



## The Implication of ICT (Information and Communication Technology) based learning to increase students' learning motivation

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**Abstract.** This study aims to Determine: (1) differences in learning motivation of fifth grade students at Prajawinangun Wetan 2 Public Elementary School, Cirebon Regency before and after Obtaining ICT-based learning; (2) there is an increase of in the learning motivation of students in grade V at SD Negeri 2 Prajawinangun Wetan, Cirebon Regency. The design of this study was pre-experimental design (non-design) with one-group pretest-posttest design models. The Data analysis technique used is quantitative descriptive analysis. The research subjects were all students of grade V of SD Negeri 2 Prajawinangun Wetan, amounting to 27 students. Data collection using questionnaire guidelines, and observation guidelines with a 5 Likert scale model attitude. Based on the test results indicate a change in learning motivation of students before and after Obtaining ICT-based learning. This can be seen from the results of the N-Gain test analysis of 0.68 with the medium category on the questionnaire sheet, and 0.68 with the medium category on the observation sheet. The hypothesis that has been prepared has proven that the application of ICT-based learning can improve students' learning motivation.

**Keywords:** Motivation, ICT-based learning, application, students

**INTRODUCTION** – Education and teaching are inseparable elements in the life of the nation and state. The progress of a nation is determined by the quality of human resources. National educational purposes listed in the Act No.20 of 2003 regarding National Education System states that "Education is a conscious and deliberate effort to achieve learning and the learning process so that learners are actively developing the potential for him to have the spiritual power of religion, self-control, personality, intelligence, noble character, and skills needed him, society, nation and country ". Reached teaching purposes least one of which is evident from the results achieved or the learning achievement of learners. With high achievement, the students have a good indication knowledgeable.

One of the factors that affect learners' achievements is motivation. With the motivation of learners will study harder, more diligent, more resilient, persevering, and have full concentration in the learning process. Motivation to learn is the desire or urge to learn. Learners who have a high learning motivation will be to have passion and enthusiasm for learning as well as having a lot of energy in doing learning activities.

Based on the results of observations by researchers in the field, there are still many students who experience learning difficulties, it can be seen from the presence of students who are reluctant to learn and are not eager to receive lessons in class. Students are not yet active in working on the given exercise questions.



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In addition to being caused by a variety of factors from students, researchers found other factors that cause low motivation to learn in class V students, namely the learning done by teachers is still traditional and without the learning media. Quality learning reflects the existence of a learning environment that allows students to exercise control over their emotional needs, make choices that enable them to be physically, emotionally and mentally involved in the learning process.

Many factors affect the realization of quality learning processes as an effort to achieve educational goals one of which is the use or use of technology in the education or learning process.

This requires a teacher to be able to take advantage of the technology is good and true, especially to utilize these technologies in the field of education, especially at the time of the learning takes place. Based on the Survey of Schools: ICT in Education (2013) in Cirebon Sustainable Education Magazine Edition 2018 found that teachers who are confident enough in the use of ICT (Information, and Communication Technology) in school tend to bring a positive influence to the learning process of students overall. Director of Human Capital Management Telkom Herdy R. Harman reported Cirebon Lestari education magazine January 2018 edition says:

“Along with the rapid development of ICT, teachers as a key role in teaching and learning activities must have the ability to utilize ICT competitively to improve the quality of teaching and

learning in schools, so that teachers are expected to be able to help ensure the achievement of student learning competencies according to the targets of independent evaluation”.

This was confirmed by the statement of President Joko Widodo in his remarks on the National Teachers' Day on Saturday 2 December 2017 at the Patriot Stadium Candrabhaga, which was reported in the January 2018 edition of Cirebon Lestari education magazine saying that.

“Teachers have to understand the present era of technology, in order to have better knowledge of their students”.

The development of science and technology, especially ICT, has enriched learning resources and media in forms such as textbooks, power point slides, pictures / photographs, animations, film / video web pages, and others. On the other hand the presence of ICT as a new technology presents a challenge to teachers.

In this case, teacher professionalism not only includes the ability to teach students, but also manage information and the environment. So professional teachers must be able to choose, develop, and utilize various types of learning media by utilizing the sophistication of ICT.

Utilization of ICT in teaching and learning activities in the last few years has begun to develop, both at the elementary, junior high, high school and university levels, although the focus and form of variation varies according to the level of education of students. By utilizing ICT allows teachers



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to prepare their lessons and are also able to create a learning environment that is active, creative, and fun. In addition, the use of ICT is also able to increase motivation and facilitate learners in understanding the material presented. Therefore, it is not surprising that ICT-based learning is more effective and efficient.

Based on the above problems, the researcher is interested in conducting research with the title "Application of ICT-Based Learning (Information and Communication Technology) to Increase Student Learning Motivation".

## THEORITICAL REVIEW

### LEARNING MOTIVATION

Motivation according to Syamsudin (2017: 37) is a complex state (a complex state) and preparedness set in individuals (organisms) to move (to move, move, motive) towards certain goals, whether realized or not realized. He divided the two parts into motivation namely; (1) motivation arising from within the individual itself (intrinsic); (2) motivation that comes from the environment (extrinsic).

Meanwhile, learning according to Skinner in Muhibbin Syah (2014: 88) is a process of adaptation or behavior adjustment that takes place progressively.

This opinion was expressed in a summary that learning is a process of progressive behavior adaptation.

Based on the expert opinion above, it can be concluded that learning motivation is

an encouragement arising from within (internal) or from outside (external) of students in conducting learning activities to achieve learning objectives, in this case learning objectives, namely learning outcomes.

Learning motivation is experienced, experienced by students and is a mental strength in learning. Therefore, learning motivation needs to be turned on in order to achieve optimal teaching goals and be made an accompanying impact, which in turn leads to lifelong learning programs. However, there are several factors that affect students' learning motivation, as said by Dimiyati and Mudjiono (2006: 97-100) cited by Pujiastuti (2015: 30) are as follows.

1. The ideals or aspirations of students;
2. The condition of students;
3. Environmental conditions; and
4. Teachers' efforts in teaching students.

To overcome students' low motivation to learn, teachers should provide solutions to improve learning motivation. According to Catharina Tri Anni as quoted by Setyowati (2007: 18-19) is as follows.

1. Generating interest in learning;
2. Encourage curiosity;
3. Using a variety of interesting presentation methods;
4. Helping students in formulating learning goals.

Through motivation to learn, students will experience changes in behavior to move to do learning activities. Uno (2007) as



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quoted by Sunadi (2013: 6) classifies indicators of learning motivation as follows.

1. The desire to succeed;
2. There are encouragement and needs in learning;
3. The existence of future hopes and ideals;
4. An appreciation for interesting activities in learning; and
5. The existence of a conducive environment.

### ICT (Information and Communication Technology)

Information and communication technology (ICT) covers 2 aspects, namely information technology and communication technology. Information technology includes all matters relating to the process, use as a tool, manipulation, and management of information. Meanwhile, communication technology covers all matters relating to the use of tools to process and transfer from one device to another.

According Komariah (2016: 82) ICT is a combination of information and communication technologies in synergy with each other. ICT can also be regarded as multimedia (combined information and multimedia), which is really a paradigm of educational development.

UNESCO (2004) in Rahim (2011: 129) defines that ICT is the technology used to communicate and create, manage, and distribute information (computers, Internet, telephone, television, radio, and audiovisual equipment).

Based on the above understanding, it can be concluded that ICT is a combination of two technologies namely information technology and communication technology that input everything related to the process, use as a tool, manipulation, and management of information in other words ICT means multimedia.

The development and communication technology in recent years is growing very rapidly.

These developments have changed the paradigm of society in the search for and obtain information, which is not limited to the print media and electronic media information. The learning process is a communication process that is delivering a message from the teacher to the learner through a particular medium. The message that will be used is the lesson content or subject matter. According to Puspita (2015: 122) the best possible use of ICTs in education has many positive benefits in efforts to support education including the following.

1. Attract the attention of students;
2. Learning becomes fun;
3. Provide more knowledge to students;
4. Facilitate communication.

### SOCIAL SCIENCES

The term "Social Sciences", or abbreviated as IPS is the name of subjects at the elementary and secondary school level, known as social studies. The definition of social studies refers to the understanding put forward by Edgar Wesley in Sapriyah

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(2014: 8) saying that "The social studies are the social sciences simplified for pedagogical purposes". In line with Wesley, in 2993 the National Council for Social Studies (NCSS) in Supriyatna (2007: 4) issued a definition of IPS officially stated that:

*"Social studies is the integrated study of the social sciences and humanities to promote civic competence. Within the school program, social studies Provides coordinated, systematic study drawing upon such disciplines as anthropology, archeology, economics, geography, history, law, philosophy, political science, psychology, religion and sociology, as well as Appropriate content from the humanities, mathematics and natural sciences. The primary purpose of social studies is to help young people develop the ability to a make informed and reasoned decision for the public good as citizens of a culturally diverse, democratic society in an interdependent world".*

The idea of social studies in Indonesia has adopted and adapted a number of thought developments in social studies that occurred abroad as stated by Soematri in Sapriyah (2014: 11) that social studies education is a selection of social and humanities disciplines, as well as basic human activities that organized and presented scientifically and psychologically for educational purposes.

Based on the opinions of the experts above, it can be concluded that IPS is basically

aimed at preparing students as citizens who master the knowledge (Knowledge), skills (Skills), attitudes and values (Attitude and value) that can be used as the ability to solve personal problems or social problems and the ability to make decisions and participate in various social activities in order to become good citizens.

## RESEARCH METHODOLOGY

### RESEARCH DESIGN

The method used in this research is experimental research. Experimental research is a research method used to look for the effect of treatment on others under controlled conditions. The design chosen in this study was pre-experimental design (nondesign). This design is not yet a serious experiment because there are still external variables that contribute to the formation of the dependent variable (Sugiyono, 2016: 109).

Pre-selected designs (nondesigns) are selected as a One-Group Pretese- model

Posttest Design, where in this model there is an experimental group that is given a pretest to find out the initial state of the group, and then given a treatment and posttest.

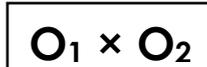


Figure 1. Research Design Experiment

O1 = Pretest Value

X = Treatment

O2 = Posttest Value



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## RESEARCH SUBJECTS

This research was conducted at SD Negeri 2 Prajawinangun Wetan, Kaliwedi Sub-district, Cirebon Regency, in class V students, amounting to 27 students, with details of 12 male students, and 15 female students.

## DATA COLLECTION TECHNIQUES

In this study using two methods of data collection, namely by using a questionnaire / questionnaire and observation instruments that are both use the linkert scale.

## DATA ANALYSIS

The data that has been collected is not entirely the final result in a study, so in this case the data that has been obtained is processed by means of analysis or interpretation.

The results of calculations using the formula above are then interpreted into the category of the gain gain criteria shown in table 1 below:

Table 1. Gain value criteria

Value g	KriTeria
$g > 0.7$	Height
$0.7 < g < 0.3$	Medium
$G < 0.3$	Low

## RESULTS AND DISCUSSION

To find out the increase in learning motivation of grade V students of SD Negeri 2 Prajawinangun Wetan Cirebon, the N-Gain calculation test was used. The

following is the N-Gain acquisition data on learning motivation of fifth grade students of SD Negeri 2 Prajawinangun Wetan Cirebon Regency on the questionnaire sheet listed in table 2 below.

Table 2. N-Gain Test Results on Questionnaire Sheet

No	Nama	Pretest	Posttest	Gain	100-pre	N-gain	Tot
1	US	85	97	12	15	0.80	Height
2	AR	81	96	15	19	0.79	Height
3	air	78	95	17	22	0.77	Height
4	ADA	66	82	16	34	0.47	Med
5	A A	76	93	17	24	0.71	Height
6	CN	74	93	19	26	0.73	Height
7	C	73	93	20	27	0.74	Height
8	E	72	95	23	28	0.82	Height
9	IH	61	92	31	39	0.79	Height



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10	KAT	74	94	20	26	0,77	Height
11	K	69	82	13	31	0,42	Med
12	LFA	73	93	20	27	0,74	Height
13	MSIS	96	100	4	4	1,00	Height
14	P	46	69	23	54	0,43	Med
15	QPJ	61	90	29	39	0,74	Height
16	RA	70	91	21	30	0,70	Height
17	Rak	80	94	14	20	0,70	Height
18	Ris	79	94	15	21	0,71	Height
19	R	76	88	12	24	0,50	Med
20	SKH	76	94	18	24	0,75	Height
21	Sh	77	94	17	23	0,74	Height
22	SD	61	73	12	39	0,31	Med
23	SW	91	100	9	9	1,00	Height
24	SP	60	90	30	40	0,75	Height
25	S	51	75	24	49	0,49	Med
26	WA	71	85	11	29	0,38	Med
27	YF	70	95	25	30	0,83	Height
<b>TOTAL</b>		<b>1947</b>	<b>2434</b>	<b>487</b>	<b>753</b>	<b>18,61</b>	-
<b>AVERAGE</b>		<b>72.00</b>	<b>90.15</b>	<b>18.04</b>	<b>27.89</b>	<b>0.69</b>	-
<b>SD</b>		<b>10.95</b>	<b>7.92</b>	-	-	-	-
<b>MAX</b>		<b>96</b>	<b>100</b>	-	-	<b>1.00</b>	-
<b>MIN</b>		<b>46</b>	<b>69</b>	-	-	<b>0.31</b>	-
<b>N-GAIN</b>						<b>0.68</b>	<b>MEDIUM</b>

Based on table 2 above, obtained pretest data from 27 students with a score of 1947 and has an average value of 72.00 with the highest value (max) of 96 and the lowest value (min) of 46 and also obtained a standard deviation of 10, 95. Furthermore, from the data obtained posttest overall total score of 2434 with an average value of 90.15 and has the highest value (max) of 100 while the lowest value (min) of 69, and also obtained a standard deviation of 7.92. From the data obtained gain value into the difference of the value of pretest and posttest number 487 with an average of 18.04. Further data showed that the value of a 100-pre intended to make it easier to know the value of N-Gain, of value

100-pre obtained a score of 753 with an average value of 27.89. From these data it obtained the calculation of N-Gain value of 18.61 with an average value of 0.69 which has the highest value (max) a 1.00 and the lowest value (min) number of 0.31. Gain of N- results can be explained that N-Gain value overall equal to 0.68 where the value is included in the medium criteria.

This can conclude that there is an increase between the pretest and posttest values obtained by class V students after being treated.



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Where as the N-Gain test results in the observation sheet are in table 3 below:

**Table 3** N-Gain Test Results on Observation Sheet

No	Name	Preteset	Posttest	Gain	40-Pre	N-Gain	Inf
1	AS	29	37	8	11	0,73	Height
2	AR	20	35	15	20	0,75	Height
3	Asep	25	37	12	15	0,80	Height
4	ADA	24	33	9	16	0,56	Med
5	AA	24	37	13	16	0,81	Height
6	CN	23	35	12	17	0,71	Height
7	C	30	37	7	10	0,70	Height
8	E	25	37	12	15	0,80	Height
9	IH	23	36	13	17	0,76	Height
10	KAT	29	37	8	11	0,73	Height
11	K	22	28	6	18	0,33	Med
12	LFA	24	37	13	16	0,81	Height
13	MSIS	35	39	4	5	0,80	Height
14	P	20	31	11	20	0,55	Med
15	QPJ	23	37	14	17	0,82	Height
16	RA	23	36	13	17	0,76	Height
17	Rak	22	37	15	18	0,83	Height
18	Ris	22	36	14	18	0,78	Height
19	R	26	34	8	14	0,57	Med
20	SKH	32	38	6	8	0,75	Height
21	Sh	27	37	10	13	0,77	Height
22	SD	27	31	4	13	0,31	Med
23	SW	25	36	11	15	0,73	Height
24	SP	23	36	13	17	0,76	Height
25	S	23	34	11	17	0,65	Med
26	WA	26	33	7	14	0,50	Med
27	YF	27	31	4	13	0,31	Med
<b>TOTAL</b>		<b>679</b>	<b>952</b>	<b>273</b>	<b>401</b>	<b>18,40</b>	
<b>AVERAGE</b>		<b>25,15</b>	<b>35,26</b>	<b>10,11</b>	<b>14,85</b>	<b>0,68</b>	
<b>SD</b>		<b>3,53</b>	<b>2,60</b>				
<b>MAX</b>		<b>35</b>	<b>39</b>			<b>0,83</b>	
<b>MIN</b>		<b>20</b>	<b>28</b>			<b>0,31</b>	

**N-GAIN**

**0,68**

**Medium**

Based on table 3 above, obtained pretest data from 27 students with a score of 679 and have an average value of 25.15 with the highest value (max) of 35 and the lowest value (min) of 20 and also obtained a standard deviation of 3, 53. Furthermore,

from the posttest data the overall total score was 952 with an average value of 35.26 and the highest value (max) of 39 while the lowest value (min) of 28, and also obtained a standard deviation of 2.60.



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From these data, the gain value is the difference between the pretest and posttest scores of 273 with an average of 10.11. Furthermore, the 100-pre value data is obtained to make it easier to find out the N-Gain value, from the value 100 pre scores obtained a score of 401 with an average value of 14.85.

From these data, the N-Gain calculation value of 18.40 with an average value of 0.68 has the highest value (max) of 0.83 and the lowest value (min) of 0.31. From the results of the N-Gain it can be explained that the overall N-Gain value is 0.68 where the value falls into the medium criteria.

This can conclude that there is an increase between the pretest and posttest values obtained by class V students after being treated on the observation sheet.

According to Anshori Sodiq (2017: 17) the best possible use of ICT in the field of education, has many positive benefits in efforts to support the development of education, including motivating students' ability to adapt and anticipate the development of ICT, so students can carry out and carry out activities of daily life independently and confidently. Through the application of ICT-based learning like this students can increase learning motivation in creating a pleasant learning atmosphere.

At the time of the application process of learning based on ICT (Information and Communication Technology) there are several obstacles including the means and

pre-facilities in this case the procurement of projectors / infocus, as well as human resource factors, teachers as operators must be able to operate the hardware and software in compiling learning which will be conveyed to students. Skilled teachers are certainly able to provide concrete things in thinking through the media used as a tool. This is in accordance with the opinion of Masykuri (2001: 21-22) as quoted by Widiastuti (2013: 102) regarding the purpose of using ICT-based learning media including the following:

1. To put concrete foundations in thinking;
2. To increase students' attention to a subject in a subject;
3. To lay the foundations that are important in the development of learning;
4. Provide a real thinking experience that can foster creativity;
5. Fostering ways of thinking regularly and continuously;
6. Help foster understanding and understanding of a concept that is not easily obtained in other ways and help develop efficiency and diversity in learning

Based on these learning media, students are not bored to learn because they are fun and can also stimulate students to be more passionate in learning.

According to Rachmahana (2008: 101) accordingly with the theory from Carl Rogers explains that the principles of humanistic learning which includes the desire to learn, meaningful learning, learning without threats, learning on their



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own initiative and learning for change. This was then simplified by Uno (2007) as quoted by Sunadi (2013: 6) as an indicator of learning motivation that was lifted from humanistic learning theory, namely the desire to succeed, the drive to learn, the hopes and ideals, appreciation in learning, interesting activities in learning to do and create things that are fun, and a conducive learning environment.

So as to create good learning motivation in order to produce the expected learning process and results, it is necessary influenced by several factors one of which is the learning process delivered by the teacher. To provide motivation to learn the teacher applies a learning process that can have a positive influence on motivation that has an impact on student learning processes and outcomes. With the application of ICT-based learning can affect the learning process of students in order to achieve better results according to what is done by students, so students better understand learning directly according to what teachers expect.

## CONCLUSION

Based on the results of the study, it can be concluded as follows.

1. There is a significant difference in the learning motivation of fifth grade students of SD Negeri 2 Prajawinangun Wetan Cirebon Regency before and after the implementation of ICT-based learning.

2. There is a significant increase in the learning motivation of fifth grade students of SD Negeri 2 Prajawinangun Wetan Cirebon Regency after receiving the application of ICT-based learning.

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