

Digital Short Story Literacy and the Character of Environmentally Concerned Students

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Abstract—The research aims to explore the influence of digital short story literacy on environmental care character through moderation of reading interest. It is a quantitative study that measures the influence of digital short story literacy on environmental care character. The study involved 270 participants as a sample using a purposive sampling technique. The data collection technique for this research was a Google Forms questionnaire. Data analysis used the Statistical Package for Social Science (SPSS) software version 27. The results show that digital short story literacy has a significant influence on environmental care character. The effect of digital short story literacy on environmental care character is significant in statistics. However, reading interest does not present a moderately successful influence of digital short story literacy on the environmental care character. This research contributes to designing curriculum education with special attention paid to the inclusive aspects of digital literacy and environmental short stories to create a conscious and responsible generation's answer to environmental preservation. More studies need to be conducted about this subject including the additional amount of higher education needed in the regions where natural disasters happen more frequently, as well as more engagement originating from participants who are studying social sciences. In the industrial sector, it is recommended to collaborate with students to make documentaries from digital short stories to promote environmental preservation.

Index Terms—digital literature, environmental care character, reading interest, short story literacy

I. INTRODUCTION

Environmental education and awareness is becoming an increasingly important topic today, and literary work has become one medium for forming the character of caring for the environment through digital short story literacy skills with an environmental theme for students in a tertiary environment. Moreover, the use of digital media is an essential part of the everyday life of children, adolescents, and young adults, especially those who are students in tertiary institutions. As a result, digital short stories, messages, and environmental values can be conveyed through exciting and interactive narratives. It is vital, therefore, to take advantage of the potential of digital media as a tool to shape the character of caring for the environment (Aguilera, 2023).

It has only been in the past couple of years that researchers such as Arafah et al. (2021), Dobroć et al. (2023), Duggan and Peeren (2020), and Zhang et al. (2023) have started to study the effects of digital short story literacy on environmental care. For example, Dobroć et al. (2023) illustrate how intermediary organizations use narratives to develop inclusiveness strategies in Sweden's urban innovation programs. Furthermore, research reveals that human and non-human entities combine to influence the implementation of various approaches to critical literacy and understanding of meaning in students in a global context (Zhang et al., 2023). Through a close reading of the 2018 special issue of the famous British magazine *Country Life* (edited by Prince Charles), research reveals the continued urgency to critique narratives, especially when they appear in popular outlets such as *Country Life* that directly show how rural politics can be (Duggan & Peeren, 2020).

Further research explores the relationship between humans and nature such as that found in Colin Thiele's novel *February Dragon* and outlines environmental lessons found within the book (Arafah et al., 2021). As the characters in the novel protect animals and the environment from the dangers of forest fires, this depiction of the human relationship with nature reveals several environmental values readers can learn such as respect, responsibility, and empathy for living things.

Based on several previous studies, short story literacy can influence the development of environmental care characters. However, this research has yet to focus explicitly on digital short stories and their effects on students at

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various universities throughout Indonesia. The novelty of this study is the research method used by taking the population and samples on a larger scale using ecocritical short story literacy. Thus, the study sets out to answer the following questions:

1. Is there an effect of digital short story literacy on environmental care characters?
2. Does reading interest moderate the effect of digital short story literacy on environmental care character?

Additionally, the research hypotheses are:

H_{0a}: There is no effect of digital short story literacy on environmental care character.

H₁: There is an effect of digital short story literacy on environmental care character.

H_{0b}: Reading interest does not moderate the effect of digital short story literacy on environmental care character.

H₂: Reading interest moderates the effect of digital short story literacy on environmental care character.

This study aims to fill in this knowledge gap by looking at the effect of digital short story literacy on environmental care character through the moderation of reading interest among university students in Indonesia. This study aims to examine the effect of digital short story literacy on environmental care character which is moderated by the reading interest variable.

II. LITERATURE REVIEW

A. Digital Short Story Literacy

Digital short story literacy is a person's ability to understand, analyze, and use digital short stories properly and effectively; moreover, it contains various dimensions, including content, procedural, and contextual (Aguilera, 2023). Digital text short stories can be found on websites, applications, or social media platforms (Indah et al., 2022, p. 215). Students who have digital short story literacy can navigate and utilize various online short story sources as well as understand story elements (Indah & Rohmah, 2022; Kebede, 2023; List & Lin, 2023; Ridell & Walldén, 2023). With good digital short story literacy, students hone their creative writing skills and improve the quality of their work in the digital world through an awareness of the structure and features of the genre, which involve cognitive processes (Darvin, 2023; Dobroć et al., 2023; Z. Zhang, 2023). They use various digital features, such as hyperlinks, images, videos, and sound, to enrich their stories (Sibagariang & S. Pandia, 2021; Ulu-Aslan & Baş, 2023).

B. Environmental Care Character

The character of caring for the environment in students is very important in ensuring environmental sustainability in the future. It is related to non-human natural components, natural legitimacy, responsibility to nature, and natural dynamics (Buell, 2005). The character of caring for the environment encourages students to be involved in social activities and environmental campaigns (Dai et al., 2023; Salceda et al., 2022). Depictions of human relationships with nature reveal some of the values of environmental education that are learned by readers (Arafah et al., 2021). One educational system that can play an active role in identifying and addressing environmental problems is Education 4.0 - a new experience-based educational system which aims to transform education through automation and cutting-edge technology (Robert Selvam et al., 2023; Mukul & B ü y ü k ö zkan, 2023).

C. Reading Interest

Reading is a skill that includes decoding graphic symbols and understanding written messages (Aurpa et al., 2023; Franchi et al., 2023; Mastrothanasis et al., 2023). Interest in reading includes several dimensions: individual interest, situational interest, selecting texts with interest-enhancing elements, and interest self-regulation strategies (Springer et al., 2017). Reading is related to attention and correlated with behavior (Hingstman et al., 2023, p. 1; Lee et al., 2023, p. 1). The family environment plays an essential role in shaping reading interest which influences the function of reading production and forms what is known in literature as a home literacy environment and encouraging the provision of reading materials (Kucirkova et al., 2023, p. 1; Ndijuye & Benguye, 2023). If students feel the benefits of reading such as increasing understanding and critical thinking skills, they tend to have a high interest in reading. Conversely, if they experience negative experiences, their interest in reading decreases (Snell et al., 2023, p. 2). Knowledge of the reading process is interesting because of its systematicity which imposes more weight on cognitive components than others (Snell et al., 2023; J. Zhang et al., 2023; Zhou et al., 2023). Reading fluency is a complex and multifaceted construct that depends on word recognition accuracy, automaticity, and prosody (Karageorgos et al., 2023; Suggate et al., 2023, p. 2; Visap ääet al., 2023).

An environment with a complete library, internet access, or other reading facilities can provide students with opportunities to choose reading materials according to their interests (Borgonovi et al., 2023; Diprossimo et al., 2023; Lui et al., 2023; Steel, 2023). Based on cognitive load theory, presentation differences between screen and paper affect cognitive load during reading comprehension tests (Anggia & Hab ık, 2023; Br ü ggemann et al., 2023; Chyl et al., 2023; Firudin et al., 2023; Schurer et al., 2023; Tanaka et al., 2023). Reading goals such as achieving academic achievement affect students' reading interest related to language development through biological, psychological, and sociocultural interactions (Mizowaki et al., 2023, p. 2; Nepomuceno et al., 2023, p. 2). This type of pedagogy improves reading skills,

but the overuse of digital media reduces interest in reading due to distraction or reliance on social media or other digital entertainment.

III. METHODOLOGY

A. Research Design

Quantitative research was used in this study to measure the effect of digital short story literacy on environmental care character. Additionally, the researcher used the reading interest variable as a moderator variable to measure how much influence it has to strengthen the influence of digital short story literacy on environmental care character. This research was conducted by providing a digital short story titled “Tragedi Asap” (The Tragedy of Smoke) (<https://ruangsastra.com/18674/tragedi-asap/>).

B. Population and Sample

The study population (N = 2998) consisted of all undergraduate students of Indonesian Language and Literature Education from six universities in Indonesia, namely Universitas Muhammadiyah Makassar, Universitas Timor, Universitas Negeri Makassar, Universitas Puangrimaggalatung, Universitas Cokroaminoto Palopo, and Universitas Tadulako. From this population, n=270 was taken as a sample using a purposive sampling technique, as presented in the table below.

TABLE 1
STATISTICS OF PARTICIPANTS

Demographics		frequency	Percentage (%)
Gender	Male	42	15.6
	Female	228	84.4
Universities	Universitas Muhammadiyah Makassar	60	22.2
	Universitas Timor	60	22.2
	Universitas Negeri Makassar	60	22.2
	Universitas Puangrimaggalatung	30	11.1
	Universitas Cokroaminoto Palopo	30	11.1
	Universitas Tadulako	30	11.1

This study has a sample of 42 male students and 228 female students. In addition, Makassar State University, Timor University, and Makassar State University took a sample of 60 students. At the same time, Puangrimaggalatung University, Cokroaminoto Palopo University, and Tadulako University took a sample of 30 students.

C. Data Collecting and Instruments

The data collection technique for this research was a questionnaire created using the Google Form from the <https://docs.google.com/forms> page. The research instrument was a questionnaire comprising 23 items. The questionnaire is used to measure the effect of digital short story literature on environmental care characters, with reading interest as a moderating variable. This study uses a Likert scale. Before the participants filled out the questionnaire, the researcher gave them a digital short story entitled "The Tragedy of Smoke" by Gigih Suroso, which was downloaded from the Ruang Sastra page <https://ruangsastra.com/18674/tragedi-asap/>.

D. Validity and Reliability of Instrument

Testing the validity of the instrument was carried out using the correlation probability value Sig (2-tailed) and the Pearson Correlation coefficient with the help of the Statistical Package for Social Science (SPSS) software program. The validity test was performed to measure the validity of the questionnaire as a research measurement tool. The validity test is shown in the following table.

TABLE 2
INSTRUMENT VALIDITY TESTING

Item No.	Sig	Pearson Correlation	Item No.	Sig	Pearson Correlation	Item No.	Sig	Pearson Correlation
1	0.000	0.712**	9	0.000	0.594**	17	0.000	0.747**
2	0.000	0.744**	10	0.000	0.679**	18	0.000	0.727**
3	0.000	0.761**	11	0.000	0.719**	19	0.000	0.680**
4	0.000	0.732**	12	0.000	0.751**	20	0.000	0.689**
5	0.000	0.717**	13	0.000	0.602**	21	0.000	0.724**
6	0.000	0.760**	14	0.000	0.744**	22	0.000	0.624**
7	0.000	0.674**	15	0.000	0.735**	23	0.000	0.743**
8	0.000	0.667**	16	0.000	0.761**			

** statistically significant at the level (0.01)

The table above shows that all item correlation coefficient values are satisfactory and statistically significant at the 0.01 level with values ranging from 0.594 to 0.761, which is more significant than 0.1565. Thus, this instrument is valid. In addition, the value of Sig (2-tailed) is at 0.000 ($p < 0.05$), so this questionnaire is valid as a research measurement tool.

TABLE 3
RESEARCH INSTRUMENT RELIABILITY TEST

Variables	Cronbach's Alpha	Results
Digital Short Story Literacy	0.831	reliable
Environmental Care Character	0.856	reliable
Reading Interest	0.860	reliable

The table above shows that the Cronbach's Alpha value for the Digital Short Story Literacy variable is 0.831 and Environmental Care Character is 0.856 while Reading interest is 0.860. These three variables show a Cronbach's Alpha value > 0.70 to declare the questionnaire reliable.

E. Data Analysis

Data analysis was performed using the Statistical Package for Social Science (SPSS) software program version 27. A Moderated Regression Analysis (MRA) was conducted to evaluate the effect of digital short story literacy on environmental care character through moderation of reading interest with a significance level of 5% (0.05). Before carrying out the regression analysis, the data that was collected had to pass prerequisite tests, namely the normality test, heteroscedasticity test, and multicollinearity test. The Kolmogorov-Smirnov Test method tested the normality of data distribution, and the data is usually distributed with an Asymp value Sig 0.200 ($p > 0.05$). Heteroscedasticity symptoms were detected with the Spearman Rho test with a significant value of 0.527 on the digital short store literacy variable and 0.179 on the reading interest variable so that the data did not show symptoms of heteroscedasticity ($p > 0.05$). Symptoms of multicollinearity were detected by looking at the tolerance and VIF values. The results of the multicollinearity test show that the digital short story literacy and reading interest variables have a tolerance value of 0.800 (tolerance > 0.10). In contrast, the VIF value shows 1.250 (VIF < 10), so multicollinearity does not occur.

IV. RESULTS

A. Descriptive Statistics

Descriptive data on digital short story literacy, environmental care character, and reading interest variables were analyzed using SPSS version 27 to see each item's response frequency, sum, mean, standard deviation, and cumulative percentage. This is presented in the following table.

TABLE 4
STUDENT RESPONSE TOWARDS DIGITAL SHORT STORY LITERACY

Digital Short Story Literacy Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Sum	Means	SD	Cumulative Percentage (%)
I understand that the protagonist Siti Hajar cares about the forest in the digital short story "Tragedi Asap".	6 (2.2)	5 (1.9)	53 (19.6)	124 (45.9)	82 (30.4)	1081	4.00	0.881	76.3
I understand the meaning and ecological context of the digital short story "Tragedi Asap", namely, maintaining forests that have been converted into oil palm plantations.	6 (2.2)	12 (4.4)	55 (20.4)	133 (49.3)	64 (23.7)	1047	3.88	0.898	73
I understand the language and terms used in the digital short story "Tragedi Asap".	3 (1.1)	7 (2.6)	80 (29.6)	121 (44.8)	59 (21.9)	1036	3.84	0.833	66.7
I had no problems reading a digital short story entitled "Tragedi Asap".	7 (2.6)	15 (5.6)	59 (21.9)	119 (44.1)	70 (25.9)	1040	3.85	0.956	70
The social and environmental impact of the forest as experienced by the protagonist Siti Hajar in the digital short story "Tragedi Asap".	3 (1.1)	9 (3.3)	66 (24.4)	134 (49.6)	58 (21.5)	1045	3.87	0.824	71.1
I understand the author's ideology against acts of environmental destruction by elements.	4 (1.5)	8 (3.0)	59 (21.9)	125 (46.3)	74 (27.4)	1067	3.95	0.863	73.7

The table above shows responses to items related to digital short story literacy. As much as 76.3% of students agree they understand the character of the protagonist Siti Hajar who cares about the forest in the digital short story “Tragedi Asap” (mean score = 4.00). Furthermore, 73% admit they understand the meaning and ecological context of the digital short story "Tragedi Asap" (mean score = 3.88). As many as 66.7% confirmed that they understood the language and terms used in the digital short story as well (mean score = 3.84). Moreover, 70% did not experience any problems when reading the digital short story "Tragedi Asap" (mean score = 3.85). Additionally, 71.1% of the students feel the social and environmental impacts of the forest as experienced by the protagonist Siti Hajar in the digital short story "Tragedi Asap" (mean score = 3.87). Finally, 73.7% of students can understand the author's ideology against acts of environmental destruction by unscrupulous persons (mean score = 3.95).

TABLE 5
RESPONSE STUDENT TOWARDS ENVIRONMENTAL CARE CHARACTER

Environmental Care Character Items	Never	Rarely	Sometimes	often	Always	Sum	Means	SD	Cumulative Percentage (%)
As the protagonist Siti Hajar did for forest animals, I care for animals and plants in the surrounding environment.	6 (2.2)	18 (6.7)	82 (30.4)	108 (40.0)	56 (20.7)	1000	3.70	0.945	60.7
I protect the ecosystem and physical environment by not littering like the protagonist Siti Hajar did.	3 (1.1)	12 (4.4)	56 (20.7)	99 (36.7)	100 (37.0)	1091	4.04	0.926	73.7
I apply the value of religiosity or local wisdom that nature has a Creator or Guardian, as did the protagonist Siti Hajar, who considers the forbidden forest sacred.	9 (3.3)	14 (5.2)	62 (23.0)	117 (43.3)	68 (25.2)	1031	3.82	0.980	68.5
I carry out the principles of education and environmental ethics by preserving and keeping the environment clean as the protagonist Siti Hajar who keeps the forest green.	1 (0.4)	2 (0.7)	65 (24.1)	108 (40.0)	94 (34.8)	1102	4.08	0.805	74.8
I care about and actively participate in social service activities when fires, floods, and other natural disasters occur through donations much like the characters Siti and Ani who help each other during a forest fire.	7 (2.6)	14 (5.2)	100 (37.0)	90 (33.3)	59 (21.9)	990	3.67	0.960	55.2
I participate in social activities by cooperating with the characters Siti and Ani, who join with volunteers to extinguish forest fires.	9 (3.3)	20 (7.4)	86 (31.9)	94 (34.8)	61 (22.6)	988	3.66	1.014	57.4
I pay attention to the life of animals in the wild (e.g., forest) by not engaging in poaching like the protagonist Siti Hajar did to forest animals.	17 (6.3)	19 (7.0)	51 (18.9)	100 (37.0)	83 (30.7)	1023	3.79	1.142	67.7
I try to prevent environmental degradation such as forest fires or other activities like the protagonist Siti Hajar who prevents people from logging forests.	12 (4.4)	32 (11.9)	75 (27.8)	95 (35.2)	56 (20.7)	961	3.56	1.081	55.9
I follow local environmental regulations or policies to deal with environmental degradation like the protagonist Siti Hajar who can survive forest fire disasters.	13 (4.8)	24 (8.9)	85 (31.5)	94 (34.8)	54 (20.0)	962	3.56	1.057	54.8

The table above shows responses to items related to environmental care character. It begins with 60.7% of the students stating that they often look after and care for animals and plants in the surrounding environment as the

protagonist Siti Hajar did for forest animals (mean score = 3.70). Furthermore, 73.7% of them often protect the ecosystem and physical environment by not littering like the protagonist Siti Hajar (mean score = 4.04). As many as 68.5% often apply religious values or local wisdom that nature has a Creator or Guardian (mean score = 3.82). Moreover, 74.8% of the students often carry out environmental education and ethics principles by maintaining environmental sustainability and cleanliness (average score = 4.08), and as many as 55.2% of them often participate in social service activities when disasters occur, such as fires, floods, and others, partly through donations such as the figures Siti and Ani who help each other when a forest fire occurs (mean score = 3.67). Up to 57.4% of the students often participate in social activities by cooperating with others much like the figures Siti and Ani who volunteer to extinguish forest fires (mean score = 3.66). As many as 67.7% often pay attention to animal life in the wild (for example, forests) by not poaching like the protagonist Siti Hajar did to forest animals (mean score = 3.79). Up to 55.9% often try to prevent environmental degradation such as forest fires or other activities similar to the protagonist Siti Hajar who prevents individuals from logging forests (mean score = 3.56). Finally, 54.8% of students often follow local environmental regulations or policies to deal with environmental degradation (mean score = 3.56).

TABLE 6
RESPONSE STUDENT TOWARDS READING INTEREST

Reading Interest Items	Never	Rarely	Sometimes	often	Always	sum	Means	SD	Cumulative percentage (%)
I took the time to read because I have an interest or hobby related to literacy, such as short stories by Gigih Suroso.	4 (1.5)	19 (7.0)	83 (30.7)	105 (38.9)	59 (21.9)	1006	3.73	0.932	60.8
I choose reading materials such as short stories by Gigih Suroso that suit my interests.	10 (3.7)	36 (13.3)	83 (30.7)	101 (37.4)	40 (14.8)	935	3.46	1.019	52.2
I create a comfortable atmosphere or climate so that there are no distractions while reading, especially the short stories by Gigih Suroso.	9 (3.3)	19 (7.0)	59 (21.9)	116 (43.0)	67 (24.8)	1023	3.79	1,004	67.8
I finished reading the short story by Gigih Suroso to completion.	12 (4.4)	16 (5.9)	47 (17.4)	94 (34.8)	101 (37.4)	1066	3.95	1,089	72.2
I choose short stories that are neatly structured or not wordy and have interesting details to understand the storyline well, such as short stories by Gigih Suroso.	3 (1.1)	14 (5.2)	53 (19.6)	121 (44.8)	79 (29.3)	1069	3.96	0893	74.1
I chose short stories relevant to my needs and life experiences, such as stories with environmental themes related to disaster mitigation.	11 (4.1)	11 (4.1)	76 (28.1)	109 (40.4)	63 (23.3)	1012	3.75	0.992	63.7
I regularly read literary works, one of which is short stories.	2 (0.7)	18 (6.7)	98 (36.3)	98 (36.3)	54 (20.0)	994	3.68	0893	56.3
I explore new topics through other authors' environmental-themed short stories.	9 (3.3)	25 (9.3)	96 (35.6)	85 (31.5)	55 (20.4)	962	3.56	1021	51.9

Table 6 shows the responses to reading interest items. It begins with 60.8% of students stating that they often spend time reading because they have interests or hobbies related to literacy (mean score = 3.73). Furthermore, 52.2% of them chose reading materials, such as short stories by Gigih Suroso, that matched their interests (mean score = 3.46). As many as 67.8% of the students often create a comfortable atmosphere or climate so that there are no distractions while reading concise stories by Gigih Suroso (mean score = 3.79). Up to 72.2% of the students finished reading Gigih Suroso's short stories to completion (average score = 3.95). Moreover, 74.1% of them prefer short stories that are neatly structured or not long-winded and have interesting details to understand the storyline well (mean score = 3.96). As many as 63.7% of the students often choose short stories relevant to their needs and life experiences, such as stories on environmental themes related to disaster mitigation (mean score = 3.75), and as many as 56.3% regularly read literary works, one of which is short stories (mean score = 3.68). Up to 51.9% of the students often explore new topics through

other authors' short stories with environmental themes (mean score = 3.56). Finally, the accumulated responses related to these three variables are presented below in Figure 1.

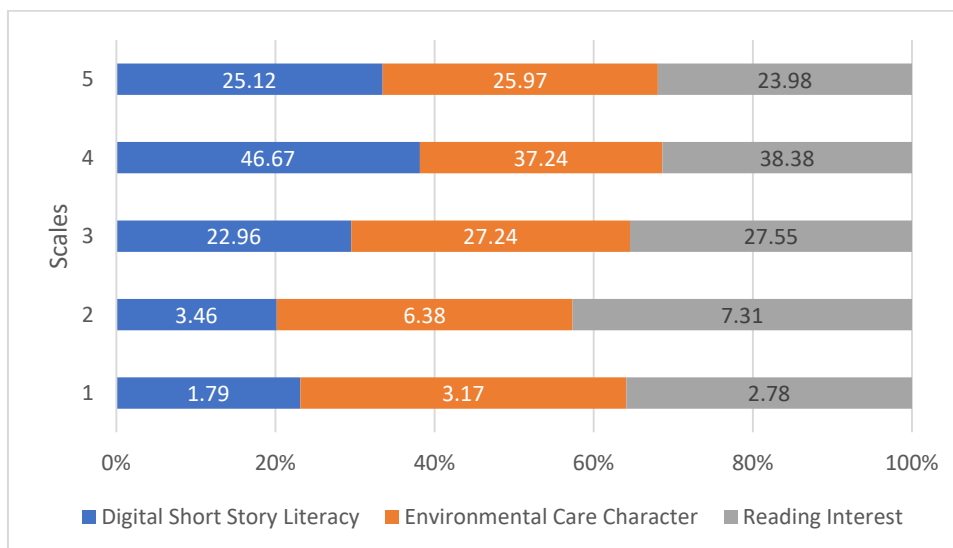


Figure 1. Frequency of Responses Based on Variables

Based on Figure 1, it can be seen that there are variations in the percentage of frequency of responses for each scale from 1 to 5 for each variable. In the digital short story literacy variable, the percentage of response frequency for *Strongly Disagree* is 1.79%, while *Disagree* is 3.46%, *Neutral* is 22.96%, *Agree* is 46.67%, and *Strongly Agree* is 25.12%. In the environmental care character variable, the percentage of response frequency for *Never* is 3.17%, while *Rarely* is 6.38%, *Sometimes* is 27.24%, *Often* is 37.24%, and *Always* is 25.97%. In the reading interest variable, the percentage of response frequency for *Never* is 2.78%, *Rarely*, 7.31%, *Sometimes* is 27.55%, *Often* is 38.38% and for *Always* it is 23.98%. However, to understand the relationship between these variables, it is necessary to carry out further statistical analysis such as linear regression. This graph alone cannot draw definite conclusions about the interactions between these variables.

B. The Effect of Digital Short Story Literacy on Environmental Care Characters

In this study, researchers used simple linear regression to examine the effect of one predictor variable (independent) – digital short story literacy – on environmental care character (the dependent variable). Simple linear regression analysis produces regression equations for predictions. A simple linear regression model statistical test was carried out regarding the slope (α) of the regression line to assess the suitability of the data. The hypothesis is as follows:

- H_{0a} : $r = 0$ (There is no influence of digital short story literacy on environmental care character.)
- H_1 : $r \neq 0$ (There is an effect of digital short story literacy on environmental care character.)

TABLE 7
HYPOTHESIS TESTING OF THE EFFECT OF DIGITAL SHORT STORY LITERACY ON ENVIRONMENTAL CARE CHARACTERS

Model	Unstandardized Coefficients		Standardized Coefficients Betas	t	Sig
	B	std. Error			
(Constant)	16.217	2001		8.104	0.000
Digital Short Story Literacy	0.755	0.084	0.480	8,947	0.000

The table above is the result of a regression in the effect of digital short story literacy on environmental care character. In the table, two types of coefficients are given: unstandardized coefficients (B) and standardized coefficients (β). Unstandardized coefficients (B) describe the direct effect of the independent variable on the dependent variable. In contrast, standardized coefficients (β) describe the relative effect of the independent variable on the dependent variable after controlling for variability between the independent variables. In this model, the constant has a value of 16.217, which indicates that if all independent variables are set to zero, then the environmental care character value will have a constant value of 16.217. Digital short story literacy has an unstandardized coefficient (B) of 0.755, indicating that every one-unit increase in digital short story literacy will correlate with an increase of 0.755 in environmental care character. The t-statistic value for digital short story literacy is 8.947, and the corresponding p-value is 0.000 ($p < 0.05$). This shows that the effect of digital short story literacy on environmental care character is statistically significant. In terms of standardized coefficients (Beta), digital short story literacy has a value of 0.480. This value indicates that every one-unit increase in digital short story literacy will be correlated with an increase of 0.480 standard deviations in environmental care character after controlling for variability between the independent variables. Overall, this table

presents the regression results, showing that digital short story literacy significantly positively affects environmental care character. The following figure visualizes this influence:

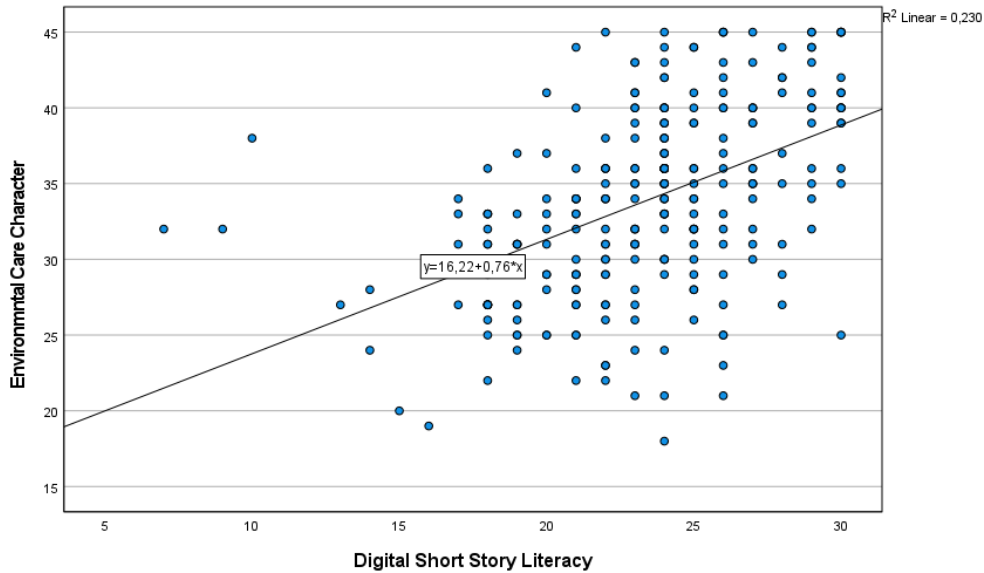


Figure 2. Graph of the Effect of Digital Short Story Literacy on Environmental Care Characters

C. The Effect of Digital Short Story Literacy on Environmental Care Character Through Reading Interest Moderation

A Moderated Regression Analysis (MRA) was used to test the effect of digital short story literacy on environmental care character through moderation of reading interest. The predictions used for this analysis produce a regression equation. The statistical test performed on the slope (α) of the regression line evaluates how well a data set fits the regression model. The hypothesis is as follows:

H_{0b} : $r = 0$ (Reading interest does not moderate the effect of digital short story literacy on environmental care character.)

H_2 : $r \neq 0$ (Reading interest moderates the effect of digital short story literacy on environmental care character.)

TABLE 8
HYPOTHESIS TESTING OF THE EFFECT OF DIGITAL SHORT STORY LITERACY ON ENVIRONMENTAL CARE CHARACTERS THROUGH READING INTEREST MODERATION

Model	Unstandardized Coefficients		Standardized Coefficients Betas	t	Sig
	B	std. Error			
(Constant)	13,927	7,634		1824	0.069
Digital Short Story Literacy	0.138	0.336	0.088	0.413	0.680
Reading Interest	0.357	0.253	0.327	1,410	0.160
Digital Short Story Literacy* Reading Interest	0.009	0.011	0.296	0.798	0.426

The table above shows the regression results, which analyze the effect of digital short story literacy on the character of environmental care by considering the moderating effect of reading interest. The regression results provide information about the relationship between these variables and measure the strength and significance of the effect. The regression results show several relevant coefficients. First, unstandardized coefficients indicate changes in the expected environmental treatment characteristics due to changes in predictor variables. In this case, the constant has an unstandardized coefficient of 13,927 which indicates the value of the environmental care character in baseline conditions or when there is no predictor variable.

The digital short story literacy variable has an unstandardized coefficient of 0.138. This shows that every one-unit increase in digital short story literacy is followed by an increase of 0.138 units in environmental care character. However, this coefficient is not statistically significant (Sig = 0.413), which means that the effect of individual digital short story literacy on the character of environmental care cannot be considered significant. Furthermore, the reading interest variable has an unstandardized coefficient of 0.357 indicating that every one-unit increase in reading interest is followed by an increase of 0.357 units in environmental care character. However, this coefficient is also not statistically significant (Sig = 0.160).

Furthermore, the interaction between digital short story literacy and reading interest is shown by an unstandardized coefficient of 0.009. This shows that for every one-unit increase in the interaction between digital short story literacy

and reading interest, it is followed by a 0.009-unit increase in environmental care characteristics. However, like the previous variables, this coefficient is also not statistically significant (Sig = 0.426). Based on these results, digital short story literacy, reading interest, and interactions between the two do not significantly affect environmental care characters individually or in combination. This means that other factors may play a role in shaping the environmental care character, which is not captured in this regression model.

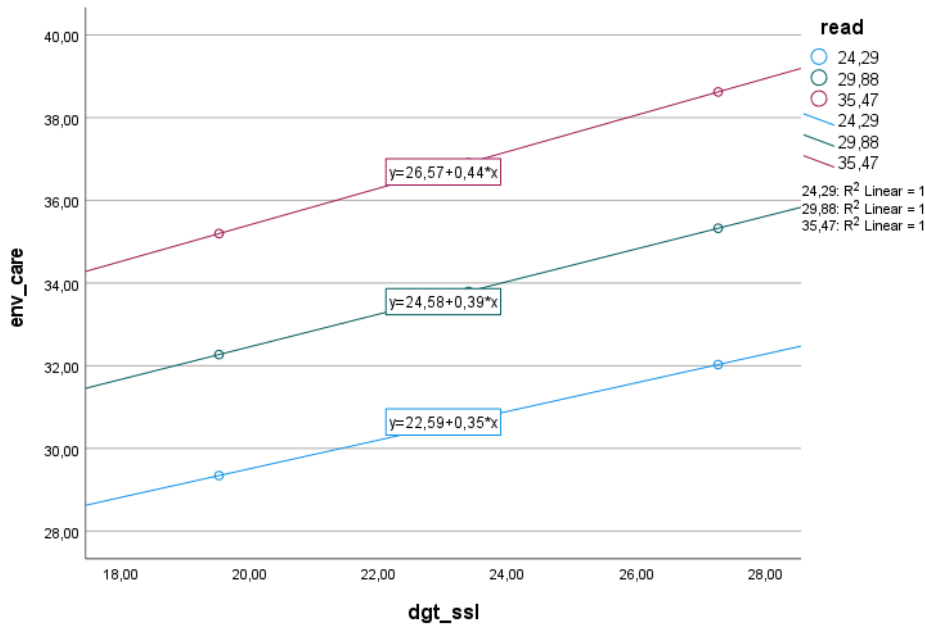


Figure 3. Moderated Regression Analysis Graph

V. DISCUSSION

Based on the statistical description, students are more dominant in Response 4 (*Agree*) on each variable. This proves that, as a whole, students understand the meaning and context of the digital short story. What is more, they apply environmental care behavior in various forms, namely through social participation and donations, protecting animals and ecosystems, and applying local wisdom or religious values. In the digital short story literacy variable, the percentage of response frequency for *Strongly Disagree* is 1.79%, *Disagree* is 3.46%, *Neutral* is 22.96%, *Agree* is 46.67%, and *Strongly Agree* is 25.12%. In the environmental care character variable, the percentage of response frequency for *Never* is 3.17%. For *Rarely* it is 6.38%, *Sometimes* is 27.24%, *Often* is 37.24%; and finally, *Always* is 25.97%. In the reading interest variable, the percentage of response frequency for *Never* is 2.78%, *Rarely* is 7.31%, *Sometimes* is 27.55%, *Often* is 38.38%, and *Always* is 23.98%. Technological and media literacy are online sources of information for analysis and criticism (Qi, 2023). In this digital era, short stories are often found in digital text whether on websites, applications, or social media platforms (Indah et al., 2022). Students who have good digital short story literacy can easily navigate and utilize various online short story sources and also understand the story elements contained therein (Indah & Rohmah, 2022; Kebede, 2023; List & Lin, 2023; Ridell & Walldén, 2023).

The regression results show that digital short story literacy significantly influences environmental care character. The t-statistic value for digital short story literacy is 8.947, and the corresponding p-value is 0.000 (p<0.05). This shows that the effect of digital short story literacy on environmental care character is statistically significant. This environmental character also encourages students to be involved in social activities and environmental campaigns, such as planting trees, cleaning beaches, or donating time and energy to projects that focus on nature conservation (Dai et al., 2023; Salceda et al., 2022). The depiction of human relations with nature reveals some environmental educational values that can be learned by both child and adult readers (Arafah et al., 2021; Kus á et al., 2014). In particular, there have been no experimental studies of the impact of fiction on attitudes toward animals over time and no experimental studies of the impact of fiction on behavior on behalf of animals (Małeckı et al., 2018, p. 54).

Meanwhile, based on moderated regression analysis, digital short story literacy, reading interest, and interactions between the two do not significantly affect environmental care characters individually or in combination. The digital short story literacy variable has an unstandardized coefficient of 0.138. This shows that every one-unit increase in digital short story literacy is followed by an increase of 0.138 units in environmental care character. However, this coefficient is not statistically significant (Sig = 0.413), which means that the effect of individual digital short story literacy on the character of environmental care cannot be considered significant. Furthermore, the reading interest variable has an unstandardized coefficient of 0.357, indicating that every one-unit increase in reading interest is

followed by an increase of 0.357 units in environmental care character. This coefficient is also not statistically significant ($Sig = 0.160$).

Furthermore, the interaction between digital short story literacy and reading interest is shown by an unstandardized coefficient of 0.009. This shows that for every one-unit increase in the interaction between digital short story literacy and reading interest, there is a 0.009-unit increase in environmental care characteristics. However, like the previous variables, this coefficient is also not statistically significant ($Sig = 0.426$). This means that other factors may play a role in shaping the environmental care character, which is not captured in this regression model. Therefore, reading interest is not successful in moderating the effect of digital short story literacy on environmental care character. This is in line with research which found that excessive use of digital media reduces interest in reading due to distraction or dependence on social media or other digital entertainment (Bakermans et al., 2022; Tanaka et al., 2023). Reading is a skill that includes two main components: decoding graphic symbols and understanding written messages (Aurpa et al., 2023; Franchi et al., 2023; Mastrothanas et al., 2023). Interest in reading includes the following dimensions: individual interest, situational interest, selecting texts with interest-enhancing elements, and interest self-regulation strategies (Springer et al., 2017). Digital texts provide new opportunities to improve reading comprehension (Diprossimo et al., 2023). If students experience direct benefits from reading such as increased comprehension and critical thinking skills, they tend to have a higher interest in reading. Conversely, if they experience negative experiences such as difficulty understanding texts or feeling bored, their interest in reading decreases (Snell et al., 2023). Knowledge of the reading process is not only of practical importance but of fundamental interest because of its systematicity, the load placed on various cognitive components (visual perception, attentional selection, memory, oculomotor planning) may be heavier than others, and these components evolve (Snell et al., 2023; J. Zhang et al., 2023; Zhou et al., 2023).

VI. CONCLUSION

Students are more dominant in *Agree* on each variable. This proves that, as a whole, students understand the meaning and context of the digital short story. They apply environmental care behavior in various forms: social participation and donations, protecting animals and ecosystems, and applying local wisdom or religious values. Digital short story literacy significantly influences environmental care character. The effect of digital short story literacy on environmental care character is statistically significant. Based on the moderated regression analysis, digital short story literacy, reading interest, and interactions between the two do not significantly affect environmental care characters individually or in combination. The effect of individual digital short story literacy on the character of environmental preservation cannot be considered significant. Furthermore, the reading interest is also not statistically significant. This means that other factors may play a role in shaping the environmental care character, which is not captured in this regression model. Therefore, reading interest is not successful in moderating the effect of digital short story literacy on environmental care character.

This research contributes to educational institutions by adding learning material on literary and environmental/ecocritical subjects in literacy skills in tertiary institutions as a step towards designing an inclusive education curriculum that considers aspects of digital and environmental short story literacy. Suggestions for this research, especially for academics, include further research being carried out to provide practical solutions related to the problem of students' interest in digital literacy and in general, such as the factor of decreased productivity due to the impact of digital media so that it will affect students' interest in digital reading. In the industrial sector, it is recommended to collaborate with students to make documentaries from digital short stories to promote environmental preservation.

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