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Developing Remedial Learning Videos on Algebraic Expression Material in Junior High Schools

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Abstrak

Pelaksanaan pembelajaran remedial yang terjadi saat ini dianggap belum sesuai dengan Permendikbud No 103 tahun 2014 karena guru mengalami keterbatasan waktu. Penggunaan video pembelajaran remedial berbasis e-learning merupakan salah satu upaya yang dapat dilakukan dalam mengatasi keterbatasan tersebut. Penelitian ini bertujuan untuk mengembangkan video pembelajaran remedial berbasis e-learning pada materi bentuk aljabar yang memenuhi kriteria valid, praktis, dan efektif. Penelitian ini merupakan penelitian pengembangan (Research and Development) dengan model pengembangan ADDIE. Subjek dalam penelitian ini adalah 82 Siswa Kelas VIII dari tiga jenjang sekolah Banda Aceh. Pengumpulan data dilakukan dengan lembar validasi video, angket respon siswa, dan tes remedial menggunakan e-learning. Berdasarkan hasil penelitian menunjukkan bahwa video pembelajaran remedial diperoleh rerata validasi adalah 98.40% memiliki kriteria sangat valid, hasil respon siswa sebesar 83.28% memiliki kriteria praktis, dan efektif berdasarkan peningkatan hasil belajar siswa dilihat dari N-Gain pada tes diagnostik dan tes remedial sebesar 0.57 pada kategori sedang.
Kata Kunci: Bentuk Aljabar; Remedial Berbasis E-Learning; Video Pembelajaran Remedial

Abstract

The current implementation of remedial learning is considered not in accordance with Permendikbud (Regulation of the Minister of Education and Culture) No. 103 of 2014 because teachers experience time constraints. Using remedial learning videos based on e-learning is one of the efforts that can be made to overcome these constraints. This study aimed to develop remedial learning videos based on e-learning on algebraic forms material that met valid, practical, and effective criteria. This study used the research and development approach with the ADDIE development model. The subjects in this study were 82 Grade VIII students at three levels of school in Banda Aceh. The instruments used were a validation sheet, student response questionnaire, and remedial test using e-learning. Based on the results of the study, the validation average obtained is 98.40% with very valid criteria, student response obtained at 83.28% with practical criteria, and effective based on the increase in student learning outcomes seen from the N-Gain on the diagnostic test and remedial test of 0.57 in the moderate category.
Keywords: Algebraic Forms; E-Learning Based Remedial; Remedial Learning Videos

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I. INTRODUCTION

Education is a planned effort in carrying out and realizing a continuous learning process (Nasrudin & Maryadi, 2019; Sari et al., 2023). However, there are still problems faced by teachers related to student learning outcomes that have not met the minimum criteria in terms of mastery of the competencies being studied. For student learning outcomes that have not met the Minimum Criteria for Completeness (KKM), remedial learning is needed (Gusal, Ramlawati, & Rusli, 2021).

Remedial learning aims to improve learning activities that become obstacles or cause problems for students (Nurmartarina & Novita, 2021). Students who are lagging behind in mastering competency standards can be helped by providing opportunities to re-understand materials that have been previously taught through remedial learning (Yolida et al., 2021). Providing remedial learning is carried out after a diagnostic evaluation or test on students (Yasir, 2016).

The current implementation of remedial learning is considered not in accordance with Permendikbud (Regulation of the Minister of Education and Culture) No. 103 of 2014 that teachers are asked to carry out remedial learning and enrichment programs. Based on the findings obtained by Lidi (2019), 87% of teachers do not carry out remedial learning. In general, the implementation of remedial only provides retests without paying attention to indicators that have not been mastered by each student. This is caused by limited time, so students need remedial learning outside the classroom (Fitriza et al., 2018; Septia et al., 2023).

Difficulty in learning is a common problem that can occur in learning activities. Difficulty in learning can be interpreted as students' difficulties in receiving or absorbing lessons at school because learning activities for each individual do not always go well (Ningsih, Amaliyah, & Rini, 2021; Saputra & Cesaria, 2023). Many students also experience difficulty in learning the operations of algebraic forms (Safitra, Mulyono, & Susanti, 2023; Putri & Nasution, 2023). Thus, it becomes a problem of understanding because students cannot interpret symbols and rules in algebra (Malihatuddarojah & Prahmana, 2019; Wahyuni, Herman, & Fatimah, 2023).

Remedial learning conditions that occur in general need to be updated so students can gain additional knowledge even though the learning time that takes place in the class has limitations. Efforts to overcome the limited time available at school become a reference in developing learning media in the form of learning videos (Priyadi, Kusairi, & Indrasari, 2018). Learning videos are an alternative for students to improve their learning.

Learning content delivered via videos will be easier for students to remember because they use the senses of seeing and hearing simultaneously. Learning video as

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an audio-visual-based media can improve students' memory from 14% to 38%. This is an alternative for teachers to improve students' memory and understand learning material videos (Priyadi, Kusairi, & Indrasari, 2018). Learning videos are electronic learning media containing knowledge and insight into the theory and application of material to everyday life (Ulyana, Abidin, & Husna, 2019).

Technological advances can be optimally utilized in today's education such as knowledge development through e-learning (Utami & Cahyono, 2020). E-learning is internet-based learning that is used to gain knowledge easily and improve student skills (Mu'minah & Gaffar, 2020). Some resources in e-learning include learning websites, virtual classes, learning videos, e-books, etc. E-learning will make it easier for teachers in remedial learning by providing remedial learning videos to students that can be accessed anywhere.

Several researchers have implemented remedial learning videos. A study by Muharrifa, et al. (2018) shows that the use of flash animation videos to remediate students on Newton's laws of gravity is quite effective. Furthermore, a study by Gusal, Ramlawati, & Rusli (2021) shows that the use of remedial learning videos on air and simple aircraft material has increased student learning outcomes. However, there are no researchers who have used remedial learning videos based on e-learning on algebraic forms material. Therefore, researchers wanted to apply remedial learning videos to improve student learning outcomes in algebraic forms material.

Based on the explanation, the researchers wished to carry out a study with the formulation of the problem "How to develop remedial learning videos based on e-learning on algebraic forms material in Junior High Schools that meet valid, practical, and effective criteria?"

II. METHOD

This study used a Research and Development (RnD) approach. The development model used was the ADDIE development model consisting of 5 stages namely, (1) analysis, (2) design, (3) development, (4) implementation, and (5) evaluation (Branch, 2009).

This study was carried out in three junior high schools (SMPN) in Banda Aceh, namely SMPN 6, SMPN 9, and SMPN 4 with 82 students as subjects. Data collection techniques in this study were video validation sheet, student response questionnaire, and remedial test using e-learning. The validity of the remedial learning video is carried out using the video validation sheet found in Table 1.

Table 1.
An Outline of Video Validation Sheet

Aspect	Indicator	Item number
Video Contents	1. Videos are packaged to be relevant to the subject taught. 2. Videos contain interactive	1, 2, 3

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Aspect	Indicator	Item number
	questions. 3. Using guiding questions.	
Video Presentation	1. Using gestures to indicate important information. 2. Using segmentation to cut up information. 3. Sorting to eliminate extraneous information. 4. Matching auditory and visual media to convey additional information. 5. Short videos. 6. Using everyday language that is easy for students to understand. 7. Speaking with enthusiasm.	4, 5, 6, 7, 8, 9, 10, 11, 12,13, 14, 15, 16, 17

(adaptation of Brames, 2016)

The average percentage score by all validators can be seen in the criteria for the percentage of eligibility in table 2 to determine the validity of the remedial learning video.

Table 2.
Validity Criteria for Remedial Learning Videos

Achievement rate (%)	Category	Information
80 – 100%	Very valid	No revision
66 – 79%	Valid	Partial revision
56 – 65%	Less Valid	Partial revision & reassessment
46 – 55%	Invalid	Full revision & review of material
0 – 45%	Very invalid	Total revision

(Arikunto, 2014)

The practicality of remedial learning videos was obtained through a student response questionnaire which aimed to obtain data related to student responses to the feasibility of remedial learning videos based on e-learning after using them.

Table 3.
An Outline of Student Response Questionnaire

Aspect	Indicator	Inquiry number
How to use	1. Use of videos 2. The order of the videos starts from the easiest to the most difficult	1, 2
Benefits/ advantages	1. Curiosity and student participation. 2. Students' positive feelings about their learning experience. 3. Positive expectations after using the media.	3, 4, 5, 6, 7

(Adaptation of (Astafiria & Bayu, 2021) and (Sutrisno & Buhari, 2021))

The average percentage score by all students can be seen through the practicality score interpretation criteria in table 4 to determine the practicality of e-learning based remedial learning videos.

Table 4.
Practicality Score Interpretation Criteria

No.	Interval Skor (%)	Category
1	81 – 100%	Very good
2	61 – 80%	Good
3	41 – 60%	Average
4	21 – 40%	Deficient
5	0 – 20%	Very Deficient

(Riduwan, 2012)

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The effectiveness of remedial learning videos was obtained by increasing student learning outcomes after using remedial learning videos with a KKM of 70 on diagnostic tests and remedial tests through N-Gain as follows (Meltzer, 2002):

$$N_g = \frac{\text{remedial test percentage} - \text{diagnostic test percentage}}{\text{maksimum percentage} - \text{diagnostic test percentage}}$$

The N-Gain score criteria can be seen in Table 5 where remedial learning videos are effective if they are in the moderate and high categories.

Table 5.
N-Gain Criteria

N-Gain (Ng) Value	Category
Ng ≥ 0.7	High
0.3 ≤ Ng > 0.7	Moderate
Ng < 0.3	Low

III. RESULT AND DISCUSSION

A. Result

1) Analysis

The first stage was analysis, the general procedures carried out at this stage were analyzing performance gaps, determining teaching objectives, and checking available resources. The analysis carried out was direct observations and interviews at several junior high schools in Banda Aceh. Observation and interview results is: (1) Students who had not reached KKM did not receive remedial learning due to time constraints. (2) Students were affected by learning loss in integer operations material, which caused students to experience difficulty in learning operating algebraic forms. (3) Based on the diagnostic test on the algebraic forms material at three different school levels, it shows that no students have achieved the KKM. The results of the diagnostic test can be seen in Table 6.

Table 6.
Diagnostic Test Results

School Level	The number of students	Completeness Percentage
High	28	38.21%
Moderate	25	30.8%
Low	29	26.9%
Average Achievment		31.97%

2) Design

The second stage was design (designing), at this stage the researchers designed remedial learning videos in accordance with the 2013 curriculum in mathematics subject in algebraic forms material in storyboard form. The videos developed are 6 videos with a duration of 3 - 6 minutes including in picture 1 is introduction to algebraic forms, in picture 2 is getting to know algebraic forms, in picture 3 is algebraic addition and subtraction videos, in picture 4 is algebraic addition and subtraction in word problems, in picture 5 is algebraic multiplication, and in picture 6 is algebraic division. The designs that have been made can be seen in the following:

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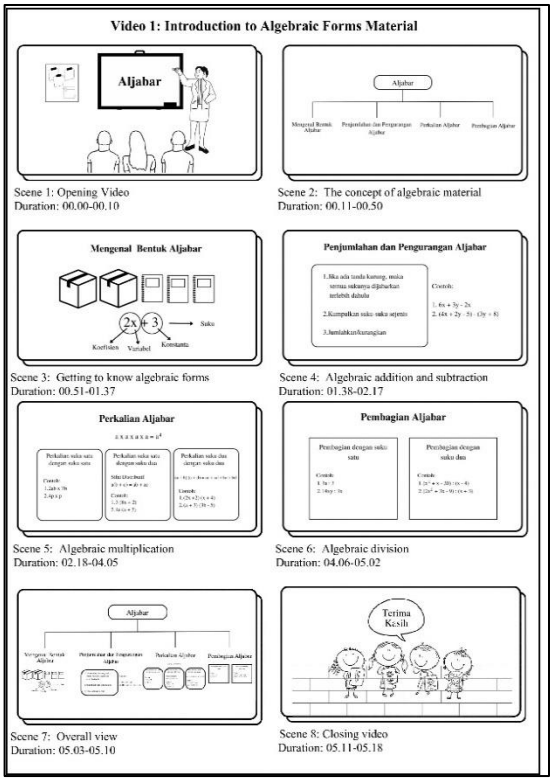

Figure 1. Design frame video 1

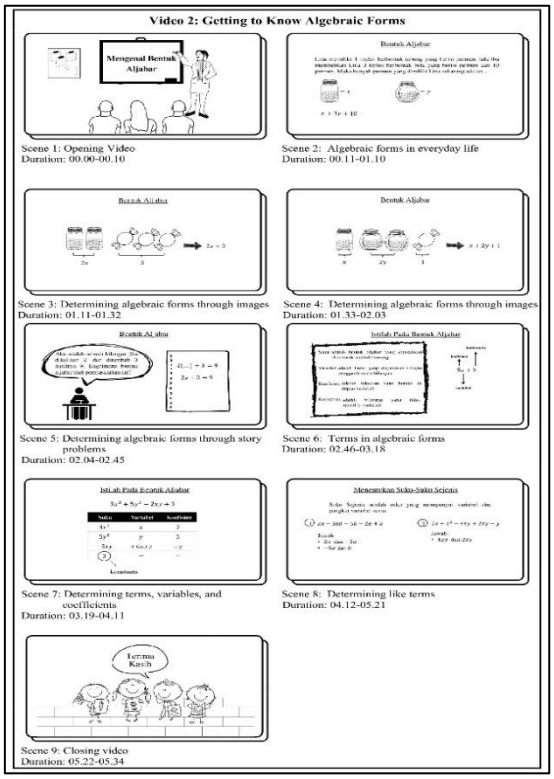

Figure 2. Design frame video 2

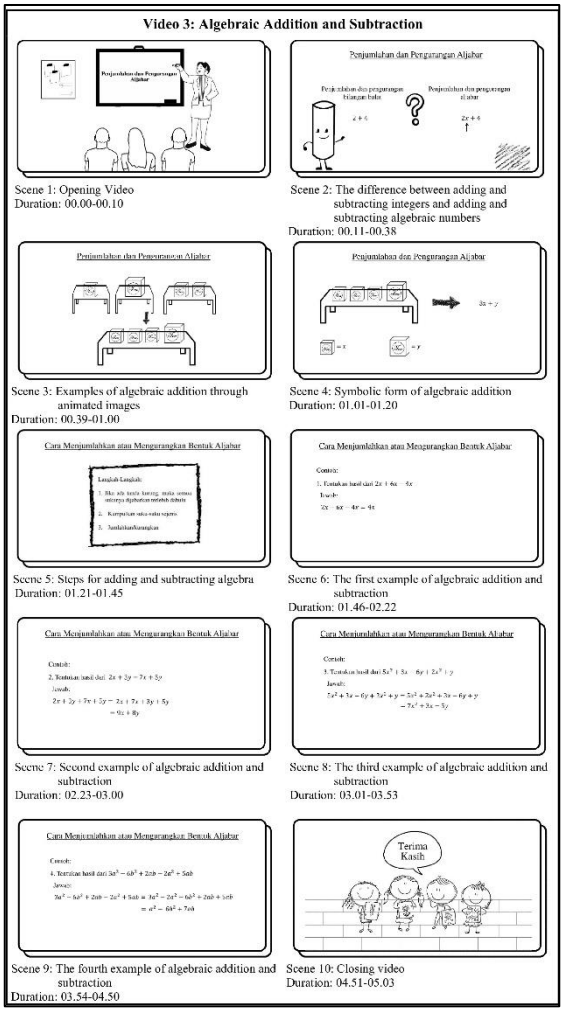

Figure 3. Design frame video 3

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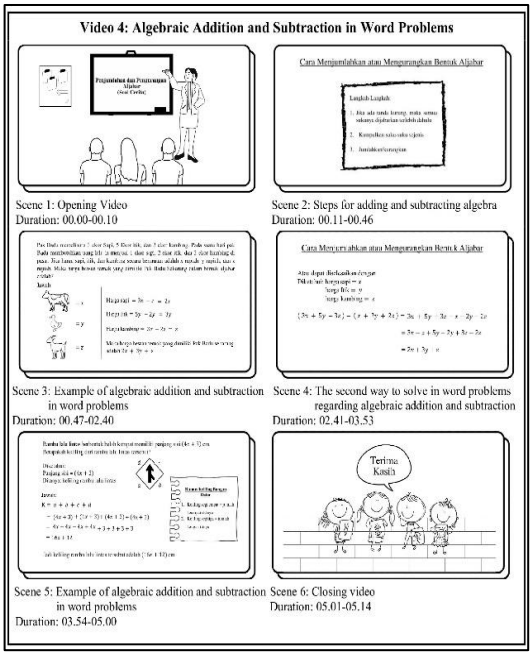

Figure 4. Design frame video 4

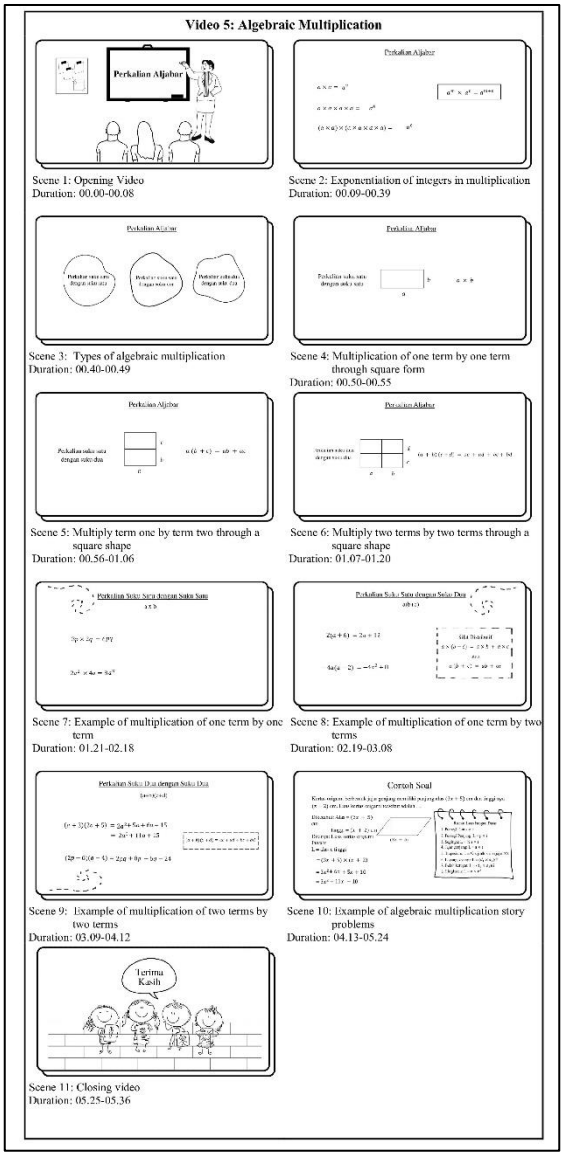

Figure 5. Design frame video 5

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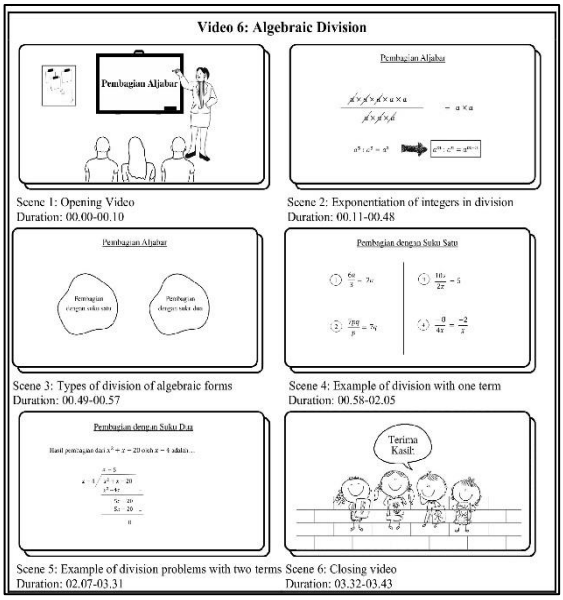

Figure 6. Design frame video 6

3) Development

The third stage was development, after designing a remedial learning video—the process of making a video was carried out. Validation was carried out by assessing the quality of remedial learning videos as learning media. Video validation was carried out by material expert lecturers, media expert lecturers, and mathematics teachers as practitioners. The capacities of the validators are mathematics education lecturers who have completed their master's studies at Universitas Syiah Kuala and mathematics teachers who have completed undergraduate studies. The results of video validation by the validators can be seen in Table 7.

Table 7.
Validation Results

Videos	Aspect		Average	Validity Level
	Contents	Presen-tation		
1	93.75%	96.88%	96.32%	Very Valid
2	91.67%	100%	98.53%	Very Valid
3	97.92%	99.55%	99.26%	Very Valid
4	93.75%	100%	98.90%	Very Valid
5	94.75%	99.55%	98.53%	Very Valid
6	93.75%	100%	98.90%	Very Valid

Table 7 shows the results of the six video validations by each validator. It can be seen that the percentage of the six videos is more than 96% with very valid criteria. The average result of the overall assessment of remedial learning videos is 98.40% thus remedial learning videos are valid to use.

4) Implementation

The implementation of remedial learning videos based on e-learning through the GetMath website. At this stage, a test of the practicality and effectiveness of valid remedial learning videos is carried out.

a) Student Response Results

There are two aspects of student responses, namely how to use and the benefits of videos with a total of seven questions. The results of student responses can be seen in Table 8.

Table 8.
Student Response Questionnaire Results

Aspects	School Level			Average	Criteria
	High	Moderate	Low		
How to use	83.57 %	82%	87.93 %	84.63 %	Very good
Benefi	83.29	81.03%	84%	82.73	Very

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Aspect	School Level			Average	Criteria
Average	85.37%	81.03%	85.12%	83.28%	Very good

Based on Table 8, remedial learning videos based on e-learning get an average percentage at different school levels of ≥ 80%, with very good criteria. It can be seen that the highest average percentage is at a low-level school, namely SMP Negeri 4 Banda Aceh, and the lowest average percentage is at a moderate-level school, namely SMP Negeri 9 Banda Aceh. The average overall student response is 83.28%, with very good criteria.

However, there were a number of subjects who were found to have high student response questionnaire results but low remedial test results. One of them, namely RH, was known to have a percentage of student response questionnaire of 88.57% but the remedial test result is only 40. Not only that but it was also found that there were a number of subjects who were found to have low student response questionnaire results but high remedial test results. One of them, namely SM, was known to have a percentage of student response questionnaire of 65.71% but the remedial test result is 90. Therefore, the researchers carried out an analysis of each student response questionnaire indicator at three school levels. Analysis of student response questionnaire indicators can be seen in Table 9.

Table 9.
Analysis of Student Response Questionnaire Indicators

Indicator	Average
1	84.15%
2	85.12%
3	84.88%
4	82.93%
5	80%
6	83.90%
7	81.95%

It can be seen that the lowest percentage of student response questionnaire indicators is on indicators 5 and 7. Indicator 5 is that the sound in the videos makes students being interested and motivated to learn and indicator 7 is that students can repeat material that they have not understood through remedial videos. Therefore, it is necessary to improve the sound quality of the video and also the presentation (display) of remedial learning videos.

b) Remedial Test Results

The effectiveness of remedial learning videos is seen from the increase in student understanding through remedial tests. The test results can be seen in table 10.

Table 10.
Remedial Test Results

School Level	The number of students	Completeness Percentage
High	28	72.5%
Moderate	25	68.8%
Low	29	71.72%
Completeness Average		71.10%

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Based on Table 10, it is obtained that the percentage of student completion at high, moderate and low school levels after participating in e-learning-based remedial learning as a whole is 71.10%, the N-Gain value is 0.58 which is in the moderate criteria. Therefore, remedial learning videos based on e-learning are effective.

5) Evaluation

Based on the stages of development and implementation, remedial learning videos based on e-learning on algebraic forms material are declared to be valid, practical, and effective. These remedial learning videos can help students overcome learning incompleteness and improve student understanding of learning in algebraic forms material.

B. Discussion

Remedial learning videos based on e-learning are easy to use, motivate students in learning, and make it easier for students to understand the material. This finding is in line with the results of a study by Nurwahidah, Zaharah, & Sina (2021) that the use of learning videos can increase student motivation in learning and improve learning achievement. Also, this is in line with a study by Sunami & Aslam (2021) that the use of learning videos greatly influences students' interest in learning.

There are several previous studies that have developed learning videos, namely studies by Priyadi, Kusairi, & Indrasari (2018), Rasiman, Prasetyowati, & kartinah (2020), and Wijaya, Hidayat, & Zhou (2020) showing that the learning videos developed are suitable for use by students. However, there are several differences between this study and previous studies, including the development model used, materials, and video presentations (displays). The video presentations (displays) in this study used animations by presenting/displaying text and images, while previous studies combined animation and real-life presentations (displays). This is in line with Ponza, Jampel, & Sudarma (2018) that learning animation videos are designed in such a way as to display writing (text), colorful pictures, audio (sound), and animation in one unit. The animation contained in the video is also a part that can attract students' attention to learning (Sidarta & Yunianta, 2022).

IV. CONCLUSION

Based on the results of the study, remedial learning videos based on e-learning on algebraic forms material are declared to be valid, practical, and effective. The validity analysis shows that the remedial learning videos obtain an average percentage of 98.40%, with very valid criteria. Practicality analysis shows that the remedial learning videos are obtained an average percentage of 83.28% in the very good category. Effectiveness is seen in the increase in student learning outcomes and the N-Gain test with a score

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of 0.57 in the moderate category. The suggestion that can be given based on these results is that it is necessary to carry out further development on the GetMath website, namely students and teachers can create personal accounts so that remedial learning can be carried out outside of school hours. Then further research is needed in improving the presentation (display) aspects of remedial learning videos with various animations.

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REFERENCES

Arikunto, S. (2014). *Prosedur Penelitian: Suatu Pendekatan Praktik (14th ed.).* Rineka Cipta.

Astafiria, N. S., & Bayu, G. W. (2021). Digital Learning Media Assisted by Quizizz Application (METALIQ) on Science Content of Ecosystem Topic for Sixth Grade Elementary School. *Jurnal Ilmiah Sekolah Dasar*, *5*(3), 485–497.

Brame, C. J. (2016). Effective Educational Videos: Principles and Guidelines for Maximizing Student Learning from Video Content. *CBE Life Sciences Education*, *15*(4), es6.1-es6.6.

Branch, R. M. (2009). *Approach, Instructional Design: The ADDIE*. In *Springer*.

Fitriza, Z., Iswendi, I., Iryani, I., & Aini, F. Q. (2018). Praktikalitas Penggunaan Media Sosial Pembelajaran Edmodo untuk Program Remedial dan Forum Diskusi Guru. *Jurnal Eksakta Pendidikan (Jep)*, *2*(1), 78–84.

Gusal, T. P., Ramlawati, & Rusli, M. A. (2021). Penerapan Video Tutorial Berbasis E-Learning Untuk Meningkatkan Ketuntasan Belajar Peserta Didik Remedial Kelas VIII SMPN 18 Makassar (Studi Pada Materi Pokok Usaha Dan Pesawat Sederhana). *Jurnal IPA Terpadu*, *5*(1), 64–74.

Lidi, M. W. (2019). Pembelajaran Remedial Sebagai Suatu Upaya dalam Mengatasi Kesulitan Belajar. *Foundasia*, *9*(1), 15–26.

Malihatuddarojah, D., & Prahmana, R. C. I. (2019). Analisis Kesalahan Siswa dalam Menyelesaikan Permasalahan Operasi Bentuk Aljabar. *Jurnal Pendidikan Matematika*, *13*(1), 1–8.

Meltzer, D. E. (2002). The relationship between mathematics preparation and conceptual learning gains in

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physics: A possible “hidden variable” in diagnostic pretest scores. *American Journal of Physics*, 70(12), 1259–1268.

Mu’minah, I. H., & Gaffar, A. A. (2020). Pemanfaatan E-Learning Berbasis Google Classroom Sebagai Media Pembelajaran Biologi. *Seminar Nasional Pendidikan*, 800–816.

Muharrifa, N. R., Tandililing, E., & Hamdani. (2018). Remediasi Miskonsepsi Siswa Menggunakan Video Animasi Flash tentang Gravitasi di SMA. *Jurnal Pendidikan Dan Pembelajaran Khatulistiwa*, *7*(4).

Nasrudin, N., & Maryadi, M. (2019). Manajemen Sarana dan Prasarana Pendidikan dalam Pembelajaran di SD. *Manajemen Pendidikan*, *13*(2), 15–23.

Ningsih, S. K., Amaliyah, A., & Rini, C. P. (2021). Analisis Kesulitan Belajar Matematika pada Siswa Kelas II Sekolah Dasar. *Berajah Journal*, *2*(1), 123–133.

Nurmartarina, D., & Novita, D. (2021). Strategi Konflik Kognitif Sebagai Pembelajaran Remedial Materi Laju Reaksi untuk Mereduksi Miskonsepsi Siswa Kelas XI MIPA SMAN 2 Blitar. *PENDIPA Journal of Science Education*, *5*(3), 328–336.

Nurwahidah, C. D., Zaharah, Z., & Sina, I. (2021). Media Video Pembelajaran dalam Meningkatkan Motivasi dan Prestasi Mahasiswa. *Rausyan Fikr: Jurnal Pemikiran Dan Pencerahan*, *17*(1), 118–127.

Ponza, P. J. R., Jampel, I. N., & Sudarma, I. K. (2018). Pengembangan Media Video Animasi pada Pembelajaran Siswa Kelas IV di Sekolah Dasar. *Jurnal EDUTECH Universitas Pendidikan Ganesha*, *6*(1), 9–19.

Priyadi, R., Kusairi, S., & Indrasari, N. (2018). Desain dan Pengembangan Video Pembelajaran Gerak Parabola Sebagai Fasilitas Remediasi Siswa. *Jurnal Pendidikan Matematika Dan Sains*, *4*(1), 20–28.

Putri, A., & Nasution, E. Y. P. (2023). Kemampuan Pemahaman Konsep Matematis Siswa MTs dalam Menyelesaikan Masalah Matematika pada Materi Bentuk Aljabar. *Plusminus: Jurnal Pendidikan Matematika*, *3*(1), 127-138.

Rasiman, Prasetyowati, D., & Kartinah. (2020). Development of Learning Videos for Junior High School Math Subject to Enhance Mathematical Reasoning. *International Journal of Education and Practice*, *8*(1), 18–25.

Riduwan. (2012). *Belajar Mudah Penelitian untuk Guru-Karyawan dan Peneliti Pemula*. Alfabeta.

Safitra, M. D., Mulyono, B., & Susanti, E. (2023). Numeration-Based Teaching Materials on Algebra Shape Materials for Blended Learning. *Mosharafa: Jurnal Pendidikan Matematika*, *12*(2), 375-388.

Saprudin, Hi. Abdullah, I., Haerullah, A., & Saraha, A. R. (2015). Pengembangan Media Video Tutorial Model

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Pembelajaran Berbasis Masalah pada Materi Kalor. *Edukasi*, *13*(2), 451–461.

Saputra, Y. A., & Cesaria, A. (2023). Students' errors in algebraic form operations based on newman's criteria. *Jurnal Inovasi Pembelajaran Matematika: PowerMathEdu*, *2*(3), 301-308.

Sari, I. K., Nasriadi, A., Amalia, Y., Musfiya, & Setiawati, F. A. (2023). Mathematical Representation Ability of Junior High School Students: A Case Study of Students' Cognitive Ability through Realistic Mathematics Education. *Mosharafa: Jurnal Pendidikan Matematika*, *12*(3), 453-464.

Septia, T., Rizki, U., Pertiwi, E. K. C. A., & Kiromi, M. M. (2023). Pengembangan Media Pembelajaran Monopoli Matematika Bernuansa Islami pada Materi Aljabar. *Plusminus: Jurnal Pendidikan Matematika*, *3*(3), 469-478.

Sidarta, C. A., & Yunianta, T. N. H. (2022). Pengembangan Video Animasi Pola Konfigurasi Objek untuk Pembelajaran Jarak Jauh. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, *12*(2), 127–138.

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.

Sutrisno, D., & Buhari, B. (2021). Designing Video Based Learning for Nursing Skills Procedures Video. *Journal of Physics: Conference Series*, *1810*(1), 1–8.

Ulyana, A., Abidin, Z., & Husna, A. (2019). Pengembangan Video Pembelajaran Kalor untuk Siswa Kelas VII. *Jinotep*, *5*(2), 81–86.

Utami, Y. P., & Cahyono, D. A. D. (2020). Study At Home: Analisis Kesulitan Belajar Matematika pada Proses Pembelajaran Daring. *Jurnal Ilmiah Matematika Realistik*, *1*(1), 20–26.

Wijaya, T. T., Hidayat, W., & Zhou, Y. (2020). Development of Interactive Learning Video on Linear Program. *Universal Journal of Educational Research*, *8*(12A), 7530–7538.

Yasir, I. (2016). Evaluasi Diagnostik dan Remedial oleh Guru dalam Proses Pembelajaran. *Jurnal BAPPEDA*, *2*(3), 186–192.

Yolida, B., Marpaung, R. R. T., Wiono, W. J., & Priadi, M. A. (2021). Peningkatan Profesionalisme Guru-Guru Biologi SMA di Kabupaten Tulang Bawang Barat Melalui Pelatihan Pembuatan Media Video Tutorial dan Implementasinya dalam Remedial Teaching. *Jurnal Pengabdian Kepada Masyarakat*, *5*(3), 160–164.

Wahyuni, R., Herman, T., & Fatimah, S. (2023). Letters in Algebra as the Transition from Arithmetic Thinking to Algebraic Thinking. *Mosharafa: Jurnal*

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Pendidikan Matematika, 12(3), 441-452.

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