripts, designing the animation layout in the PowToon web application, recording sound, and preparing music as a video background. Next, videos are produced by inserting animations and other components into the PowToon slides, as shown in Image 2 below.

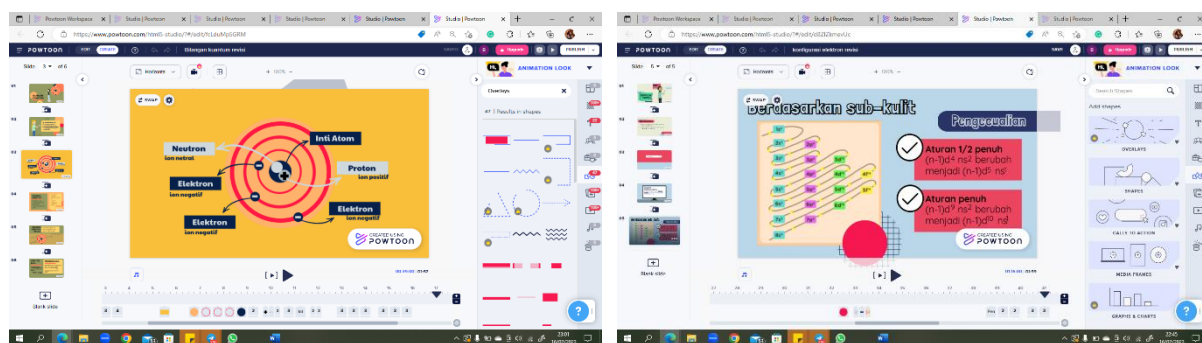


Image 2. The video creation process in Powtoon

The second stage is the addition of graphic designs, animations, or other components for Powtoon videos using Canva, as shown in Image 3 below.

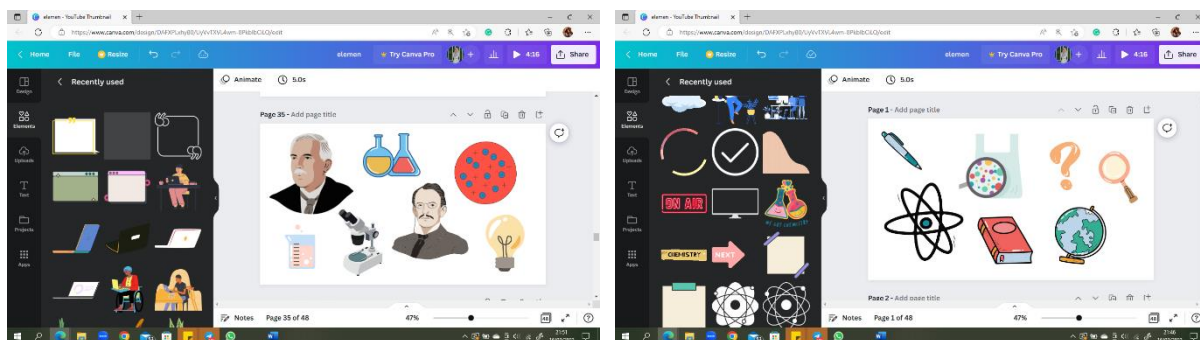


Image 3. Selection of other components in Canva

The PowToon videos created are then edited using Adobe Premiere Pro to include the sound recordings that were previously made. The activities combine sound recordings with the finished video, cutting, speeding up, slowing down the video speed, and adding music as a video background, as shown in Image 4 below.

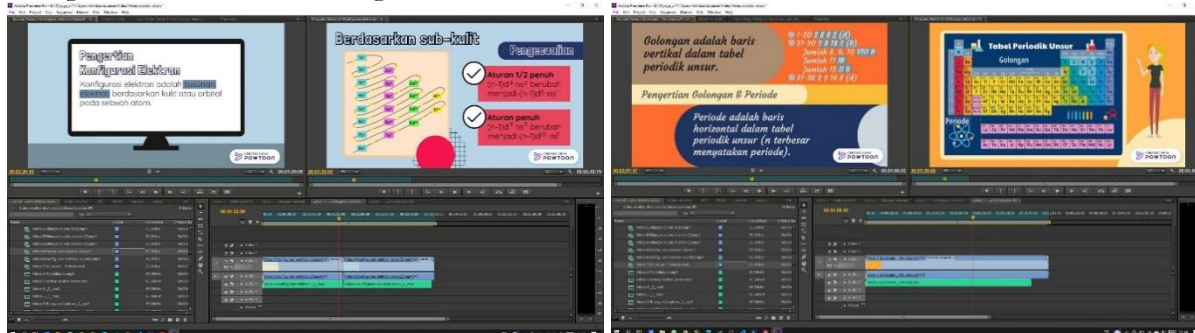


Image 4. Video editing process in Adobe Premiere Pro

Voice recording on video uses the Voice Recorder application to produce clear voice recordings, as shown in Image 5 below.

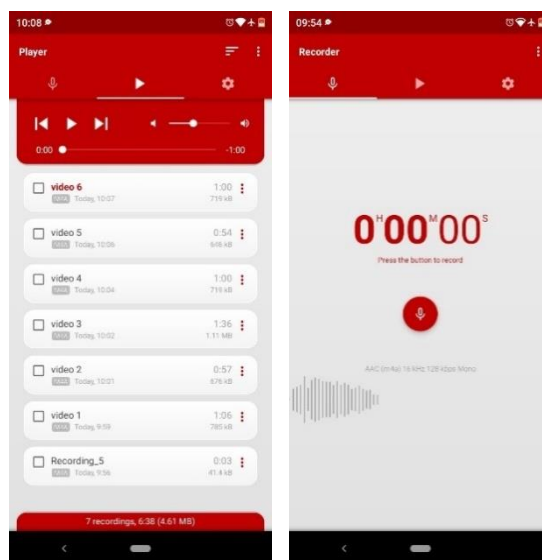


Image 5. Voice recording using Voice Recorder

This research produced a Powtoon animated video on Qur'an integrated atomic structure material divided into six videos for 2-7 minutes each. The video components include opening, content, and closing. The opening section includes greetings, titles, and learning objectives, as shown in Image 6 below.

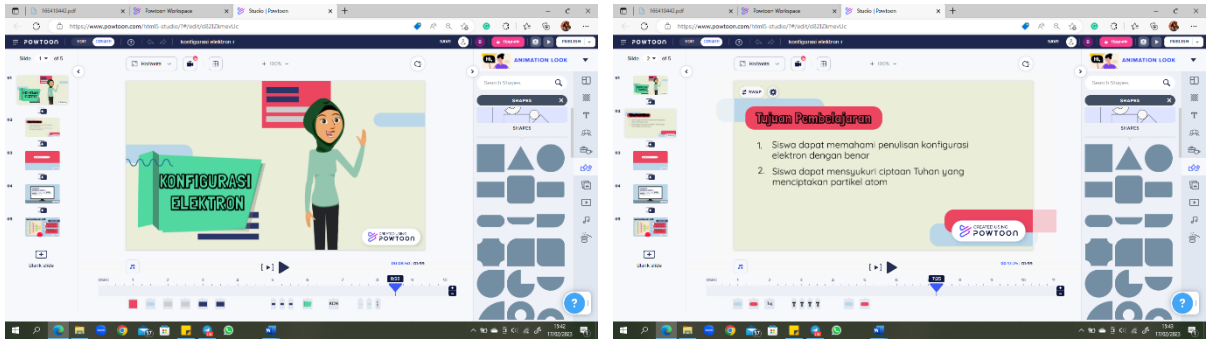


Image 6. The opening section of the video

The video content section is an explanation of atomic structure material, including the development of atomic models, atomic symbols, isotopes, isobars, isotones, quantum numbers, electron configurations, groups, and periods with engaging animations so that the material is accessible for students to understand (Ponza, 2018). The contents of the explanation of the atomic structure can be seen in Image 7 below.

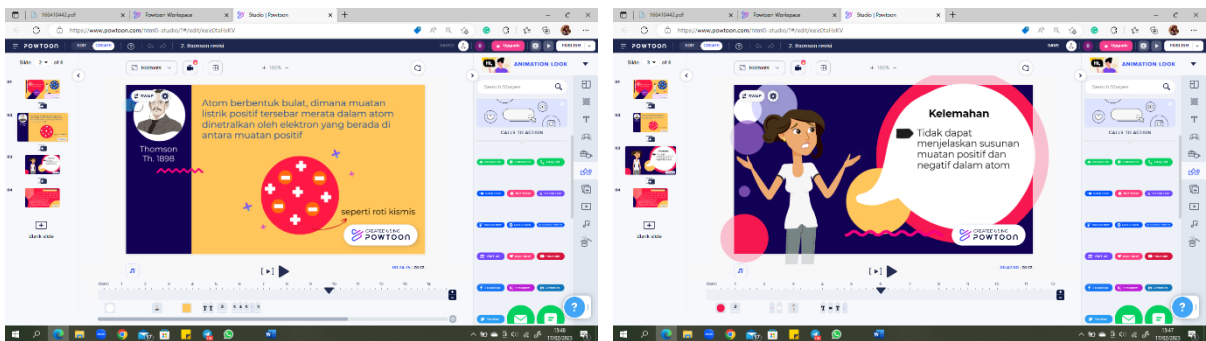
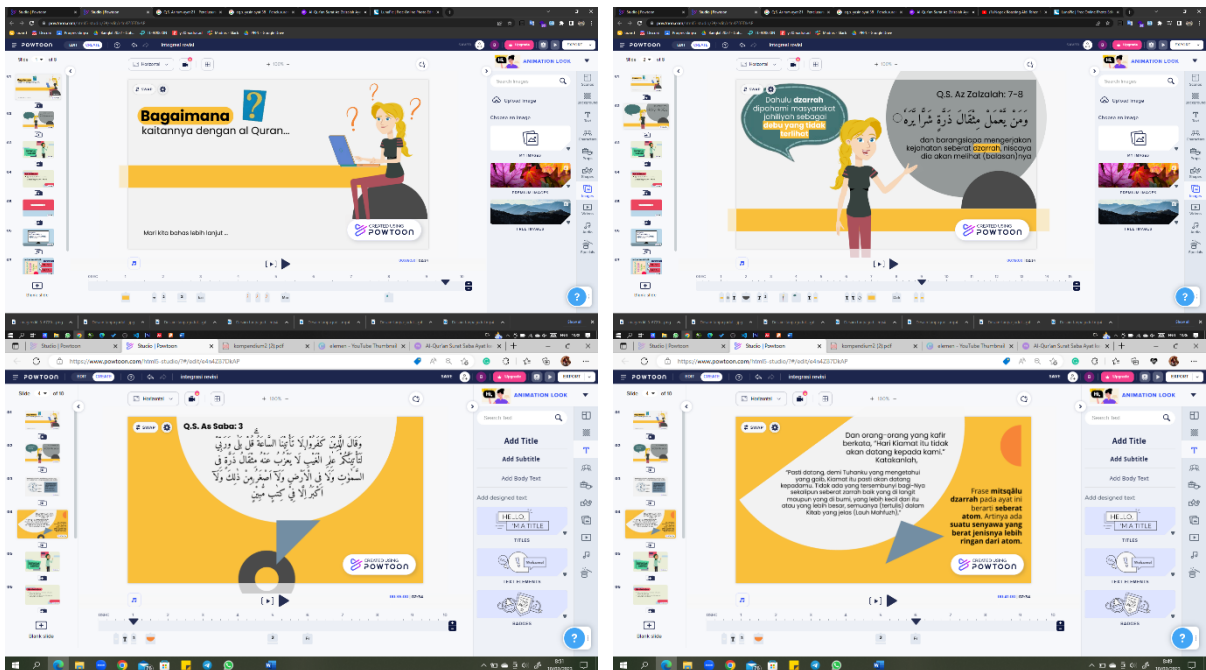


Image 7. Explanation of atomic structure material

The concept chosen in the concept analysis is integrated with Qur'an. The integrated characteristics of Qur'an are that the verses presented are related to the material, relevant explanations between the material and the verses of the Qur'an, and an application of the integration of material and verses in everyday life. The display of the characteristics in the video can be seen in Image 8.



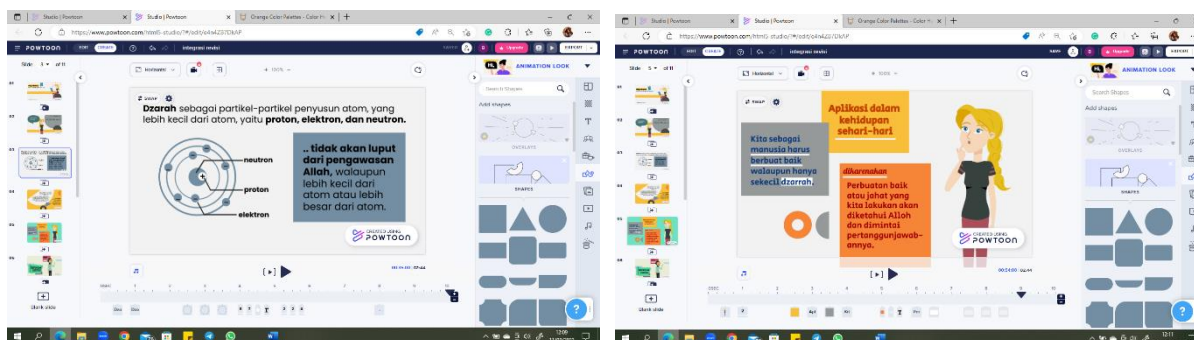


Image 8. Presentation of Qur'an Integrated

The implications of learning Qur'an integrated atomic structure material through three stages, according to (Barizi, 2011). In the first stage, material analysis was carried out by classifying science into the appropriate science theme, then an understanding of Kauniah's verse was carried out with that theme. The second stage integrates material with Qur'an, including concepts and finding common points between the Qur'an and science. The third stage uses the Qur'an as the primary reference source in the learning material of the atomic structure. The relationship between the Qur'an and Science is interrelated (Harahap, 2018). Students can also understand that science and the Qur'an are inseparable units. Therefore, Qur'an integrated learning aims to provide students with complete insight and eliminate the dichotomy between science and religion, creating a generation that is cognitively, spiritually, and socially competent (Shofa et al., 2020).

The closing section, which is the closing part of the video, includes conclusions, acknowledgments, and closing. The closing part of the video can be seen in Image 9 below.

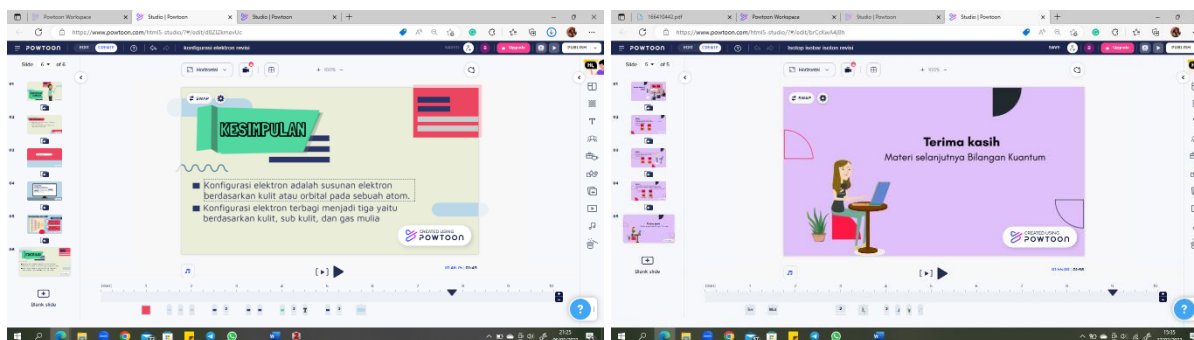


Image 9. Closing videos

Development

The finished product is then validated and assessed for quality by material experts, media experts, and reviewers and responded to by high school students. Following are the results of the product quality assessment and student responses.

Table 3. Results of product quality assessment and student responses

Assessment /response	Assessment Aspect	Σ Score	Σ Ideal Maximum Score	Ideal Percentage	Category
Material expert	Material	10	10	95%	Very Good
	Integrated Science	9	10		
Media expert Reviewer	Video	9	10	90%	Very Good
	Material	9,5	10		
	Integrated Science	9,3	10		
Student	Video	9,4	10	94%	Very Good
	Language	10	10		
	Material	10	10		

Assessment /response	Assessment Aspect	Σ Score	Σ Ideal Maximum Score	Ideal Percentage	Category
	Presentation	9	10		
	<i>Integrated Science</i>	9,5	10		
	Animation	8,5	10		

According to the assessment of material and media experts on Table 3, the animated video developed obtained an excellent category with ideal percentages of 95% and 90%. Four reviewers then assessed the animated video that was developed. The results of the video evaluation by the reviewers obtained an ideal percentage of 94% in the Very Good category. According to K. W. Arianti & Sulisworo (2019), Powtoon animation videos classified as very good can be used as learning media in class.

The next stage is the implementation of animated videos to find out students' responses to the products that have been developed. Student responses were made using the google form questionnaire using the Guttman scale by Class X high school students. The percentage of ideality in the student response results was 94%, with an excellent category. This is consistent with research conducted by Wulandari et al. (2020), which states that videos in the excellent category show that students understand the material and are very interested in learning using the animated video media developed. Based on the questionnaire and observation results, information was obtained that students were more enthusiastic and easy to understand when learning using animated videos. This is to the research of Awalia et al. (2019) that Powtoon animation learning media can provide students with an understanding because it provides an illustration related to the material. According to Widiasih et al. (2018), using appropriate learning media in learning can generate motivation and enthusiasm for learning.

CONCLUSION

The research aims to develop a powtoon animation video on Qur'an integrated atomic structure material. The product developed has been validated and assessed by material experts, media experts, and reviewers and responded to by high school students in class X. Based on the results of the assessment, this animated video obtained an ideal percentage of material experts, media experts, reviewers, and student responses respectively of 95 %, 90%, 94%, and 94% in the Very Good category. Therefore, the animated video developed is suitable as a learning medium on Qur'an integrated atomic structure material for online learning in increasing faith in Allah SWT.

RECOMMENDATION

It is necessary to carry out further research in the form of implementation regarding the use of Powtoon animated video on Qur'an integrated atomic structure material to determine the effectiveness of the developed animated video as well as research on the development of similar animated videos to increase the number of learning media for Qur'an integrated animated video on other materials.

REFERENCES

- Adkhar, B. I. (2015). *Pengembangan Media Video Animasi Pembelajaran Berbasis Powtoon pada Kelas 2 Mata Pelajaran Ilmu Pengetahuan Alam di SD Labschool Unnes [Universitas Negeri Semarang]*. Universitas Negeri Semarang.

- Agustien, R., Umamah, N., & Sumarno. (2018). Pengembangan Media Pembelajaran Video Animasi Dua Dimensi Situs Pekauman di Bondowoso dengan Model Addie Mata Pelajaran Sejarah Kelas X IPS. *Jurnal Edukasi*, 5(1), 19–23. <https://doi.org/10.19184/jukasi.v5i1.8010>
- Alfarisyi, M. K., & Mahardika, I. M. S. (2021). Efektivitas Pembelajaran Daring pada Mata Pelajaran Pendidikan Jasmani Olahraga dan Kesehatan di MTs Salafiyah Al-Amin. *Jurnal Prestasi Olahraga*, 4(10), 115–123. Retrieved from <https://ejournal.unesa.ac.id/index.php/jurnal-prestasi-olahraga/article/view/42627>
- Ally, M. (2004). *Foundations of Educational Theory for Online Learning (2nd ed.)*. The Theory and Practice of Online Learning AU Press Athabasca University.
- Amalia, A., & Sa'adah, N. (2020). Dampak Wabah COVID-19 Terhadap Kegiatan Belajar Mengajar di Indonesia. *Jurnal Psikologi*, 13(2), 214–225. <https://doi.org/10.35760/psi.2020.v13i2.3572>
- Andrasari, A. N., Haryanti, Y. D., & Yanto, A. (2022). Media Pembelajaran Video Animasi Berbasis Kinemaster Bagi Guru SD. *Prosiding Seminar Nasional Pendidikan*, 76–83. Retrieved from <https://prosiding.unma.ac.id/index.php/semnaskip/article/view/781>
- Anggita, Z. (2020). Penggunaan Powtoon Sebagai Solusi Media Pembelajaran di Masa Pandemi COVID-19. *Konfiks: Jurnal Bahasa, Sastra Dan Pengajaran*, 7(2), 44–52. <https://doi.org/10.26618/konfiks.v7i2.4538>
- Annisa, F., Hikmawati, Rismayanti, Aras, M., Sahaka, A., Meldawati, A., & Umajjah, N. T. (2018). Penerapan Media Audio Visual (Vidio Animasi Kartun) Materi Wudhu Pada Mata Pelajaran Pendidikan Agama Islam Di Kelas I dan IISD IT Al-Mawaddah Warrahmah Kolaka. *Jurnal Teknologi Pendidikan Madrasah*, 1(2), 96–122. <https://doi.org/10.5281/zenodo.1419726>
- Arfah, N., & Fatisa, Y. (2020). Desain dan Uji Coba Video Stop Motion Sebagai Media Pembelajaran Perkembangan Teori Model Atom. *Jurnal Pendidikan Kimia Universitas Riau*, 5(2), 46–54. <https://doi.org/10.33578/jpk-unri.v5i2.7775>
- Arianti, K. W., & Sulisworo, D. (2019). *Integrasi Tpack dalam Pengembangan Multimedia Berbasis Powtoon Pada Pembelajaran dengan Pokok Bahasan Gelombang Berjalan dan Gelombang Stasioner di SMA Muhammadiyah 7 Yogyakarta*. Universitas Ahmad Dahlan.
- Ariyanto, R., Kantun, S., & Sukidin, S. (2018). Penggunaan Media Powtoon Untuk Meningkatkan Minat dan Hasil Belajar Siswa Pada Kompetensi Dasar Mendeskripsikan Pelaku-Pelaku Ekonomi Dalam Sistem Perekonomian. *Jurnal Pendidikan Ekonomi: Jurnal Ilmiah Ilmu Pendidikan, Ilmu Ekonomi Dan Ilmu Sosial*, 12(1), 122–127. <https://doi.org/10.19184/jpe.v12i1.7622>
- Aslam, A. A. W. , P. P. S. , Z. & A. E. S. (2021). Internet User Behavior and Social Media in Learning. *Proceedings of the 4th International Conference on Research of Educational Administration and Management (ICREAM 2020)*, 50–55.
- Asmono, Y. A. (2022). Kebijakan Pelaksanaan PPKM Darurat Sebagai Upaya Pengendalian COVID-19 di Provinsi Jawa Timur. *Jurnal Penelitian Administrasi Publik*, 2(1), 70–88. Retrieved from <https://aksiologi.org/index.php/praja/article/view/217>
- Astika, R. Y., Anggoro, B. S., & Andriani, S. (2019). Pengembangan Video Media Pembelajaran Matematika dengan Bantuan Powtoon. *Jurnal Pemikiran Dan Penelitian Pendidikan Matematika*, 2(2), 85–96. Retrieved from <https://journal.rekarta.co.id/index.php/jp3m/article/view/214>
- Awalia, I., Pamungkas, A. S., & Alamsyah, T. P. (2019). Pengembangan Media Pembelajaran Animasi Powtoon pada Mata Pelajaran Matematika di Kelas IV SD. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 10(1), 49–56. <https://doi.org/10.15294/kreano.v10i1.18534>

- Badlisyah, T., & Wahyu Munawwarah. (2017). Pengembangan Modul Pembelajaran Kimia Materi Struktur Atom Berbasis Al-Qur'an di SMAN 1 Aceh Barat Daya. *Lantanida Journal*, 5(2), 93–196. Retrieved from <https://jurnal.ar-raniry.ac.id/index.php/lantanida/article/view/2835>
- Barizi, A. (2011). *Pendidikan integratif: Akar Tradisi dan Integrasi Keilmuan Pendidikan Islam*. UIN Maliki Press.
- Barnes, K., Marateo, R. C., & Ferris, S. P. (2007). Teaching and Learning with the Net Generation. *Innovate: Journal of Online Education*, 3(4), 1–8. <https://nsuworks.nova.edu/innovate/vol3/iss4/1/ova.edu/innovate>
- Basar, A. M. (2021). Problematika Pembelajaran Jarak Jauh Pada Masa Pandemi Covid-19: (Studi Kasus di SMPIT Nurul Fajri – Cikarang Barat – Bekasi). *Edunesia: Jurnal Ilmiah Pendidikan*, 2(1), 208–218. <https://doi.org/10.51276/edu.v2i1.112>
- Basri, H. (2019). Teologi Sains: Mengatasi Dikotomi Sains-Agama Perspektif Islam. *Zawiyah: Jurnal Pemikiran Islam*, 5(2), 377–404. Retrieved from <https://ejournal.iainkendari.ac.id/zawiyah/article/view/1506>
- Chang, C., & Overby, O. (2011). *General Chemistry: The Essential Concepts Sixth Edition*. Mc-Graw Hill.
- Daryanto. (2013). *Menyusun Modul Bahan Ajar Untuk Persiapan Guru Dalam Mengajar*. Gaya Media.
- Djuwairiyah, & Nawafil, M. (2021). Urgensi Pengelolaan Kelas: Suatu Analisis Filosofis dan Pemahaman Dasar Bagi Kalangan Pendidik di Pesantren. *Edupedia*, 5(2), 114–123.
- Donna, R., Ekok, A. S., & Febriandi, R. (2021). Pengembangan Multimedia Interaktif Berbasis Powtoon pada Pembelajaran Tematik di Sekolah Dasar. *Jurnal Basicedu*, 5(5), 3799–3813. <https://doi.org/10.31004/basicedu.v5i5.1382>
- Ernalida, D., Anshori, A. G., & Hikmah, R. U. N. (2018). Powtoon: Media Pembelajaran berbasis Teknologi Informasi sebagai Upaya dalam Menciptakan Pembelajaran yang Menarik dan Kreatif. *Logat: Jurnal Bahasa Indonesia Dan Pembelajaran*, 5(2), 132–137.
- Fathmath Nishan, & Ahmed Mohamed. (2021). Emerging stronger: policy directions for COVID-19 and beyond for public schools in the Maldives. *Fulbright Review of Economics and Policy*, 1(2), 266–285.
- Fatmasari, D. (2022). *Pengembangan Video Animasi Pembelajaran Biologi Berbantuan Instagram Video Reel Pada Materi Virus Untuk Siswa Kelas X IPA di MA Miftahul Huda Banyuwangi Tahun 2022/2023*. Universitas Islam Negeri Kiai Haji Achmad Siddiq.
- Fiteriani, I. (2014). Analisis Model Integrasi Ilmu dan Agama dalam Pelaksanaan Pendidikan di Sekolah Dasar Islam Bandar Lampung. *Terampil: Jurnal Pendidikan Dan Pembelajaran Dasar*, 1(1), 150–179.
- Fitriani, F., Mahmud, & Darmana, A. (2016).). Pengembangan dan Standarisasi Bahan Ajar Kimia Terintegrasi Nilai-Nilai Spiritual Untuk Kelas XI SMA/MA Semester 1 Berdasarkan Badan Standar Nasional Pendidikan. *Jurnal Pendidikan Kimia*, 8(1), 12–18. <https://doi.org/10.24114/jpkim.v8i1.4420>
- Grosch, M., Berger, R., Gidion, G., & Romeo, M. (2014). Which Media Services do Students Use in Fact? Results of an International Empirical Survey. *Procedia - Social and Behavioral Sciences*, 141, 795–806. <https://doi.org/10.1016/j.sbspro.2014.05.139>
- Handayani, D. (2020). Pemanfaatan Youtube Pada Saat Pandemi COVID-19 untuk Media Pembelajaran Bahasa Inggris dalam Meningkatkan Vocabulary dan Pemahaman Siswa.

- Jupendik: Jurnal Pendidikan*, 4(2), 12–18. Retrieved from <https://jupendik.or.id/index.php/jupendik/article/view/33>
- Handrianto, B. (2010). *Islamisasi Sains Sebuah Upaya Mengislamkan Sains Barat Modern*. Pustaka Al-Kautsar.
- Harahap, A. (2018). Integrasi Al Quran dan Materi Pembelajaran Kurikulum Sains Pada Tingkat Sekolah di Indonesia: Langkah Menuju Kurikulum Sains Berbasis Al Quran. *Jurnal Penelitian Medan Agama*, 9(1), 21–46. Retrieved from <http://jurnal.uinsu.ac.id/index.php/medag/article/view/3963>
- Haryadi and Selviani. (2021). Problematika Pembelajaran Daring di Masa Pandemi C. *AoEJ: Academy of Education Journal*, 12(2), 254–261. <https://doi.org/10.47200/aoej.v12i2.447>
- Hatmo, S. H. D. (2021). Dampak Pandemi Covid-19 Terhadap Efektivitas Pembelajaran Jarak Jauh Secara Daring. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, 11(2), 115–122. Retrieved from <https://ejournal.uksw.edu/scholaria/article/view/4222>
- Hidayani. (2016). *Studi Korelasi Antara Prestasi Pendidikan Agama dengan Akhlakul Karimah Siswa Kelas V SD Negeri 2 Bedudu Kecamatan Belalan Kab. Lampung Barat Tahun Pelajaran 2015/2016 [Institut Agama Islam Ma'arif NU]*. Institut Agama Islam Ma'arif NU.
- Ichsan, I. Z., Dewi, A. K., Hermawati, F. M., & Iriani, E. (2018). Pembelajaran IPA dan Lingkungan: Analisis Kebutuhan Media Pembelajaran pada SD, SMP, SMA di Tambun Selatan, Bekasi. *JIPVA (Jurnal Pendidikan IPA Veteran)*, 2(2), 131. <https://doi.org/10.31331/jipva.v2i2.682>
- Ika Handarini, O., & Sri Wulandari, S. (2020). Pembelajaran Daring Sebagai Upaya Study From Home (SFH) Selama Pandemi Covid 19. *Jurnal Pendidikan Administrasi Perkantoran*, 8(3), 496–503. Retrieved from <https://journal.unesa.ac.id/index.php/jpap>
- Ilsa, A., Farida, & Harun, M. (2020). Pengembangan Video Pembelajaran dengan Menggunakan Aplikasi Powerdirector 18 di Sekolah Dasar. *Jurnal Basicedu*, 5(1), 288–301. <https://doi.org/10.31004/basicedu.v5i1.643>
- Jaelani, A., Fauzi, H., Aisah, H., & Yulianti Zaqiyah, Q. (2020). Penggunaan Media Online dalam Proses Kegiatan Belajar Mengajar PAI di Masa Pandemi COVID-19 (Studi Pustaka dan Observasi Online). *Jurnal Ika PGSD (Ikatan Alumni PGSD)*, 8(1). <https://doi.org/10.36841/pgsdunars.v8i1.579>
- Jatiningtias, N. H. (2017). *Pengembangan Media Pembelajaran Powtoon Untuk Meningkatkan Hasil Belajar Siswa Mata Pelajaran IPS Materi Penyimpangan Sosial di SMP Negeri 15 Semarang [Universitas Negeri Semarang]*. Universitas Negeri Semarang.
- Johari, A., Hasan, S., & Rakhman, M. (2014). Penerapan Media Video dan Animasi Pada Materi Memvakum dan Mengisi Refrigeran Terhadap Hasil Belajar Siswa. *Journal of Mechanical Engineering Education*, 1(1), 8–15.
- Joshi, A., Vinay, M., & Bhaskar, P. (2021). Impact of coronavirus pandemic on the Indian education sector: perspectives of teachers on online teaching and assessments. *Interactive Technology and Smart Education*, 18(2), 205–226. <https://doi.org/10.1108/ITSE-06-2020-0087>
- Juliana, E. E., & Haryati, S. (2017). Pengembangan Media Pembelajaran Berbasis Powtoon Pada Pokok Bahasan Koloid di SMA/MA. *Jurnal Online Mahasiswa: Fakultas Keguruan Dan Ilmu Pendidikan*, 4(1), 1–10. Retrieved from <https://jom.unri.ac.id/index.php/JOMFKIP/article/view/13338>

- Khasanah, K., Nasan, E., & Jus'aini, J. (2021). Efektivitas Media Whatsapp Group dalam Pembelajaran Daring. *Akademika*, 10(1), 47–75. <https://doi.org/10.34005/akademika.v10i01.1339>
- Kholis, N. (2014). Paradigma Pendidikan Islam dalam Undang-Undang SISDIKNAS 2003. *Jurnal Kependidikan*, 2(1), 71–86. <https://doi.org/10.24090/jk.v2i1.542>
- Kisworo, B., & Azizah, D. (2018). Pengintegrasian Materi Struktur Atom pada Mata Pelajaran Kimia Berbasis Nilai-Nilai Qur'ani. *Pancasakti Science Education Journal*, 3(2), 99–108. Retrieved from <https://www.scienceeducationjournal.org/index.php/PSEJ/article/view/106>
- Lailiyah, S. (2020). Keilmiah Sains Adalah Bukti Kebenaran Al Qur'an. *Jurnal Penelitian Dan Pengabdian Kepada Masyarakat*, 2(2), 204–217. Retrieved from <https://ojs.unsiq.ac.id/index.php/semnaspf/article/view/1412>
- Langitasari, I., Rogayah, T., & Solfarina, S. (2021). Problem-Based Learning (PBL) Pada Topik Struktur Atom: Keaktifan, Kreativitas, dan Prestasi Belajar Siswa. *Jurnal Inovasi Pendidikan Kimia*, 15(2), 2813–2823. <https://doi.org/10.15294/jipk.v15i2.24866>
- Larasati, A. D., Lepiyanto, A., Sutanto, A., & Asih, T. (2020). Pengembangan E-Modul Terintegrasi Nilai-Nilai Islam Pada Materi Sistem Respirasi. *Didaktika Biologi: Jurnal Penelitian Pendidikan Biologi*, 4(1), 1–9. Retrieved from <https://jurnal.um-palembang.ac.id/dikbio/article/view/2766>
- Lestari, Y. A., & Dewi, T. A. (2020). Pengembangan Media Pembelajaran Powtoon Terintegrasi Nilai-Nilai Keislaman Kelas X MAN 1 Metro. *Jurnal Promosi: Jurnal Pendidikan Ekonomi UM Metro*, 8(2), 114–122. <https://doi.org/10.24127/pro.v8i2.3319>
- Lindfors, E., & Hilmola, A. (2015). Innovation learning in comprehensive education? *International Journal of Technology and Design Education*, 26(3), 373–389. <https://doi.org/10.1007/s10798-015-9311-6>
- Luh Devi, H., Nurhasanah, N., Maria Enjelina, S., & Kuswanto, H. (2020). Pembelajaran Pada Masa Pandemi Covid-19. *JTP - Jurnal Teknologi Pendidikan*, 22(1), 65–70. <https://doi.org/10.21009/jtp.v22i1.15286>
- Mampate, E. D. (2020). *Identifikasi Pemahaman Siswa Pada Materi Struktur Atom di Kelas X Menggunakan Three-tier Multiple Choice di SMA Negeri 1 Darul Imarah [UIN Ar-Raniry]*. UIN Ar-Raniry.
- Mar'ah, N., Rusilowati, A., & Sumarni, W. (2020). Perubahan Proses Pembelajaran Daring Pada Siswa Sekolah Dasar di Tengah Pandemi Covid-19. *Prosiding Seminar Nasional Pascasarjana*. Retrieved from <https://proceeding.unnes.ac.id/index.php/snpsasca/article/view/660>
- Mastura, M., & Santaria, R. (2020). Dampak Pandemi Covid-19 terhadap Proses Pengajaran Bagi Guru dan Siswa. *Jurnal Studi Guru Dan Pembelajaran*, 3(2), 289–295. <https://doi.org/10.30605/jsgp.3.2.2020.293>
- Mentari, L., Suardana, N., & Subagia, I. W. (2017). Analisis Miskonsepsi Siswa SMA Pada Pembelajaran Kimia Untuk Materi Larutan Penyangga. *Jurnal Pendidikan Kimia Undiksha*, 1(1), 76–88. <https://doi.org/10.23887/jipk.v1i1.3975>
- Merry, S., S. D., M. P., & O. P. (2015). Biology students' perceptions of learning from video exemplars of practical techniques: Some lessons for teaching strategies. *Innovative Practice in Higher Education*, 2(2), 1–14.
- Miftah, M. (2013). Fungsi dan Peran Media Pembelajaran sebagai Upaya Peningkatan Kemampuan Belajar Siswa. *Kwangsan: Jurnal Teknologi Pendidikan*, 1(1), 95–105.

- Muderawan, I. W., Wiratma, I. G. L., & Nabila, M. Z. (2019). Analisis Faktor-Faktor Penyebab Kesulitan Belajar Siswa Pada Materi Kelarutan dan Hasil Kali Kelarutan. *Jurnal Pendidikan Kimia Indonesia*, 3(1), 17–23. <https://doi.org/10.23887/jpk.v3i1.20944>
- Munadi, M. (2016). Integration of Islam and Science: Study of Two Science Pesantrens (Trensain) in Jombang and Sragen. *Jurnal Pendidikan Islam*, 5(2), 287–304. <https://doi.org/10.14421/jpi.2016.52.287-303>
- Muslim, B., Ramli, M., & Nursarifah, D. U. (2021). Pengembangan Video Animasi Kimia Terintegrasi Keislaman Pada Materi Struktur Atom. *Jambura Journal of Educational Chemistry*, 3(2), 47–53. <https://doi.org/10.34312/jjec.v3i2.11568>
- Mustikaningrum, G., Pramusinta, L., Buamona, S. A. M. U., Cahyadi, E., & Istiqomah, W. (2020). Implementasi Pendidikan Karakter Terintegrasi Kurikulum dan Metode Pembelajaran Pada Masa Pandemi COVID-19. *Auladuna: Jurnal Pendidikan Dasar Islam*, 7(2), 154–164. <https://doi.org/10.24252/auladuna.v7i2a5.2020>
- Nadhiroh, K. (2018). *Manajemen Pembelajaran dengan Pendekatan Beyond Centers and Circle Time (BCCT) dalam Mengembangkan Multiple Intelligences Anak (Studi Kasus di TK IT Al Hikmah Semarang) [UIN Walisongo]*. UIN Walisongo.
- Nahdi, D. S., Rasyid, A., & Cahyaningsih, U. (2020). Meningkatkan Kompetensi Profesional Guru Melalui Pengembangan Media Pembelajaran Berbasis Teknologi Informasi. *Bernas: Jurnal Pengabdian Kepada Masyarakat*, 1(2), 76–81. <https://doi.org/10.31949/jb.v1i2.234>
- Ningrum, L. S., Supardi, K. I., Jumaeri, & Haryani, S. (2020). Pengembangan Karakter Religius Peserta Didik Melalui Pembelajaran Kimia Materi Hidrokarbon SMK. *Jurnal Inovasi Pendidikan Kimia*, 14(1), 2490–2497. Retrieved from <https://journal.unnes.ac.id/nju/index.php/JIPK/article/view/21335>
- Nur Syasya Karim, & Meredian Alam. (2021). Struggling with Digital Pandemic: Students' Narratives about Adapting to Online Learning at Home during the COVID-19 Outbreak. *Southeast Asia: A Multidisciplinary Journal*, 21(2), 15–29.
- Nurdiana, A. S., Hanafi, S., & Nulhakim, L. (2021). Pengembangan Media Video Pembelajaran Animasi Berbasis Kinemaster Untuk Meningkatkan Efektivitas Pada Mata Pelajaran IPA Siswa Kelas IV SDN Kedaleman IV. *Primary: Jurnal Pendidikan Guru Sekolah Dasar*, 10(6), 1554–1564. <https://doi.org/10.33578/jpkip.v10i6.8395>
- Nurhafidah. (2021). *Faktor yang Berhubungan dengan Kepatuhan Masyarakat Terhadap Protokol Kesehatan Pencegahan COVID-19 dengan Pendekatan Health Belief Model (HBM) di Kecamatan Enrekang [UIN Alauddin Makassar]*. Retrieved from <http://repositori.uin-alauddin.ac.id/20311/>
- Nurrita, T. (2018). Pengembangan Media Pembelajaran untuk Meningkatkan Hasil Belajar Siswa. *Misykat*, 3(1), 171–188. <https://doi.org/10.33511/misykat.v3i1.52>
- Nursarifah, U. (2021). *Pengembangan Video Animasi Kimia Terintegrasi Keislaman Pada Materi Struktur Atom*. UIN Syarif Hidayatullah.
- Parawansa, K. I. (2022). Pelaksanaan Pembelajaran Daring Berbantuan Video Youtube Siswa Kelas 3 SD. *Nautical: Jurnal Ilmiah Multidisiplin*, 1(1), 15–20.
- Ponza, P. J. R. (2018). Pengembangan Media Video Animasi Pada Pembelajaran Siswa Kelas IV di Sekolah Dasar. *Jurnal EDUTECH Universitas Pendidikan Ganesha*, 6(1), 9–19. Retrieved from <https://ejournal.undiksha.ac.id/index.php/JEU/article/view/20257>
- Priliyanti, A., Muderawan, I. W., & Maryam, S. (2021). Analisis Kesulitan Belajar Siswa Dalam Mempelajari Kimia Kelas XI. *Jurnal Pendidikan Kimia Undiksha*, 5(1), 11–18. Retrieved from <https://ejournal.undiksha.ac.id/index.php/JJPK/article/view/32402>

- Purwaningrum, S. (2015). Elaborasi Ayat-Ayat Sains dalam Al-Qur'an: Langkah Menuju Integrasi Agama dan Sains dalam Pendidikan. *Inovatif: Jurnal Penelitian Pendidikan, Agama & Kebudayaan*, 1(1), 124–140. Retrieved from <http://jurnal.iaih.ac.id/index.php/inovatif/article/view/16>
- Purwanto, Y., & Rizki, S. (2015). Pengembangan Bahan Ajar Berbasis Kontekstual Pada Materi Himpunan Berbantu Video Pembelajaran. *Aksioma Jurnal*, 4(1), 67–77. <https://doi.org/10.24127/ajpm.v4i1.95>
- Qurniati, D. (2021). Pengembangan Bahan Ajar Kimia Kontekstual Terintegrasi Keislaman. *Chemistry Education Practice*, 4(2), 187–193. <https://doi.org/10.29303/cep.v4i2.2535>
- Qurrotaini, L., Sari, T. W., Sudi, V. H., & Nurmalia, L. (2020). E-Efektivitas Penggunaan Media Video Berbasis Powtoon dalam Pembelajaran Daring. *Prosiding Seminar Nasional Penelitian LPPM UMJ*, 1–7. Retrieved from <https://jurnal.umj.ac.id/index.php/semnaslit/article/view/7869/4682>
- Rahim, F. R., & Suherman, D. S. (2019). Analisis Kompetensi Guru dalam Mempersiapkan Media Pembelajaran Berbasis Teknologi Informasi Era Revolusi Industri 4.0. *Jurnal Eksakta Pendidikan*, 3(2), 133–141. <https://doi.org/10.24036/jep/vol3-iss1/367>
- Ramzi. (2004). *Mengintegrasikan Ilmu Pengetahuan dan Ilmu Agama*. Perta.
- Ridlo, I. A. (2020). Pandemi COVID-19 dan Tantangan Kebijakan Kesehatan Mental di Indonesia. *Jurnal Psikologi Dan Kesehatan Mental*, 5(2), 155–164. <https://doi.org/10.20473/jpkm.V5I22020.162-171>
- Roy, D., Tripathy, S., Kar, S. K., Sharma, N., Verma, S. K., & Kaushal, V. (2020). Study of Knowledge, Attitude, Anxiety & Perceived Mental Healthcare Need in Indian Population During COVID-19 Pandemic. *Asian Journal of Psychiatry*, 51, 1–7. <https://doi.org/10.1016/j.ajp.2020.102083>
- Rumaksari, A. N. (2021). Pembelajaran Daring: Ancaman Perusahaan EdTech Pada Sekolah Ditengah Pandemi Covid-19. *Jurnal Pendidikan Dan Kebudayaan*, 11(1), 30–36. <https://doi.org/10.24246/j.js.2021.v11.i1.p30-36>
- Sa'adah, & Wahyu. (2020). *Metode Penelitian R&D (Research and Development) Kajian Teoritis dan Aplikatif*. Literasi Nusantara.
- Sadhu, S. (2019). Uncover Student's Alternative Conception in Acid-Base Theory Using a Modified Certainty of Response Index Instrument. *Formatif: Jurnal Ilmiah Pendidikan MIPA*, 9(1), 11–22. <https://doi.org/10.30998/formatif.v9i1.2646>
- Sakiah, N. A., & Effendi, K. N. S. (2021). Analisis Kebutuhan Multimedia Interaktif Berbasis PowerPoint Materi Aljabar Pada Pembelajaran Matematika SMP. *Jurnal Penelitian Pendidikan Dan Pengajaran Matematika*, 7(1), 39–48. <https://doi.org/10.37058/jp3m.v7i1.2623>
- Saleh, A. M. (2020). Problematika Kebijakan Pendidikan Di Tengah Pandemi Dan Dampaknya Terhadap Proses Pembelajaran Di Indonesia. *Open Science Framework*. <https://doi.org/10.31219/osf.io/pg8ef>
- Salsabila, U. H., Habiba, I. S., Amanah, I. L., Istiqomah, N. A., & Difany, S. (2020). Pemanfaatan Aplikasi Quizizz Sebagai Media Pembelajaran Ditengah Pandemi Pada Siswa SMA. *Jurnal Ilmiah Ilmu Terapan Universitas Jambi*, 4(2), 163–173. <https://doi.org/10.22437/jiutuj.v4i2.11605>
- Sapriyah. (2019). Media Pembelajaran dalam Proses Belajar Mengajar. *Prosiding Seminar Nasional Pendidikan FKIP UNTIRTA*, 2(1), 470–477. Retrieved from <https://jurnal.untirta.ac.id/index.php/psnp/article/view/5798>

- Sari, N. D., & Vebrianto, R. (2017). Pengembangan Multimedia Interaktif Pembelajaran Kimia Materi Koloid Terintegrasi Nilai-Nilai Keislaman: Studi Literatur. *Prosiding Seminar Nasional Teknologi Informasi, Komunikasi Dan Industri (SNTIKI) 9*, 696–702. Retrieved from <http://ejournal.uin-suska.ac.id/index.php/SNTIKI/article/view/3193>
- Sariati, N. K., Suardana, I. N., & Wiratini, N. M. (2020). Analisis Kesulitan Belajar Kimia Siswa Kelas XI Pada Materi Larutan Penyangga. *Jurnal Imiah Pendidikan Dan Pembelajaran*, 4(1), 86–97.
- Savita, O. (2018). Strategi Pendidikan Karakter Berbasis Nilai Religius di SMA Negeri 5 Yogyakarta. *Jurnal Kebijakan Pendidikan*, 7(3), 251–263.
- Seda Yıldırım, Seda H. Bostancı, D. Çağrı Yıldırım, & Fatma Erdogan. (2021). Rethinking mobility of international university students during COVID-19 pandemic. *Higher Education Evaluation and Development*, 15(2), 98–113.
- Shofa, M., Nailufa, L. E., & Haqiqi, A. K. (2020). Pembelajaran IPA Terintegrasi Al-Quran dan Nilai-Nilai Pesantren. *IJIS Edu : Indonesian Journal of Integrated Science Education*, 2(1), 81–90. <https://doi.org/10.29300/ijisedu.v2i1.1928>
- Siahaan, M. (2020). Dampak Pandemi Covid-19 Terhadap Dunia Pendidikan. *Jurnal Kajian Ilmiah*, 1(1), 73–80. <https://doi.org/10.31599/jki.v1i1.265>
- Sirait, E. D. (2016). Pengaruh Minat Belajar Terhadap Prestasi Belajar Matematika. *Formatif: Jurnal Ilmiah Pendidikan MIPA*, 6(1), 35–43. <https://doi.org/10.30998/formatif.v6i1.750>
- Solviana, M. D. (2020). Pemanfaatan Teknologi Pendidikan di Masa Pandemi COVID-19: Penggunaan Fitur Gamifikasi Daring di Universitas Muhammadiyah Pringsewu Lampung. *Al-Jahiz: Journal of Biology Education Research*, 1(1), 1–14. <https://doi.org/10.32332/al-jahiz.v1i1.2082>
- Subarkah, C. Z. (2021). *Disain pembelajaran integrasi Sains-Islam mengenai zāt aditif pada makanan untuk meningkatkan hasil belajar mahasiswa [UIN Sunan Gunung Djati Bandung]*. Retrieved from <http://digilib.uinsgd.ac.id/47366/>
- Sunami, M. A., & Aslam, A. (2021). Pengaruh Penggunaan Media Pembelajaran Video Animasi Berbasis Zoom Meeting terhadap Minat dan Hasil Belajar IPA Siswa Sekolah Dasar. *Jurnal Basicedu*, 5(4), 1940–1945. <https://doi.org/10.31004/basicedu.v5i4.1129>
- Sunandar, B. (2020). *Penggunaan Media Video Animasi dalam Pembelajaran Pendidikan Agama Islam Kelas VIII Di SMP Qur'an Nurul Huda Pesawaran [UIN Raden Intan]*. UIN Raden Intan.
- Suranto, A. (2020). *Problematika Guru dalam Menerapkan Media Video Pada Pembelajaran Tematik Kelas Rendah di SDN Mukiran 03 [Universitas Muhammadiyah Surakarta]*. Universitas Muhammadiyah Surakarta.
- Susilo, A., & Widiya, M. (2021). Video Animasi Sebagai Sarana Meningkatkan Semangat Belajar Mata Kuliah Media Pembelajaran di STKIP PGRI Lubuklinggau. *Jurnal Eduscience*, 8(1), 30–38. <https://doi.org/10.36987/jes.v8i1.1972>
- Tahir, M. (2021). Pengembangan Modul Pembelajaran PPKN Terintegrasi Islam pada MA di Kota Batam. *Jurnal An-Nur*, 10(2), 13–20. Retrieved from <https://ejournal.uin-suska.ac.id/index.php/Annur/article/view/15457>
- Veen C. V. D., & Oers, B. V. (2017). Advances in research on classroom dialogue: Learning outcomes and assessments. *Elsevier Journals*, 48, 1–4. <https://doi.org/10.1016/j.learninstruc.2017.04.002>

- Vethanayagam, A. L., & Hemalatha, F. S. R. (2010). *Effect of Environmental Education to School Children Through Animation Based Educational Video*. 10, 10–17. Retrieved from <http://languageinindia.com/may2010/anandlenin12.html>
- Wahyuni, E. D., Fiqqih, A. R., Kholimi, A. S., & Husniah, L. (2020). Pengembangan media pembelajaran bilangan pecahan kelas VII menggunakan metode MDLC di MTs Muhammadiyah 1 Malang. *Sentra*, 2(1), 350–357.
- Walangadi, H., & Pratama, W. P. (2018). Meningkatkan Pemahaman Belajar Siswa Menggunakan Media Video Animasi 2D. *Jurnal Ilmu Pendidikan Nonformal*, 4(3), 201–208. <https://doi.org/10.37905/aksara.4.3.201-208.2018>
- Widiasih, R., Widodo, J., & Kartini, T. (2018). Pengaruh Penggunaan Media Bervariasi dan Motivasi Belajar Terhadap Hasil Belajar Mata Pelajaran Ekonomi Siswa Kelas XI IPS SMA Negeri 2 Jember Tahun Pelajaran 2016/2017. *Jurnal Ilmiah Ilmu Pendidikan, Ilmu Ekonomi Dan Ilmu Sosial*, 11(2), 103–107. <https://doi.org/10.19184/jpe.v11i2.6454>
- Widiyowati, I. I. (2014). Hubungan Pemahaman Konsep Struktur Atom dan Sistem Periodik Unsur Dengan Hasil Belajar Kimia Pada Pokok Bahasan Ikatan Kimia. *Pancaran Pendidikan*, 3(4), 99–116. Retrieved from <https://jurnal.unej.ac.id/index.php/pancaran/article/view/989>
- Wulandari, Y., Ruhiat, Y., & Nulhakim, L. (2020). Pengembangan Media Video Berbasis Powtoon pada Mata Pelajaran IPA di Kelas V. *Jurnal Pendidikan Sains Indonesia*, 8(2), 269–279. <https://doi.org/10.24815/jpsi.v8i2.16835>
- Yusuf, M. M., Amin, M., & Nugrahaningsih, N. (2017). Developing of Instructional Media-Based Animation Video on Enzyme and Metabolism Material in Senior High School. *Jurnal Pendidikan Biologi Indonesia*, 3(3), 254–257. <https://doi.org/10.22219/jpbi.v3i3.4744>
- Zain, Z., & Vebrianto, R. (2017). Integrasi Keilmuan Sains dan Islam dalam Proses Pembelajaran Rumpun IPA. *Seminar Nasional Teknologi Informasi, Komunikasi Dan Industri 9*, 703–708. Retrieved from <http://ejournal.uin-suska.ac.id/index.php/SNTIKI/article/view/3198>
- Zalat, M. M., Hamed, M. S., & Bolbol, S. A. (2021). The experiences, challenges, and acceptance of e-learning as a tool for teaching during the COVID-19 pandemic among university medical staff. *PLoS ONE*, 16(3 March). <https://doi.org/10.1371/journal.pone.0248758>