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The Use of ICT as a Resource and Media for Modern 21st Century Learning in Primary Schools

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ABSTRACT

The advancement of technology and information makes human life easier, but at the same time it makes some humans lack morals and behave badly due to lack of socialization. Behind all the bad impacts on the development of technology, there are also positive impacts in it, such as in the field of education. One of the positive impacts is ICT (Information and Communication Technology) learning media. The purpose of this study is to determine the use of ICT (Information and Communication Technology) as a Source and Media for Modern 21st Century Learning in Elementary Schools. This research uses quantitative methods, data obtained from distributing questionnaires and through interviews. The results of the study explain that the usefulness of ICT (Information and Communication Technology) as a source and modern learning media in elementary school children is very useful and helps students in carrying out learning. The conclusion of this study explains the usefulness of ICT (Information and Communication Technology) as a source and modern learning media in elementary school children is very helpful in the learning process. The researcher realizes the limitations of this study were only conducted in elementary schools in one of the districts in West Sumatra province, the researcher hopes that future researchers can conduct the same research with a wider range in order to continue this research. Researchers also recommend to researchers who will continue to be a benchmark in conducting research related to the use of ICT (Information and Communication Technology) as a modern learning resource and media in elementary schools.

Keywords: *Learning, Media, Schools*

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INTRODUCTION

Education in the 21st century today may be better and more directed if it follows this advanced era with technology, especially starting from elementary school (Choo, 2020; Cooke & Kumar, 2020; Dolapcioglu, 2020). Where education is currently needed so that elementary school children have quality from all aspects where the world of education is currently known as Information and Communication Technology (ICT) (Finch et al., 2019; J. Lee, 2020). Usually known as ICT (Technonology and Information) the use of Information and Communication Technology (ICT) or commonly called ICT makes a very big change in the world of elementary school education such as teachers who deliver their lessons to elementary school children to school management (Reza Anik et al., 2020; Trott, 2019). Although at the time of the 2013 curriculum ICT was removed in the learning subjects but replaced with other learning, the use of Information and Communication Technology (ICT) has many benefits (Khanal et al., 2019; Liu, 2019; Rathner & Schier, 2020). One of the benefits of using Information and Communication Technology (ICT) is that learning becomes more innovative and creative Instructors must then create interesting technology-based learning materials (Carvalho, 2019; Du et al., 2021; Md Enzai et al., 2021). Because of these technological advances, all human activities have become easier, and these advances can be seen in the surrounding environment.

The world has entered the 21st century which has a huge impact on the development of technology and communication and has changed from the previous century, the concept of the 21st century is called (21st Century Learning) (Ahmad et al., 2020; Kempe et al., 2018). It can be understood that 21st century learning aims (1). communicate (2). collaborate (3). must be creative and innovative (4) (Wang et al., 2018) . Must have a critical nature in solving problems, so in the 21st century students must have literacy in media and technological literacy and must have survival skills in order to have graduates who are ready to compete in the global market (Mercan & Uysal, 2023; Szabo et al., 2023). So students must have skills in the 21st century, namely having to understand and master ICT (ICT Literacy Skill) According to UNESCO Asia and Pacific Regional Bureau for Education an Commonwealth of Learning said that ICT (Technology and Information) must be utilized in the use of communication and channeling information ICT must be understood (Kim & Morrison, 2018; Sharma et al., 2019). Because ICT is a communication that has a scope such as radio television, software networks, satellite system hardware, television and so on ICT (Technology and Information) is a very important development in the world of learning (Dravet, 2021; Muneer et al., 2022) . Therefore, students should be more careful in utilizing current technological developments so that technology can be utilized in the teaching and learning process to increase students' motivation and enthusiasm for learning (Khan, 2018; Payne-Sturges et al., 2018). If technological developments are utilized properly, student learning outcomes are in line with their abilities.

In the 21st century or also called the modern era, students must have skills in using ICT (Technology and Information) (Wang et al., 2018). The school is the one that

provides a place for students to have skills in delivering their learning (Nielsen et al., 2019; Valdez et al., 2022). Schools provide facilities to students as their provisions in today's modern century. then the quality of learning must be improved again, therefore teaching must have a plan so that learning becomes more creative and innovative (Holt et al., 2020; Huntwork et al., 2022; Jenkins et al., 2023). so that learning can run perfectly there are 4 roles of the teacher so that it is implemented. learning in the 21st century then the following are the roles of the teacher so that the implementation of perfect education (1) planning, namely developing learning development so that it is easy to understand and as creative and innovative as possible (2). organizing, namely combining learning resources so that they become more effective and efficient (3). leader, namely providing motivation to students so that they can easily understand the lesson (4). maintaining whether learning has achieved the goals in learning or not

Mastery of Information and Communication Technology (ICT) is very important in the 21st century, mastery of computers to process, access and provide information both individually and in groups is an important requirement in this digital era (Sokol et al., 2019; Stockless et al., 2018; Tulung, 2020). the development of Information and Communication Technology (ICT) is very fast if you don't learn it well, you might be left behind, so you have to learn technology, almost everyone has used it Information and Communication Technology (ICT) such as mobile phones and the internet, so developments in the use of technology must be developed following the benefits of using Information and Communication Technology (ICT) in the world of education (1). can increase the memory of students in terms of using media (2). can overcome limited time and energy (3). make learning very interesting (4). can do pemebelajaran wherever they are (5). make learning effective and creative.

Based on the results of this relevant research with the title of using Information and Communication Technology (ICT) as a source of 21st century learning media for elementary schools, it is said that developments in the world of technology are growing rapidly (Cai, 2018; Dolapcioglu, 2020; Greczynski & Hultman, 2018). thus making education in the use of learning media widespread with the existence of ICT (Technology and Information) this development is very in accordance with the development of this modern century in order to encourage the use of technology in the learning process and teaching learning in using Information and Communication Technology (ICT) as a form of learning in the 21st century the use of ICT in elementary schools is very effective because teachers can easily convey material and be more interesting and can also make it easier for students because they can carry out the learning and teaching process anywhere so that they can provide material easily (Ali et al., 2021). This learning method may be more innovative than learning before knowing what Information and Communication Technology (ICT) is,

Based on previous research, it can be concluded that there are changes and differences (novelty) that exist in this research, the current research provides information about the use of ICT as a learning media source in the 21st century in elementary schools (Garcia Jalón et al., 2020; Jones et al., 2022; Wagner-Olfermann, 2022). where this

information aims to make Information and Communication Technology (ICT) as a role in learning media so that the learning process can run optimally for elementary school students in the form of information and knowledge in the development of this modern era and also educators can provide material that is easy for the educator to understand so that the educator can easily understand the use of ICT (Information and Comunication Technology) so that the educator can utilize technology to the fullest.

The purpose of this research is to find out the use of ICT (Information and Comunication Technology) as a primary school 21st century learning media to find out the advantages and disadvantages of using Information and Comunication Technology (ICT) in primary school learning media (G. J. Lee et al., 2018; Serinaldi et al., 2018). and know the benefits of using Information and Communication Technology (ICT) in the learning media, namely ICT (Information and Comunication Technology) makes it a storehouse of knowledge, meaning that Information and Comunication Technology (ICT) is a science that covers a very broad aspect, Information and Comunication Technology (ICT) is a tool in helping lessons, meaning that with the existence of Information and Comunication Technology (ICT) current learning can be learned easily with the existence of Information and Comunication Technology (ICT) (Ibrahim et al., 2020). such as examples of video image animation and awards as well as Information and Communication Technology (ICT) is a learning tool.

Based on the description above, the researcher is very interested in taking a title of the use of Information and Communication Technology (ICT) as a 21st century media source in elementary schools (S. Shao et al., 2018; Xia et al., 2018). This study was conducted to find out how the application of Information and Communication Technology (ICT) in the use of 21st century learning media in elementary schools so that learning becomes more effective With this study, researchers can find out the advantages and disadvantages of ICT in self-study during the learning process and can find out the learning outcomes obtained by students in the presence of ICT (Communication and Information Technology) as a learning medium. researchers hope that with the existence of ICT (Information and Communication Technology) (Dumas et al., 2019; Ibrahim et al., 2020; Leung et al., 2018). with this more diverse learning model. Therefore, the existence of (Information and Communication Technology) ICT in the use of 21st century media in elementary schools in order to make effective learning activities.

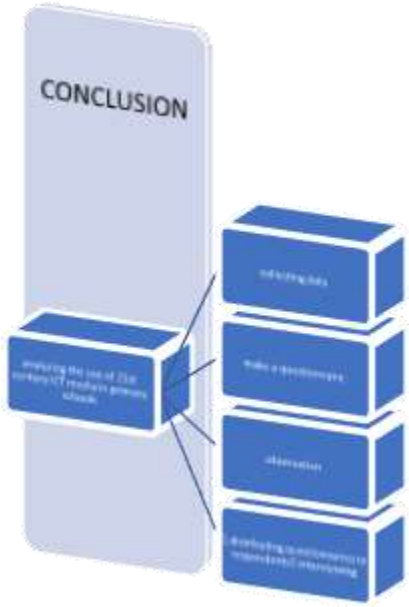
RESEARCH METHOD

This research was conducted using a quantitative approach. Quantitative research methods are used to study natural objects. In this method, the researcher acts as the main instrument, data collection methods are combined, data analysis is inductive (Al-Turki et al., 2019; Hermanussen et al., 2020; Pompili, 2019). and findings emphasize meaning rather than generalization. The researcher used a questionnaire in which provided a question that the researcher asked the respondents through Google Form, and the researcher also used the literature review method to improve the quality of the researcher's research by collecting data from definite sources according to the research. The first step

is to describe the issue, then the researcher makes it a research topic by looking at the current situation and issues facing the 21st century, when everything must be technology-based. Therefore, since elementary school, ICT is very important to prepare students for the 21st century, and teachers must also have ICT competencies and abilities to help students in this preparation.

Literature and questionnaires were used to collect data in the second step. On April 14, 2023, this questionnaire was used in the study, and 33 people responded, including two primary school supervisors, 19 primary school principals, and 12 primary school teachers in Kecamatan lima kaum, Tanah Datar district. Then, the researcher conducted a literature review of relevant documents, such as scientific articles, to collect data to support the research findings. The third step of data processing and analysis, Product Design, involved creating a design model through ICT-based learning and Gorton's theoretical approach. A combination of descriptive and predictive models were used. This model explains how to achieve the objectives and influences each step of the process (Cooper et al., 2018; Kou et al., 2018; P. Shao et al., 2019). . became more tangible. It was an unfinished trial concept, but it passed the validation test.

In the fourth step, Validation, the design is carried out with a product validation test conducted by two experts and a policy maker to ensure that it meets the theoretical and scientific standards. Validation The product validation test conducted by two experts and a policy maker, the Principal of SD 10 Baringin, ensured that the design met the theoretical and scientific standards. In the fifth step, design improvements were made according to the validation results and validator suggestions to produce an ICT-based learning management model (Bondarets et al., 2022; Jeon et al., 2019; Md Enzai et al., 2021). Step six: The information that was obtained was then examined and organized according to the needs of the examination. After that, the researcher verifies the accuracy of the data by comparing it with previously collected data or relevant theories until finally being able to do so in the final stage.



RESULTS AND DISCUSSION

Strategies for using ICT as 21st century learning media in elementary schools

The use of ICT (Information and Comunication Technology) as a learning medium in elementary schools is very influential on basic education education where education is currently needed so that elementary school children have quality from all aspects ICT makes a very big change in the world of school education making education easier and more practical and more creative in the 21st century educators must have skills in the use of technology well and correctly and the use of Information and Communication Technology (ICT) makes learning more interesting because the educator can display animated images and media ICT (Information and Comunication Technology) so that students can understand the use of Technology properly and correctly and the use of Information and Comunication Technology (ICT) makes learning more interesting because the educator can display animated images and other media thus learning in the 21st century must have skills in the use of ICT (Information and Comunication Technology) so that learning becomes effective and efficient.

Primary school children's learning in the 21st century using ICT

Elementary school children's learning in the use of ICT is very influential following how many factors experienced by the learners learning becomes more effective innovative and creative can facilitate the learners in receiving the material taught by the teacher but there is also a negative value in the use of ICT (Information and Communication Technology) when the teacher cannot use Information and Communication Technology (ICT) so that the teacher is difficult to provide material to the students especially when learning online therefore the educator must have skills in the use of Information and Communication Technology (ICT) teachers cannot use Information and Communication Technology (ICT) so that the teacher is difficult to provide material to the student especially when learning online therefore the educator must have skills in the use of Information and Communication Technology (ICT) so that learning becomes more efficient, therefore the researcher examines the use of Information and Communication Technology (ICT). and Comunication Technology (ICT) as a learning resource for elementary schools using quantitative methods quantitative methods are methods of collecting data data starting from analyzing cases collecting data to research that will be aimed at getting information to be achieved then have to make observations to the field and dig up more information then develop questions according to the state of research in the form of management and calculation called quantitative research in the form of concrete data quantitative research methods can be in the form of questionnaires or questionnaires therefore learning using ICT (Information and Comunication Technology) in elementary schools can be analyzed using quantitative methods. Quantitative research can make it easier for researchers to find out information related to ICT learning in elementary schools.

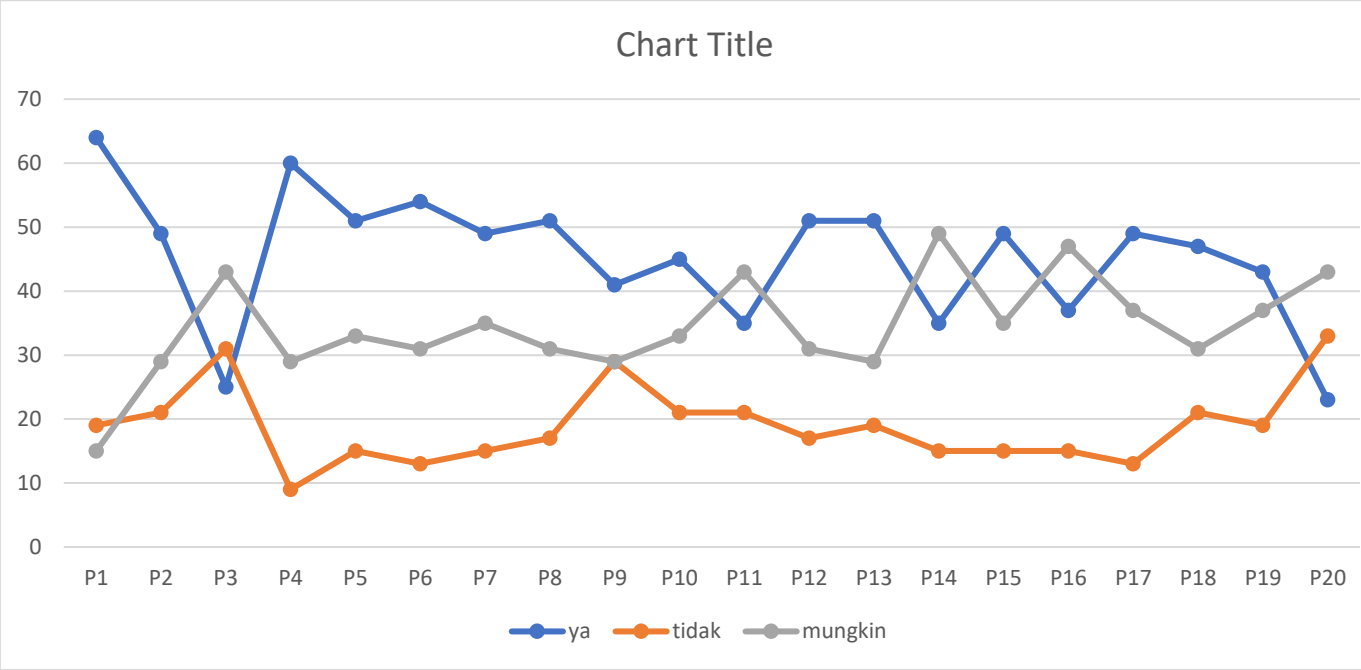
Table 1.1 Results of Questionnaire Distribution

Statement	yes	No	May
Is the use of ICT very useful for elementary school children?	64	19	15
Does the use of ICT help as a learning medium for elementary school children?	49	21	29
Can using ICT make elementary school children boring?	25	31	23
whether the use of ICT can make learning effective	60	29	9
With the existence of ICT does the teacher easily convey material to his students	51	15	33
Is the learning model using ICT in accordance with the learning objectives	54	13	31
whether the use of ICT used by teachers is in accordance with elementary school learning.	49	15	35
does any technological development help	51	17	31
teachers in the teaching process in the primary classroom	41	29	29
	45	21	23
whether teachers have increased ICT knowledge in elementary school children.	35	21	43
whether elementary school children can understand learning through ICT.	51	17	31
Is the old learning effective without using ICT or not?	51	19	29
are elementary school children eager to use ICT?	35	15	49
whether learning using ICT can already be given to elementary school children	49	15	35
with the existence of ICT, can it improve the quality of elementary school children?	35	15	47
whether ICT media can improve the quality of elementary students.	49	13	37
whether using ICT can complicate learning methods in elementary school children.	47	21	31
whether by using ICT can make elementary school children understand technology.	43	19	37
whether by using media through ICT can increase the enthusiasm of elementary school children.	23	33	43

In the table above there are statements about how the usefulness of ICT (Information and Comunication Technology) in elementary school children The table is the result of research in examining the usefulness of Information and Comunication Technology (ICT) on the learning of elementary school children The questions given are 20 pieces containing the usefulness of Information and Comunication Technology (ICT) in elementary school children The statement whether the existence of ICT makes it difficult for teachers to convey learning with a percentage of 22 with the category strongly agreeing The table above shows whether using ICT media can increase the enthusiasm of elementary schools with a percentage of 45 obtaining strongly agreeing The table above shows whether using ICT media can increase the enthusiasm of elementary schools with a percentage of 45 strongly agreeing The researcher also examines whether using ICT can make elementary school children understand technology by obtaining an agreed category of 43 The table above also discusses whether the learning model using ICT is in accordance with the learning objectives with an agreed category of 52.

Researchers also examined whether the use of ICT is very beneficial for elementary school children with an agreed category of 47.2. Furthermore, the statement that elementary school children already know ICT with an agreed category of 41 next, the researcher also examines whether using ICT can complicate learning methods in elementary school children with an agreed category of 35 and the percentage of doubt is greater than the percentage of yes according to surveys conducted in elementary schools most students lack understanding of learning methods based on (Information and Communication) Technology due to lack of teacher knowledge in the use of ICT (Technology and Communication) percent The table above shows that with the existence of ICT whether it can increase the enthusiasm of elementary school students with a percentage of 45, 3 percent The research examined the use of ICT (Information and Comunication Technology) in the 21st century in elementary schools many teachers experience difficulties in the use of ICT (Information and Comunication Technology) the difficulties experienced by teachers vary from how to use ICT how learning can run smoothly and students can understand the material and there is also a positive impact of

the use of ICT, namely learning becomes more interestin



The results of the above questionnaire distributed through the goegel form through research with the question of whether the use of Information and Communication Technology (ICT) is very beneficial for elementary school children according to a survey conducted through the goegel form there are as many as 62.3 percent who agree saying that with Information and Comunication Technology (ICT) ICT is very helpful for students in their learning. There are also those who give an assessment that learning by using ICT is less useful with a percentage of 18.9 and there are also those who disagree with the use of Information and Information Technology with a percentage of 18.9 as well. It can be concluded that the use of ICT can make learning easier because the percentage is greater than the others.

The gravic results above are the results of distributing questionnaires given by researchers through goegel forms which are done online to teachers and to students. whether the use of ICT helps as a learning medium for elementary school children and get answers 32.1 doubts and some disagree with a percentage of 20.8 but most students say that the use of Information and Comunication Technology (ICT) is very helpful to them in learning. with a higher percentage of both. with a percentage that is more than both of them, namely as much as 47.2 reinforced by the results of interviewing one of the students named Rahman from Primary School 20 Baringin who said that by using (Information and Comuncation Technology) the lesson became more creative and fun.

The results of the above gravik where research was conducted to teachers through goegel form where the question With the existence of ICT does the teacher easily convey material to his students with a high percentage saying yes it can make it easier for them to deliver material with a percentage of 49.1 percent. But there are those who hesitate to give an assessment in delivering the material with a percentage of 34 percent

and 17 percent said no after a survey to elementary schools. researchers found that teachers who gave answers hesitated and did not because they did not understand the use of (Information and Comucation Technology) ICT so the learning that teachers did was less effective because they could not use technological media but in this century teachers must be required to have skills in the use of Information and Comunication Technology (ICT) media because it has entered the modern era.

The results of the above gravic that the researcher gave through the goegel form with the question of whether the use of (Information and Comunication Technology) used by the teacher was in accordance with elementary school learning the results of the research used many students who hesitated in (Information and Comunication Technology) ICT as a medium of learning with a percentage of 37.7 percent and those who said they did not understand very well in the use of ICT were fairly small, namely 15, 1 percent only and the highest percentage is that students say they are in accordance with elementary school learning because the learning they receive is more innovative and creative so that the educator does not feel bored in doing learning This result is also reinforced by the results of the researcher's interview with the educator of elementary school children 1 Baringin who said that learning became more interesting.

The results of this study are the impact of the use of 21st century Information and Communication Technology (ICT) on Elementary Schools. ICT makes the world in Indonesia experience enormous changes, especially in the world of education, there are also many causes (Information and Communication Technology) leading to negative things but there are efforts that can be made to use Information and Communication Technology (ICT) to change it into something more positive by the way teachers and parents direct the students in the use of media and utilize the use of ICT with learning media. so that using Information and Communication Technology (ICT) is very beneficial such as 1 making it easier to provide broad access to students and teachers 2. increasing the equality of educators 3. increasing the effectiveness and efficiency of management, management and administration of educational institutions 4. increasing the professionalism of the teacher 5. can improve the quality and quality of learning between the educator and the teacher.

The use of Information and Communication Technology (ICT) as a learning medium is certainly very influential in the education of educators in the use and understanding of the educators convey Because of the laziness of students and the absence of educator guidance, it is very difficult for them to understand online teaching, let alone lessons. Meanwhile, when information and communication technology (ICT)-based media is used in the learning process, material that is difficult for students to understand can be explained again so that students can understand learning that was previously not understood. To improve the quantity and quality of learning, the learning system must conduct an evaluation. In order to improve the learning process in the future, Information and Communication Technology (ICT)-based learning media must be evaluated gradually.

CONCLUSION

Based on the data presented above, it can be concluded that the use of ICT-based learning media as an alternative to learning in 21st century primary schools can be used as a resource for educators and students to help facilitate online or face-to-face learning. face-to-face learning process. in the classroom. Innovation in education to implement revisions that achieve educational goals positively and efficiently The application of information and communication technology (ICT)-based learning media can help students learn more efficiently and with greater enthusiasm. This review obtained sources of information and data from 53 respondents consisting of teachers and students in primary schools as shown in the diagram. In this study there is also a table with questions from the statements that the researcher tested to the respondents, and the graph explains the percentage of opinions regarding the usefulness of ICT-based learning media for 21st century primary school children. Information and communication technology (ICT)-based learning media can be used as an alternative in the learning system that facilitates the learning process between educators and students to achieve effective learning and educational goals, according to the findings of this study.

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