| RESEARCH ARTICLE

The Effectiveness of Use of Power Point-Ispring Interactive Learning Media on Student Creativity

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| ABSTRACT

This research aims to increase student creativity by using the interactive media Power Point-Ispring. Creativity is measured using indicators: 1) the ability to think fluently (fluency), 2) the ability to think flexibly (flexibility), 3) the ability to think originality (originality), and 4) the ability to think in detail (elaboration). This research is experimental research with a pre-experimental design, with a one group pre-test post-test design type. The research instrument uses observation sheets to assess products made by students, namely interactive learning media Power Point-Ispring on science study material in elementary school. The research objects were five people from the basic education master's study program who took a science concentration. Data analysis techniques used the non-parametric statistical test Wilcoxon sign rank test. Then, an N Gain test was carried out to find out whether there was an increase in student creativity after being given learning using the interactive media PowerPoint-iSpring. According to the study's findings, the average pretest score was 52.5, the post test results percentage was 93.3, and all of the creativity markers had high N-Gain scores. This demonstrates how using interactive learning resources like PowerPoint - iSpring can help students become more creative.

1. Introduction

The very rapid development of science and technology in the 21st century requires us to have life skills known as 21st century skills. 21st century skills are known as the 4Cs, which include: 1) Critical thinking, 2) Creativity, 3) Collaboration, and 4) Communication[Trilling et al. 2009]. The current focus of education in Indonesia, including natural science (science) education, which is related to skills in the 21st century, is to improve student learning outcomes to master the 4C skills, which are the demands of the 21st century.

A teacher is required to have abilities that can teach students to be ready to face the 21st century through 21st century skills. Through 21st century skills, teachers are able to compete and have competence, so they can develop ways of thinking and reasoning power systematically, logically, critically and creatively. Producing teachers who have good 21st century skills can start when they are still students (as prospective teachers)[Sulistyaningrum et al., 2023].

In the era of Industrial Revolution 4.0, it is hoped that student competencies will not only focus on cognitive, but the most important abilities are competencies that involve learning processes that make students ready to compete in the global world through 21st century skills. The hope is that in every lesson, 21st century skills can be developed, including in the Science Studies course in elementary schools as one of the courses in the Master of Basic Education department.

Science Study course in elementary school (2 credits) examines basic science concepts and theories to get to know nature and its contents, natural phenomena and natural symptoms and can apply science concepts logically, systematically, critically, creatively, innovatively in science learning in elementary school, analyzing problems in implementing learning in elementary school and being able to provide alternative solutions. Efforts to improve the science study learning process in elementary schools continue to be made to achieve optimal learning outcomes, including increasing student creativity.

Stenberg et al. [2012] state that creativity is a combination of innovation, flexibility and sensitivity, which makes a person able to think productively based on personal and other satisfaction. Meanwhile, Guilford [1973] stated that " Creativity separates human beings from artificial intelligence. According to [Guilford 1973] ", creativity is the ability to complete and obtain many possible situations for solving a problem, which emphasizes the importance of a divergent view". The more possible responses that can be given to a problem, the more creative it is considered to be. According to Guilford [1973] states characteristic of creative adult There are fifteen but the author only mentions four namely fluency, flexibility, originality, and elaboration.

A person's creativity will be higher if they are able to show many possible answers to a relevant problem. Ruscio et al. [2019] state creativity is a process of thinking to face challenges, opportunities or problems and then connecting meaningful new ideas by generating various possibilities (from different points of view or perspectives), unusual possibilities or original and detailed ones, according to [Guilford 1973].

A person's creativity will be higher if they are able to show many possible answers to a relevant problem. Treffinger et al. [2002] define creativity as a process of thinking to face challenges, opportunities, or problems and then connecting meaningful new ideas by generating various possibilities (from different points of view or perspectives), unusual possibilities, and original and detailed ones. According to [Newell et al. 1958], categories that include special characteristics of creativity include fluency, flexibility, originality and elaboration. Based on these definitions, it can be concluded that creativity is a person's ability to produce an idea or new ideas smoothly, flexibly, original and detailed. Creativity is needed to find new innovations in human life. Therefore, creativity is important in preparing students to face the era of Industrial Revolution 5.0. With good creativity, new ideas can be generated based on the knowledge they already have to be used in solving problems.

The use of media in learning can improve understanding of material, generate learning motivation and learning outcomes, and also increase student creativity. Implementation of 21st century learning integrates literacy abilities, knowledge skills, skills and attitudes, as well as mastery of technology. Learners are required to be able to operate technology so that the learning process becomes easier, faster, and more beautiful in order to promote students' creativity and interest in learning. Technology is developing more quickly, yet this has improved learning. Every learner is required to master technology in order to provide interesting learning media for learners.

The effective use of digital learning tools in classrooms can increase student engagement, help teachers improve their lesson plans, and facilitate personalized learning. It also helps students build essential 21st-century skills [Holcomb-McCoy et al. 2020]. The use of information technology influences the paradigm of the learning process; students are no longer just objects but partners, so they are not the only source of knowledge [Himmelsbach, 2022]. For this reason, a teacher must be able to design learning that facilitates students to develop critical and creative thinking skills, so that students are more focused in making decisions [Aswan et al 2018].

Learning materials that combine text, audio, motion pictures, animation, and video in order to enhance learning are referred to as interactive learning materials. Among the interactive educational resources is PowerPoint Ispring Suite 8. ISpring is a tool that provides several features on PowerPoint, including realistic dialogue simulation characters with additional assessment evaluation features. The assessment aspect relates to the application of Computer Based Test (CBT) principles, as has been researched by Darmawan et al. [2016], namely regarding the aspect of Communication Strategy for Enhancing the Quality of Graduates' Nonformal Education Through Computer Based Test (CBT) in West Java Indonesia. The results of creating learning media using I-Spring can be converted into Flash, powerpoint, HTML5 and MP4 video formats or can even be used as mobile-based media [Vikulova et al. 2018]. The advantage of the Ispring application is that it can provide a variety of question forms accompanied by final scoring and is equipped with audio recording, video recording, presentation management and flash. Apart from that, the iSpring add-on will provide additional features that can provide interactive learning, so it is hoped that it will increase student creativity.

Based on the background explained above, it is necessary to conduct research on "The Effectiveness of Using Ispring Power Point Interactive Learning Media to Increase Student Creativity". The aim of this research is to describe the effectiveness of using the interactive learning media Power Point ISPRING to increase student creativity".

2. Literature Review

The use of technology in learning is very important in facilitating learners' quality learning [Group N& M 2003]. Technology can be used as a learning medium. Some of the reasons that make learning media using ICT effective in learning are that digital learning technology allows learners to understand concepts more quickly and completely, to connect theories and applications more proficiently, and to engage in learning more easily while also improving instructional techniques, utilizing instructor time, and facilitating the widespread dissemination of knowledge [Wardhono et al. 2017]. Technology-based learning media that are often used are *PowerPoint*. By using Microsoft Power Point, learners can create interesting IT-based learning media to make it easier for them to impart knowledge.

Interactive learning media is a learning media that associates text, sound, moving images, animation, and video that aims to facilitate the learning process. One of the interactive learning media with Power Point, Ispring Suite 8, has not been developed much. Ispring is one of the tools that can convert presentation files that are compatible with Power Point to be made into the form of Flash. According to Cahyanti [2019], iSpring is a tool that converts event documents into text structures, which, of course, can be coordinated into Microsoft Power Point. Using this application, we can create different types of tests, combining sound, video and YouTube. The iSpring suite 8 application is an electronic device that understands stationery and allows the creation of various types of e-learning content. The iSpring suite 8 application has various features and can be used to create presentations, quizzes, surveys, interactions, dialogue simulations, or screen recorders directly into the Power Point application [Motta et al. 2021]. iSpring Suite 8 is also a tool integrated with Microsoft Power Point that can be published in HTML form and can be used on Android devices with Intel XDK software [Dasmo et al. 2020].

The advantage of *the ispring* application is that it can provide a variety of question forms accompanied by final scoring and is equipped with audio records, video records, presentation management and flash. In addition, the *iSpring add-on* will provide additional features that can provide interactive learning which will make critical thinking skills and learner creativity increase. *ISpring Suite* 8 was chosen because it is freely accessible.

The results of research by Solihah et al. [2020] entitled "Application of Interactive Multimedia Based on the I-Spring Suite 8 Application on Learning Motion Systems in Humans at SMA Darussalam Garut concluded that there was a significant increase in student learning outcomes between the use of interactive multimedia on student learning interest and student knowledge [Solihah et al. 2020]. From a literature review on *Google Scholar* for five years (2018-2022) Savira et al. [2023], it can be concluded that the use of iSpring Suite interactive media can be a tool for learning science in elementary schools, making it easier for teachers to explain lessons and make it easier for students to understand the material because it can attract students' attention to help participate in the learning process.

This creativity is a combination of innovation, flexibility, and sensitivity that makes a person able to think productively based on personal satisfaction and other satisfactions [Dadvar et al. 2012]. Creativity is a process that develops unusual ideas and produces new thinking that has a wide scope [Febrianti et al. 2016].

The more possible responses that can be given to a problem, the more creative. A person's creativity is higher if he is able to show many possible answers to a relevant problem. Creativity is a thought process to face challenges, opportunities, or problems and then relate meaningful new ideas by generating diverse possibilities (from different viewpoints or perspectives), unusual or original possibilities, and details [Treffinger et al. 2002]. According to Arini [2017], the categories that include specific characteristics of creativity include *fluency, flexibility, originality,* and *elaboration*. Based on some of these definitions, it can be concluded that creativity is a person's ability to produce an idea or new ideas smoothly, flexibly, originally, and in detail. Creativity is needed in finding new innovations in human life.

The use of interactive learning media, such as Power Point-iSpring, involves a learning process that makes learners ready to compete in the global world through 21st *century skills,* including creativity. The effectiveness of using Power Point-iSpring interactive learning media on learners' creativity is: enhancing learners' participation in learning, encouraging critical thinking and analysis, making enrich learning methods, enhancing divergent and convergent thinking skills as well as increasing problem solving ability. Research results [Andik 2023] showed that the application of interactive learning media Power Point-Spring can increase the creativity of elementary school students.

3. Methodology

The purpose of this study was to enhance the creativity of Master of Basic Education students with a concentration in Science after implementing learning using the interactive learning support Power Point ISPRING Suite 8. The type of research is an experimental study with a single group pre-post test study design.

Tabel 1. One group pretest posttest research design

Pretest	Treatment	Postest
O1	X	O2

Information:
    O1: Pretest
    O2: Post test
    X: Treatment, learning using interactive learning media Power Point-Ispring Suite 8

In this study, the research subjects were first given a pretest followed by a treatment that involved learning using Ispring PowerPoint media, and at the end of the learning, the research subjects were given a posttest. This research design was chosen with the aim of finding out how to increase student creativity through learning using the Ispring Suite 8 Power Point learning support.

This study was conducted at PGRI Ronggolawe University in the Master of Basic Education department, the academic year 2022/2023, in odd semesters. The research subjects are 5 students majoring in science and teaching using interactive learning materials.

Ispring Suite 8 Power Point learning materials. The research object of the thesis is scientific research in elementary schools. After learning how to use Ispring Suite 8 interactive PowerPoint learning materials on electronic devices, students are individually and independently tasked with creating interactive PowerPoint learning materials using science study materials in elementary school. The science material topics created for assignments are adapted to science topics in elementary school. The quality of the ispring suite 8 power point interactive learning media produced by students is measured using creativity observation instruments, with indicators: 1) ability to think fluently (fluency), 2) ability to think flexibly (flexibility), 3) ability to think originality (originality), and 4) the ability to think in detail (elaboration). Before being used as research instruments, all instruments have been verified and validated by validators. Data collection techniques by observing products produced by students, that is, interactive learning media Power Point Suite 8. Data analysis was carried out using the non-parametric statistical test Wilcoxon sign rank test. To find out whether there was an increase in student creativity after being given learning using the interactive media Ispring Suite 8 Power Point, an N-Gain test was carried out. Student creativity data was analyzed for each indicator using the normalized gain score $<g>$. The normalized gain score is a comparison of the actual gain score to the maximum gain score. The actual attainment score is the attainment score a student can achieve, while the maximum attainment score is the highest attainment score a student can achieve. The standardized scoring formula is as follows.

Information:
$<g>$: normalized gain score
T1': posttest score
T1: pretest score

According to [Meltzer 2002], the normalized gain score is divided into three categories, which can be seen in Table 2.

Table 2. Normalized Gain Score criteria

Normalized gain score	Classification
$0,00 < h \leq 0,30$	low
$0,30 < h \leq 0,70$	medium
$0,70 < h \leq 1,00$	high

4. Results and Discussion
This research provides creativity data results which are measured by indicators: 1) the ability to think fluently (fluency), 2) the ability to think flexibly (flexibility), 3) the ability to think originality (originality), and 4) the ability to think in detail (elaboration). The pretest results are seen in Table 3.

Table 3. Pre-Test Data on Student Creativity

No	Creativity Components	Creativity Components	Score					Total	%
			A	B	C	D	E	5	
1	Fluency	Smooth in express ideas /solve problems	2	2	2	2	1	9	45
		Works better and faster than others	3	2	3	2	1	11	55
2	Flexibility	Have different ways of completing tasks	2	2	3	2	2	11	55
		Apply concepts/principles/theories/laws/rules in carrying out assignments	2	2	3	2	2	11	55
3	Originality	Uses task-related concepts that no one else would have thought of	2	2	2	2	2	10	50
4	Elaboration	Doing tasks in detail and differenly	2	2	3	2	2	11	55
		Total	13	12	16	12	10	63	315
		Average	2,17	2	2,67	2	1,67	10,5	52,5
					2.1				

The results of the creativity posttest can be seen in Table 4.

Table 4. Post-Test Data on Student Creativity

No	Creativity Components	Creativity Components	Score					Total	%
			A	B	C	D	E	5	
1	Fluency	Smooth in express ideas /solve problems	4	4	4	3	3	18	90
		Works better and faster than others	4	3	4	4	3	18	90
2	Flexibility	Have different ways of completing tasks	3	4	4	3	4	18	90
		Apply concepts/principles/theories/laws/rules in carrying out assignments	4	4	4	4	4	20	100
3	Originality	Uses task-related concepts that no one else would have thought of	3	4	4	3	4	18	90
4	Elaboration	Doing tasks in detail and differenly	4	4	4	4	4	20	100
		Total	22	23	24	21	22	112	560
		Average	3,67	3,83	4	3,5	3,67	18,67	93,3
					3,73				

Data from pretest and posttest scores were analyzed using the Wilcoxson test with a significance level of 0.05. This analysis technique is used to prove whether or not the difference between the pretest and posttest scores is significant.

The hypothesis in this research is:

H1 = There is a significant influence between the use of interactive learning media on increasing student creativity
H0 = There is no significant effect between the use of interactive learning media on increasing student creativity

Under the condition:

H0 = if the Asymp.sig value > 0.05, then the hypothesis is rejected
H1 = if the Asymp.sig value <0.05, then the hypothesis is accepted

Table 5. Wilcoxon Signed Ranks Test
Ranks

		N	Mean Rank	Sum of Ranks
Posttest - Pretest	Negative Ranks	0[a]	.00	.00
	Positive Ranks	5[b]	3.00	15.00
	Ties	0[c]		
	Total	5		

a. Post-test < Pre-test
b. Post-test > Pre-test
c. Post-test = Pre-test

Test Statistics[b]

	Posttest - Pretest
Z	-2.032[a]
Asymp. Sig. (2-tailed)	.042

a. Based on negative ranks.
b. Wilcoxon Signed Ranks Test

From calculations using SPSS, the probability (Asymp. Sig) < 0.05 is obtained; this means that H0 is rejected and H1 is accepted, namely that there is a significant influence between the use of interactive learning media on increasing student creativity.

Table 6. Results of Analysis of Normalized Gain Scores for Student Creativity

No	Creativity assessment indicators	Average score		Normalized Gain score	Criteria
		Pretest	**posttest**		
1	Fluency	1	3,6	0,87	High
2	Flexibility	2,2	3,8	0,89	High
3	Originality	2	3,6	0,8	High
4	Elaboration	2,2	4	1,0	High

From Table 3, the average pretest score for creativity is 2.1, or 52.5%, as can be seen. In the meantime, Table 4 shows that the posttest creativity average is 3.73, or 93.3%. This demonstrates that the mean score on the posttest is greater than the pretest. From this result, it can be understood that there is a big difference in using the interactive learning tool Ispring Suite 8 Power Point on students' creativity. Table 6 shows the standardized achievement scores, which also show that each creativity indicator is ranked at a high level. Therefore, it can be concluded that using Power Point-Isprint interactive media is very effective in increasing students' creativity.

The results of this study show that after learning to use the interactive tool Ispring Suite 8 Power Point, students' creativity increased in all indicators (Tables 3 and 4). Normalized Gain scores for all indicators are high (Table 5), which means that learning with Ispring Suite 8 interactive Power Point is very effective in increasing student creativity in all indicators. The results of this research are in line with those reported by Fadillah et al. [2021], who reported an increase in student creativity after learning with the interactive learning media Ispring on computer history material. Furthermore, [Fadillah et al. 2021] stated that Ispring-based interactive learning media makes learning more fun and trains students to be independent and able to increase creativity. Teacher creativity in implementing learning in the classroom can be done through learning strategies and media. Ispring is a technology that can be used to develop learning media. By utilizing the Ispring device, we can add various elements, such as images, video, and audio, so that the resulting learning media becomes more interactive and interesting. According to [Putriyani et al. 2019], with the iSpring device, which is integrated with Microsoft Power Point, the learning media developed can be published in 6 formats, namely video format, Learning Management System (LMS), CD, Ispring learn, web, and Ispring cloud. Vikulova et al. [2018] state that the results of creating learning media using I-Spring can be converted into Flash, PowerPoint, HTML5 and MP4 video formats or even be used as mobile-based media. These various facilities have become a means to develop student creativity.

In this technological era, the use of technology in learning has become a necessity to facilitate the learning process. Creative teachers are needed for the success of a learning process, including creativity in matters related to technology. As stated by Suharyati et al. [2019], developing students' creativity requires supporting conditions, namely creative teachers who include creative learning (creative teaching), creative principals (creative leadership), and a creative environment. Furthermore, Suharyati et al. [2019] and Toyn [2008] stated that creative learning in the classroom could produce creative students, and creative students generally have higher abilities and are more resilient than students who are not creative. Apart from Pentury, [Phuangphae 2017] also stated that student creativity will emerge if the teacher as a pilot in the classroom also has adequate creative abilities. Because of the importance of this creative ability, the creative abilities of teachers and prospective teachers need to continue to be trained and developed.

The creativity possessed by a teacher or prospective teacher is very important so that they can create creative learning. According to Suharyati et al. [2019], creative learning is a learning process that requires teachers to be able to motivate and promote students' creativity in the learning process. Creative learning requires teachers to be able to stimulate students to develop their creativity, both in the context of creative thinking and the context of action. Creative thinking is the ability to imagine but be rational.

5. Conclusion
The results of this research can be concluded that the use of learning media and giving assignments to create Power Point ISPRING interactive media are very effective in increasing student creativity. The average creativity pretest score is 52.5, and the average creativity postest is 93.3. This indicates that the average score of the postest is higher than the average score of the prestest. From these results, it can be interpreted that there is a big difference in the use of interactive learning media ispring suite 8 power points on student creativity. From calculations using SPSS obtained a probability (Asymp. Sig) of < 0.05, this means that H0 is rejected and accepted H1, that is, there is a significant influence between the use of interactive learning media on increasing student creativity. The results of the analysis of normalized gain scores (≥ 0.8) also show that each indicator of creativity belongs to a high classification. Thus, it can be concluded that the use of interactive media PowerPoint-iSpring suite 8 is very effective in increasing student creativity.

5.1 Suggestions
The results of this study show that interactive learning media PowerPoint iSpring suite 8 proved to be very effective in increasing student creativity. For this reason, it is recommended that learners (lecturers) use interactive learning media PowerPoint iSpring as an alternative to increase student creativity.

This research uses interactive learning media power PowerPoint Suite 8, limited to ICT subjects, to enhance the creativity of postgraduate students. For this reason, further research needs to be carried out to determine if interactive learning media can be used to improve other 21st-century skills, such as critical thinking, collaboration, and communication.

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