

## How VIRTUE-BOOK Improves Integrity and Recovers Learning Loss for Elementary School Students

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### ARTICLE INFO

#### Keywords:

digital fairytale book;  
integrity;  
learning loss;  
learning recovery;  
elementary school

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#### Article history:

Received 2023-05-02

Revised 2023-05-29

Accepted 2023-11-06

### ABSTRACT

Digital-based learning media plays a vital role in improving the quality of student character and post-COVID-19 learning. This research aimed to explain how VIRTUE-BOOK improves integrity and recovers learning loss for elementary school students. This research is a research and development (R&D) with the ADDIE model. This research focuses on the implementation (I) and evaluation (E) stages. The research was carried out from August to September 2022. Implementation was carried out through a quasi-experiment with the subject of 3<sup>rd</sup>-grade elementary school students. There were 15 students for each of the experimental and control classes. Data collection used questionnaires (scales) and tests. Data analysis was performed by calculating the percentage of increasing the integrity index and decreasing learning loss, then calculating its effectiveness using MANOVA with a significance level of 5% (0,05); N-Gain test; and effect size test. The results of this research indicate that the digital fairytale book "VIRTUE-BOOK" can (1) increase the students' integrity index by 49,5% on the core values of integrity, namely honesty, responsibility, and discipline; (2) decrease the learning gap between what the students have learned and what the students were expected to learn (learning loss) by 116%; and (3) be effective in those improvement and recovery based on the results of the independent t-test, paired t-test, MANOVA test, N-Gain test, and effect size test. Therefore, it is concluded that VIRTUE-BOOK can improve students' integrity by increasing the integrity index and recovering the learning loss among students by decreasing the learning gap.

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## 1. INTRODUCTION

Several issues in the classroom can be traced back to the global spread of COVID-19. Closing schools because of the epidemic has been demonstrated in multiple studies to have a negative effect on student morale. The epidemic has had negative repercussions for morality (Campbell et al., 2020).

Dendir and Maxwell (2020) identify a rise in integrity as one of the most pressing character challenges for distance learners. Gamage's research (2020) shows that the effects of COVID-19 extend beyond the medical and financial spheres to include students' honesty in the classroom.

The problem of learning loss in schools is another consequence of the Covid-19 pandemic. Not every institution was prepared for the shift from traditional classroom instruction to online study when it was implemented nationwide. As a result of this issue, learning disability developed. Indonesian students suffered a severe decline in their academic performance, particularly in reading and numeracy (Kemendikbudristek, 2021). Recent studies show that the Covid-19 epidemic has led to a significant drop in reading skills, sometimes known as reading loss (UNESCO, 2021). Third graders lost about 35% of their reading gains compared to what they would have made in a typical school year, according to another study by Kuhfeld (Kuhfeld et al., 2020).

Merely reopening schools and resuming in-person instruction does not automatically address the issue of learning loss. The decisions regarding the closure and reopening of schools have significant implications for teachers. In conclusion, it is necessary for them to prioritise the equilibrium between online learning and in-person learning. Additionally, they must be cautious since they are still susceptible to a heightened likelihood of transmitting the Covid-19 virus (Meghani et al., 2022). A study conducted by Ardington et al. (2021) further supports the assertion that the learning deficit experienced during online education can worsen when students resume in-person schooling.

This research and development began with preliminary research in the context of needs analysis in the 3<sup>rd</sup>-grade elementary schools in Bantul Regency. Researchers found that various problems allegedly occurred because of students' study habits affected by the COVID-19 pandemic (Aucejo et al., 2020). Online learning during the pandemic opened many doors to cheating for students, which could be done in various ways (Gudiño Paredes et al., 2021). Therefore, honesty is one of a kind issue that matters. As a result of online learning during the pandemic, many students also have experienced a decrease in their disciplinary and responsible attitude, both in terms of participating in learning, submitting assignments, or others (Dzulfikar & Amrullah, 2021). Honesty, responsibility, and discipline are the three core values of integrity, according to KPK (2016).

"Learning loss" refers to the disparity between the knowledge and skills that students are expected to acquire in a normal academic year and what they actually acquire during the pandemic and its aftermath (Pier et al., 2021). This research primarily focuses on analysing the moral values conveyed in fairytales, which leads to the identification of learning loss. The issue arose as a result of the insufficient engagement of students in online education during the pandemic, which can be attributed to the improper utilisation of media (Farman, Hali, & Karman, 2022). Even in traditional classroom settings, the use of learning media is crucial in facilitating students' comprehension of the subject and enhancing their cognitive abilities (Putra & Nisa, 2021). The results of the needs analysis indicate that pupils exhibit diminished enthusiasm towards the fairytales offered in their textbooks. Consequently, kids encounter difficulty comprehending the substance of fairytales and unravelling their moral lessons. Unfortunately, this problem is regrettable as fairytales have a moral lesson that students can imitate in terms of character values. Consequently, with the reopening of schools, it is imperative for instructors to effectively address the academic regression and the social and emotional well-being of pupils (Page et al., 2021).

These challenges can serve as both impediments and opportunities for teachers. Fairytales, as a component of children's narratives, have a vital function in imparting knowledge and instilling moral principles in students through an enjoyable means (Pulimeno et al., 2020). By harnessing creativity, educators can effectively address the issue of learning loss while simultaneously enhancing students' moral fortitude. Presenting fairytales as technology-based learning resources in the modern era will enhance their educational value. Pulimeno et al. (2020) elucidated that the integration of narratives with multimedia technology yields a more captivating educational encounter and enhances learning achievement. Telesra (2020) suggests that a worthwhile strategy for enhancing learning outcomes during and after pandemics is to allocate significant resources towards digital technology-based

learning material. A digital fairytale book is a form of learning material that integrates fairytales with technology.

This research is necessary considering that the world, especially Indonesia, is currently far from being on track to achieve the fourth point of sustainable development goals (SDGs): ensuring quality education for all (Rogers & Sabarwal, 2020). Considering the rise of integrity concerns during the COVID-19 pandemic, it is crucial for schools to prioritise maintaining student integrity (Maryon et al., 2022). When kids return to school, it is crucial to prioritise the debate on learning loss with integrity. This will enable them to acquire the necessary knowledge and skills that they should have already mastered (Kaffenberger, 2021). According to a study conducted by the World Bank, the recommended approach to address the reopening of schools following the COVID-19 epidemic is to train teachers to evaluate and measure the extent of learning setbacks (Rogers & Sabarwal, 2020).

This study elucidates the manner in which the digital fairytale book "VIRTUE-BOOK" enhances pupils' integrity and mitigates their academic regression. The government presently supports the use of digital technologies in post-COVID-19 learning recovery activities. The technology-based education agenda is also one of Indonesia's missions in the Indonesian G-20 Presidency in education (G20 Indonesia, 2022). In the future, VIRTUE-BOOK can continue to be relevant to the new national education curriculum, namely the Independent Curriculum (Kurikulum Merdeka), which encourages the development of the Pancasila Student Profile, with one of its sub-elements being the character of integrity.

## 2. METHODS

This research is a research and development (R&D). This study used the ADDIE development model, which has five stages: analyze; design; develop; implement; and evaluate. The ADDIE model used to create digital fairytale books in this research is a product development concept applied to build performance-based learning (Branch, 2009). The development procedures that are the focus of discussion in this article are the implement and evaluate stages because this article will only focus on explaining how VIRTUE-BOOK improves the integrity and recovers learning loss. This article will reveal the integrity improvement and learning loss recovery of the 3<sup>rd</sup>-grade students and then measure the effectiveness of the VIRTUE-BOOK on those matters.

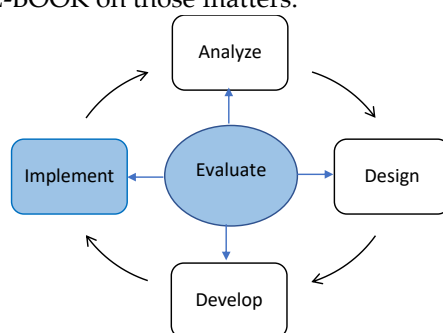


Figure 1. ADDIE procedure

The implementation stage indicates the end of formative development and evaluation activities and the transition to summative evaluation activities. The implementation stage aims to prepare a learning environment by involving students. The general procedure for the implementation stage is as follows.

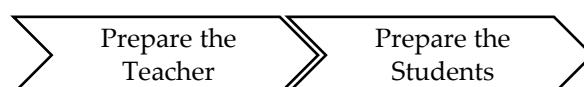


Figure 2. The general procedure of the implementation stage

The evaluation stage aims to assess the digital fairytale book "VIRTUE-BOOK" quality before and after implementation. The general procedures associated with the evaluation stage are as simple as the following chart.

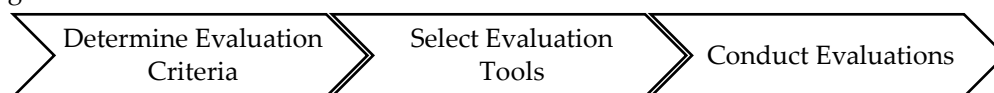


Figure 3. The general procedure of the evaluation stage

The digital fairytale book "VIRTUE-BOOK" went through five trial stages, namely: (1) expert validity test, (2) one-to-one trial with four students, (3) small group trial with eight students, (4) field trial with 1 class (15 students) at the developing stage, and (5) test the effectiveness (implementation stage) with experimental research. The effectiveness test involved one experimental class and one control class. The experimental research design used in this study was a quasi-experimental non-equivalent control group design.

Experiment	O1	X1	O2
	.....		
Control	O3	X2	O4

- O1 & O3 = pretest mean of experimental class and control class
- O2 & O4 = mean posttest experimental class and control class
- X1 = learning with a digital fairytale book, "VIRTUE-BOOK."
- X2 = learning with other digital fairytale books

The instruments used are the integrity scale and cognitive evaluation questions about deciphering messages from fairytales. Data about students' integrity were analyzed by calculating the average integrity index by the following Likert Scale.

Table 1. Likert scale

Score	Criteria
4	Very Good
3	Good
2	Bad
1	Very Bad

<sup>1</sup>Adaptep from Hadi (1991)

The data obtained from the integrity questionnaire and test sheet were subsequently computed to ascertain the average scores for the pretest and post-test. The increase in integrity is determined by subtracting the pretest scores from the post-test scores and comparing the difference. The reduction in learning loss is determined by comparing the disparity between the pretest and post-test results with the pretest scores. The obtained score is multiplied by a coefficient of 100% to calculate the percentage.

The efficacy of the VIRTUE-BOOK in enhancing integrity and addressing learning deficits was assessed using various statistical tests including independent sample t-test, paired sample t-test, Multivariate Analysis of Variance (MANOVA) test, n-gain test, and effect size test. A t-test was performed to examine if there were any partisan disparities in integrity and learning loss between the experimental and control courses. A paired sample t-test can identify some changes in the integrity and learning decline in the experimental class before and after utilising the "VIRTUE-BOOK" digital fairytale book. The MANOVA test detects simultaneous differences in integrity and learning loss between the experimental class and the control class. The aforementioned statistical tests were conducted using SPSS version 22, with a significance threshold of 5%.

The n-gain test can measure the magnitude of the increase in student learning outcomes before and after using digital fairytale books by comparing the results of the pretest and post-test. The n-gain test is interpreted by converting the n-gain score (g) into qualitative data using the following guidelines.

**Table 2.** The guidelines for n-gain test interpretation

<b>g</b>	<b>Criteria</b>
$g \geq 0,7$	High
$0,3 \leq g < 0,7$	Medium
$g < 0,3$	Low

<sup>2</sup>Adapted from Hake (1999)

The effect size test reveals the magnitude of the influence of the digital fairytale book "VIRTUE-BOOK" on increasing integrity and decreasing learning loss. The effect size test is stated in Cohen's scored (d). The interpretation of the effect size test data uses the following Cohen's d standard guidelines.

**Table 3.** The guidelines for effect size test interpretation

<b>d</b>	<b>Cohen's d Standard</b>
$d \geq 0,8$	High
$0,5 \leq d < 0,8$	Medium
$0,2 \leq d < 0,5$	Low

<sup>3</sup>Adapted from Cohen (1992)

The digital fairytale book "VIRTUE-BOOK" is categorized as effective if the t-test and MANOVA obtain a significance of  $<0,05$  while the n-gain test and effect size test get results of at least "medium criteria."

### 3. FINDINGS AND DISCUSSION

#### 3.1 Implementation

The implementation stage is the end of the product development process. The purpose of the implementation stage is to prepare the learning environment and involve students (Branch, 2009: 133). The implementation stage in this study was carried out through experimental research involving the experimental and control classes.

The procedures passed at this stage are preparing teachers and students. Teacher preparation involves the identification and training of educators to effectively support learning and utilize instructional materials in both experimental and control classroom settings. Preparing pupils involves the identification and active participation of students in learning activities during the implementation phase. Students are prepared to actively engage in learning and effectively interact with the applied learning media. There were 15 pupils in both the experimental class and the control class throughout the implementation phase, each with a class teacher. The outcomes of the experimental test during the implementation phase are as follows.

##### 3.1.1 How VIRTUE-BOOK Improves Integrity

The VIRTUE-BOOK can improve student integrity by increasing the student integrity index, namely the core values of integrity, including honesty, discipline, and responsibility. The following is

a bar chart that illustrates the increase in the integrity index of students before and after using the VIRTUE-BOOK.

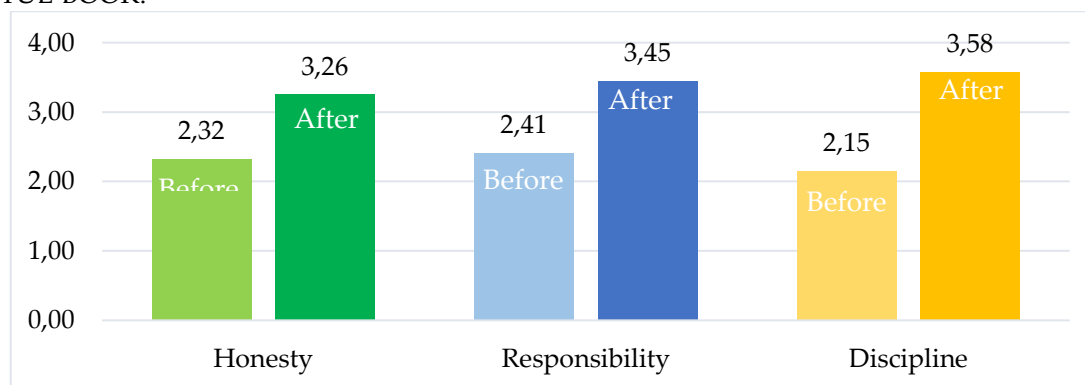


Figure 4. Students' integrity index

Based on the table above, the integrity index of students from before to after learning to use the VIRTUE-BOOK experienced a significant increase. The honesty indicator increased from 2,32 (poor) to 3,26 (good). The responsibility indicator increased from 2,41 (poor) to 3,45 (very good). The discipline indicator also increased from 2,15 (very poor) to 3,58 (very good). The student integrity index increased from 2,29 (poor) to 3,43 (very good). That is, the increase in the integrity index of students from before using the VIRTUE-BOOK to after using the VIRTUE-BOOK was 49.5%. These results follow research by Gojali (2017) and Arbi (2020) that digital fairy tale learning media can increase the character values of elementary school-age children, in this case, namely integrity.

Based on the results of analysis tests using MANOVA, t-test, n-gain test, and effect size test, VIRTUE-BOOK has been proven effective in increasing student integrity. The results of the analysis test are as follows.

Based on the results of quantitative tests using the independent t-test and paired t-test, VIRTUE-BOOK is proven to improve the integrity of 1<sup>st</sup>-grade elementary school students. The following table presents data on the results of the t-test.

Table 4. The results of the t-test for the integrity variable

Independent t-Test		Paired t-Test
Pretest	Post-test	Experiment Class
0,437	0,003	0,000

Based on the table above, the significance value before treatment was 0,437. When compared with the predetermined  $\alpha$  significance level of 5% or 0,05, the significance value of the test results before treatment is much greater. That is, there is no difference between the integrity of the experimental and control class students before treatment. The significance value changed at the time after treatment, which was equal to 0,003 or less than 0,05. These results prove significant differences in integrity characters between students in the experimental and control classes after treatment. The treatment was that students in the experimental class used a digital fairytale book, "VIRTUE-BOOK," as a learning medium. In contrast, students in the control class used another digital fairytale book.

The paired sample t-test of the pre- and post-test scores of the experimental class pupils further demonstrates that the VIRTUE-BOOK is effective in raising moral standards amongst first graders. Based on the data in the table above, it is known that the significance of the paired sample t-test obtained a value of 0,000 or less than 0,05. These results indicate that using VIRTUE-BOOK digital fairytale book media in the experimental class can improve student integrity.

N-Gain and effect Size tested the magnitude of the difference and the influence of the digital fairytale book "VIRTUE-BOOK" to increase integrity. The result is as follows.

**Table 5.** The results of the n-gain and effect size test for the integrity variable

Test	Result	Category
N-Gain (g)	0,72	High
Effect Size (d)	1,05	Large

The N-Gain of 0,72 indicates that the effectiveness of the VIRTUE-BOOK to provide a difference in the form of increased integrity in the experimental class is included in the high category. The effect size of 1,05 indicates that using the VIRTUE-BOOK can significantly increase the integrity of 1<sup>st</sup>-grade students in the experimental class.

The test results prove that the VIRTUE-BOOK is effective as a medium for learning the character of integrity for grade 1 elementary school students. According to behavioristic theory, the learning process occurs when students experience changes in behavior (Burhanuddin et al., 2021). So how can VIRTUE-BOOK change student behavior to increase student integrity? The answer is to instill the character values of integrity, especially honesty, discipline, and responsibility, through special features in the VIRTUE-BOOK.

VIRTUE-BOOK presents fairytales that contain moral messages to promote the character of integrity in students. The fairytale is written based on the results of imagination, includes the value of integrity and character education, and has an entertaining story for students (Ernes, 2022). These character values are conveyed through implicit messages, which are emphasized through story illustrations, character behavior, conversations between characters, and the events experienced by the characters. Character education through fairytales can be more effective because students don't feel they are being lectured (Kusumaningrum, 2021).

VIRTUE-BOOK also reinforces the integrity of students. Reinforcement is a form of stimulation from the environment that can confirm the behavior shown (Papageorgi, 2021). Positive reinforcement will increase the frequency of the behavior (repetition). Conversely, negative reinforcement will make students stop doing certain behaviors.

The research results of Gojali (2017) and Arbi (2020) regarding the effectiveness of digital fairytale learning media for instilling moral values in elementary school students strengthen the findings of this study. Unsriana (2021) also emphasized that fairytales help build children's character, in this case, the essence of integrity. The reason is that fairytales can provide a way for students to receive important messages through the moral messages they contain (Visikoknox & English, 2016).

Fairytales effectively transmit universal character values (Pulimeno et al., 2020), including integrity. Fairytale reading activities can develop students' awareness and character (Visikoknox & English, 2016). VIRTUE-BOOK, which contains fairytales, can also broaden students' understanding of many things other than what they already have (Bryant, 2009) so that it is suitable to build students' knowledge of integrity as a virtue character they will need in their life.

### 3.1.2 How VIRTUE-BOOK Recovers Learning Loss

Student learning outcomes can measure learning loss (Kraft & MontiNussbaum, 2017). More specifically, learning loss can be identified by calculating the difference between what students should be able to learn or achieve in a typical year of learning and what students have learned during a pandemic (Pier et al., 2021). This difference is known as the learning gap.

Every year, every time they go to a higher grade level, students are expected to be able to master new material or knowledge and develop new skills. Concerns about learning loss are concerns that students cannot learn and master material and skills at the same level as students usually at the same

grade level (Pier et al., 2021). This study assumes that the achievement targets that grade 3 students should achieve in a typical school year exceed the minimum completeness criterion score of 75.

The following illustrates the results of the analysis of learning loss and learning recovery in grade 3 elementary school students who were the subjects of the study. The illustration below is adapted from Pier et al. (2021). about "how to think about 'learning loss' associated with COVID-19.

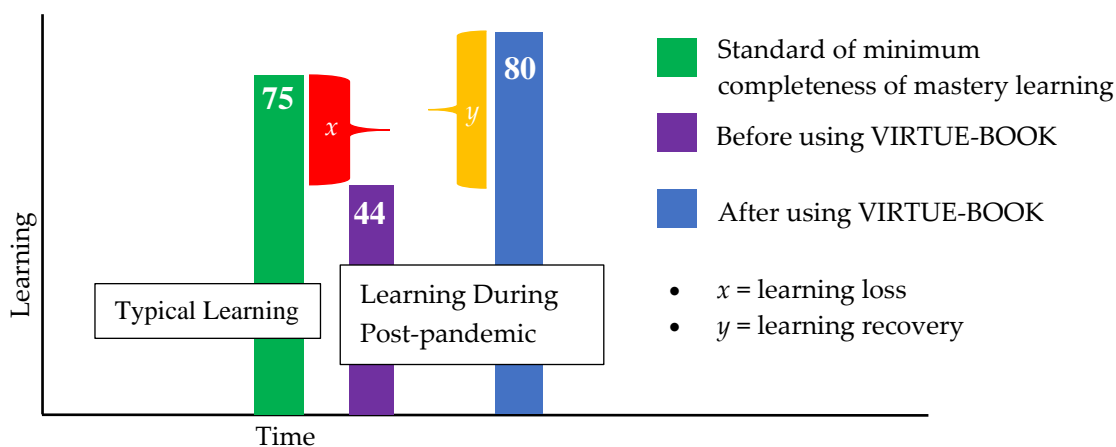


Figure 5. Learning loss – learning recovery illustration

In Figure 6 above, the red zone is the pretest result gap zone with the minimum standard of completeness of mastery learning (75) referred to as the learning gap. From the illustration above, the learning gap is 31 points, where the pretest score is 31 points lower than the KKM (-31). This learning gap proves a learning loss in students related to the tested material, namely KD 3.8, about decoding messages from fairy tales.

In Figure 6 above, the orange zone is the difference between the mean post-test scores of students and the standard of minimum completeness of mastery learning (75). The difference is 5 points, whereas the post-test score is 5 points higher (+5). These results indicate that after using VIRTUE-BOOK, student learning outcomes are 5 points higher than the minimum standard of completeness of mastery learning (75) that students should be able to achieve in a typical school year. These results also show that student scores after using VIRTUE-BOOK are better than before using VIRTUE-BOOK. Thus, calculatingly, VIRTUE-BOOK can overcome the learning gap from -31 to +5 or calculatively by 116%.

Analytical tests were carried out using the T-test, MANOVA test, N-Gain test, and effect size test to prove the effectiveness of the VIRTUE-BOOK in learning recovery. The results of a series of analytical tests can be understood through the following explanation.

The independent t-test results on the learning loss variable show that the digital fairytale book "VIRTUE-BOOK" can make a significant difference. The following table displays data on the t-test results on the learning loss variable.

Table 6. The results of the t-test for the learning loss variable

Independent t-Test		Paired t-Test
Pretest	Post-test	Experiment Class
0,770	0,009	0,000

Based on the table above, the independent t-test produces significance data of 0,770 for pretest data or before treatment and 0,009 for post-test data or after treatment. As with the test results on the integrity variable, the significance value of 0,770 is more significant than 0,05, which means there is no difference in the initial abilities of students in the experimental and control classes regarding learning loss. The considerable number of 0,009 is less than 0,05, which means a significant difference in average learning loss between students in the experimental and control classes after treatment. The treatment

given was also the same as the previous variables, namely students in the experimental class learning with the media of digital fairytale books "VIRTUE-BOOK" and students in the control class using other digital fairytale books.

Similar results can also be seen from the paired sample t-test results for the experimental class. In Table 4, the significance value of the paired sample t-test is 0,000 or less than 0,05. Thus, it can be concluded that there is a significant difference in the average learning loss of students in the experimental class before and after using the digital fairytale book "VIRTUE-BOOK."

The magnitude of the difference and the influence of the digital fairytale book "VIRTUE-BOOK" to reduce learning loss was also tested with N-Gain and effect size. The result is as follows.

**Table 6.** The results of the n-gain and effect size test for the learning loss variable

Test	Result	Category
N-Gain (g)	0,65	Medium
Effect Size (d)	1,2	Large

The N-Gain of 0,65 indicates that the effectiveness of the VIRTUE-BOOK to provide a difference in the form of reducing learning loss in the experimental class is included in the medium category. An effect size of 1,2 indicates that using the VIRTUE-BOOK can significantly affect recovering learning loss in 3<sup>rd</sup>-grade students in the experimental class.

The digital fairytale book VIRTUE-BOOK has been shown to improve the quality of learning and thereby decrease the likelihood of students losing knowledge. Enhanced learning is the key to enhancing the quality of education. The use of learning media is one way to boost education standards (Sanaky, 2013). To further facilitate learning, especially of Indonesian language material, VIRTUE-BOOK digital fairytale learning media incorporates technology in the following ways (Jonassen, 2013). First, it helps the construction of knowledge by becoming a way for students to investigate knowledge to keep learning. Second, as a genuine setting for encouraging hands-on education. Third, as a social media platform for facilitating learning through conversation and reflection.

Students are shown how to analyse a fairy tale's message or moral message after reading the stories in the VIRTUE-BOOK. Because offering examples is the most appropriate teaching strategy for primary school kids (Asshidiq & et al., 2019), it is crucial to provide pupils with examples of how to analyse and understand messages in fairytales. As a form of educational media, these illustrations can help make the abstract principles of interpreting fairy tale meanings more apparent (Sanaky, 2013).

The VIRTUE-BOOK digital fairytale book was developed regarding cognitive learning theory. According to cognitive theory, learning involves changes in students' cognition, including thoughts, beliefs, skills, and the like (Schunk, 2019). The cognitive approach emphasizes making learning meaningful and considers students' perceptions of themselves and their learning environment. VIRTUE-BOOK can be a learning medium to improve the quality of the learning process and make it more meaningful. VIRTUE-BOOK is also able to present a fun learning environment for students. Positive perception can positively influence students' learning motivation (Buluş Kırıkkaya et al., 2010).

The effectiveness test results showed that the VIRTUE-BOOK effectively reduces or recovers learning loss in Bahasa Indonesia content, deciphering messages in fairytales. Learning loss can be measured, one of which is from student test results (Kraft & Monti-Nussbaum, 2017). From the results of experimental tests at the implementation stage, the VIRTUE-BOOK digital fairytale book developed in this study improved student test results related to deciphering messages from fairytales.

### 3.1.3 How is the Effectiveness of VIRTUE-BOOKs Both to Increase Integrity and to Recover Learning Loss

To determine the effectiveness of the digital fairytale book "VIRTUE-BOOK" in increasing integrity and recovering learning loss, researchers conducted a MANOVA test. The results are presented in the following table.

**Table 7.** The results of the MANOVA test

Data	Significance			
	Pillai's Trace	Wilks' Lambda	Hotelling's Trace	Roy's Largest Root
Pretest	0,701	0,701	0,701	0,701
Post-test	0,001	0,001	0,001	0,001

Based on the table above, it can be determined whether the two classes (experimental and control) have differences in terms of integrity and learning loss simultaneously or not. Data were interpreted by comparing the significance values of the four statistical tests above with  $\alpha$  0,05. Before treatment (pretest), the four statistical tests yielded a significance value of 0,701 or greater than 0,005. That is, there is no difference. After treatment, the significance value changed to 0,001 or less than 0,05. Significant differences exist between the experimental and control classes regarding integrity and learning loss after using different digital fairytale book learning media. From these results, it can be concluded that the digital fairytale book "VIRTUE-BOOK" effectively increases integrity and reduces learning loss.

This study supports Gojali's (2017) and Arbi's (2020) findings that digital fairytale learning media with the Android platform effectively instill moral values in elementary school-aged children. Fairytales have the advantage of being called dulce at utile or fun and meaningful (Lukens, 2003). According to Almerico (2014), children's literature is a powerful learning medium because it can teach moral values (educational aspects), increase student involvement and motivation in learning (didactic elements), and teach students to deal with inner conflicts and life difficulties (psychological factors).

This research also simultaneously supports various research results on the effectiveness of digital technology-based learning media in improving the quality of learning. Jonassen (2013) states technology promises students who are more intelligent, happier, more educated, and have their needs met more fully. Technology can be a modern solution to educational problems—lack of productivity, inefficiency, and focus. According to Schunk (2019), technology has the potential to facilitate learning in unimaginable forms. Research from Schunk (2019) has proven that the advantage of using technology in education is to increase students' metacognition, in-depth processing, and problem-solving abilities.

The choice of digital fairytale books as a medium to overcome problems of integrity and learning loss is based on the opinion of Bryant (2009) that fictional literature such as fairytales can broaden readers' understanding of many other things besides what the readers themselves already have. Fairytales represented by illustrations can adjust the mental development of students still in the concrete operational stage and can influence elementary school students' reading comprehension of the story they read (Okwilagwe & Aghotor, 2018).

### 3.2 Evaluation

The final stage of the ADDIE procedure is evaluation. The evaluation stage aims to assess the quality of the learning media and the learning process (Branch, 2009). Evaluation has been carried out since the development stage and continues until the implementation stage. VIRTUE-BOOK has gone through various revisions before being implemented in students. The implementation stage obtains data based on the results of the experimental research. All evaluation data obtained in the implementation stage has been presented in the previous tables. Based on the findings in the tables

above, it is evident that the digital fairytale book "VIRTUE-BOOK" can improve integrity by enhancing the integrity index by 49,5% and can recover learning loss by reducing the learning gap by 116%. VIRTUE-BOOK is proven effective for increasing integrity and recovering the learning loss of 3<sup>rd</sup>-grade elementary school students.

This research strengthens the evidence that digital learning media can meet the needs of students and teachers to increase the effectiveness of learning during a pandemic (Angelico, 2020) and post-pandemic when schools reopen (Telesra, 2020). During the Covid-19 pandemic, the use of electronic technology in distance learning provided better learning outcomes than those using only conventional media Kokhanovskaya, Smychkova, & Chai (2021). During face-to-face learning during the post-Covid-19 pandemic, digital technology-based media positively affected learning. The results of research by Wulansari, Sudiyanto, & Sumaryati (2023) in the post-Covid-19 era, the application of technology in learning has the opportunity to improve the quality of learning.

#### 4. CONCLUSION

Based on the presentation of the results of the implementation and evaluation stages above, it can be concluded that the VIRTUE-BOOK can improve integrity by increasing the student's integrity index and recover learning loss by decreasing the learning gap. The integrity index in this study is viewed from the three core values of integrity: honesty, responsibility, and discipline. VIRTUE-BOOK increased the integrity index of grade 3 elementary school students by 49,5% from 2,29 (poor category) to 3,43 (very good category). VIRTUE-BOOK can decrease the learning gap between desired learning outcomes in typical learning and actual student learning outcomes. The expected learning outcomes are beyond the minimum completeness of mastery learning (75). The reduced learning gap in students after learning with VIRTUE-BOOK media proves that VIRTUE-BOOK can improve the quality of learning. After using the VIRTUE-BOOK, student learning outcomes are proven to be higher than student learning outcomes before using the VIRTUE-BOOK, even exceeding the standard of minimum completeness of mastery learning (75). Based on the analysis test results, VIRTUE-BOOK has been proven effective for improving integrity and recovering learning loss. The independent sample t-test gained a significance of 0,003 for the integrity variable and 0,009 for the learning loss variable, which means there was a significant difference between the experimental class and the control class regarding the integrity variables and learning loss partially or individually. The results of the paired sample t-test obtained a significance of 0,000 for both variables, which means that there were significant differences in each variable of integrity and learning loss in the experimental class before and after using VIRTUE-BOOK. The results of the MANOVA trial obtained a significance of 0,001, meaning there was a significant difference between the experimental and control classes in terms of the integrity and learning loss variables simultaneously or together. The results of the N-Gain test on the integrity variable obtained a value of  $g = 0,72$  (high), and the learning loss variable received a value of  $g = 0,65$  (moderate). The results of the effect size test obtained the value of Cohen's  $d = 1,05$  for the integrity variable and Cohen's  $d = 1,2$  for the learning loss variable.

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