

The Effect Of Packet Tracer Simulator Media On Motivation And Learning Outcomes Of Basic Network Tkj Students Of Cokroaminoto Vocational School, Kotamobagu

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ABSTRACT

The aim of this study was to determine the effect of packet tracer simulator media on the motivation and learning outcomes of basic network students TKJ SMK Cokroaminoto Kotamobagu. Method used _ in study this is quasi experiment or experiment pseudo . Data collection techniques using documentation , questionnaires , and tests whereas technique data analysis using SPSS 26.0 assistance . Research results show that there is positive and significant influence in the use of Cisco media package Tracer to motivation and outcomes student learning on basic network learning at Cokroaminoto Vocational School Kotamobagu . this _ is known from Independent test results Sample T-Test. Obtained Sig.(2-tailed) value of 0.000 < 0.05 so could concluded that there is influence positive and significant in use of Cisco Packet Tracer media against motivation study students on learning network elementary school at Cokroaminoto Vocational School Kotamobagu . Whereas from Independent test results Sample T-Test. Obtained Sig.(2-tailed) value is 0.001 < 0.05 so could concluded that use of Cisco Packet Tracer capable media increase results study student class X TKJ at SMK Cokroaminoto Kotamobagu . Research results show class _ control with total respondent as many as 27 have a mean of 7.0 , 37 and in class experiment with total Respondents 27 had a mean of 7.900 . On the Independent Sample Test obtained Sig.(2-tailed) value is 0.000. Because the sig.(2-tailed) value is 0.000 < 0.05, there is a significant difference in learning motivation in the two classes. And on class control with total respondent as many as 27 have a mean of 8.037 and in class experiment with total respondent 27 has

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mean 87,22. On the Independent Sample Test obtained the value of Sig.(2-tailed) is 0.001. Because the value of sig.(2-tailed) $0.001 < 0.05$, there is a significant difference in learning outcomes in the two classes. It can be seen that the better the students' mastery of the packet tracer simulator media, the motivation and student learning outcomes are increasing.

Keywords : *Media Simulator, Motivation, Results Learn*

INTRODUCTION

Learning is an ongoing process activity learn and teach students in class. Implementation learning is teacher and student interaction in framework convey ingredients lesson to students and for reach purpose learning. (Hamdani, 2011: 17). because it, in the learning process there is a number of element among them is learning as a purposeful process for learn students inside class.

Based on results inside observation class for lesson network elementary, students feel difficulty with IP Address material, which is lesson similar count with math. In fact, IP Address material is one lesson which must be mastered student in eye lesson network basic. Thing this is one factor which make a number of student no Graduated when when test IP Address material, and indicate that process learning network base not yet finished hopefully, researcher also find that motivation students at SMK Cokroaminto Kotamobagu for study enough low, p the could seen when the teacher explains Theory lessons, students tend noisy, chatting with friend, consequently class Becomes noisy and less teacher explanation noticed.

Motivation can defined with all something which Becomes pusher that behavior demanded or pushing somebody for fulfil need. On point this is motivation Becomes power behavior driver Becomes behavior determinant. Motivation too could said as something construct theoretical about behavior includes regulation (regulation), direction (directive), and goals (incentives global) of behavior.

According to M. Uthman Najati motivation is strength mover which awaken activity on creature life and raises behavior as well direct it going to purpose certain. Motivation has three component principal, that is move, direct and sustain.

Results study is patterns actions, values, notions, attitudes, appreciation and skill. It means is that results study is change of various aspect ability which owned by participant educate.

In theory learn cognitive, someone only can is said learn when already understand the whole question insightful. According to Gagne, results learn is its formation concept.

Could concluded that results study is behavior change obtained somebody consequence learn. Behavior change is caused because he has reach mastery on a number ingredients which given in process study teach. Results which meant could form change in aspect cognitive, affective nor psychomotor.

One factor which influence motivation and results study is a learning medium. Learning media is all something which could used for convey message stimulate thoughts, feelings in framework make effective communication and interaction between teacher and student in reach purpose education which effective and efficient. Gerlach & Ely say that the media when understood in a manner line big is human, material, or incident which build condition which make student capable obtain knowledge, skills, or attitude.

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Could concluded that learning media could clarify presentation message and information so that could expedite and increase process and results learn .

Based on results inside observation class for lesson network elementary , students feel difficulty with IP Address material , which is lesson count which similar with math . In fact , IP Address material is one lesson which must be mastered student in eye lesson network basic . Thing this is one factor _ which make a number of student no Graduated when when test IP Address material , and indicate that process learning network base not yet finished hopefully , researcher also find that motivation students at SMK Cokroaminto Kotamobagu for study enough low , p the could seen when the teacher explains Theory lessons , students tend noisy , chatting with friend , consequently class Becomes noisy and less teacher explanation noticed .

METHOD

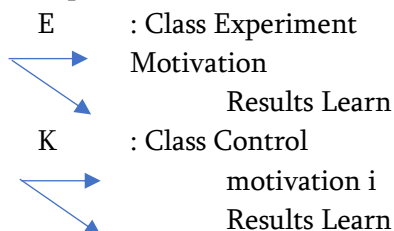
Method used _ in study this is *quasi experiment* or experiment pseudo . Method *quasi experiment* different with experiment actually . On method *quasi experiment* , have group control , however no could function fully for control variables outside influences _ implementation experiment .

The research design used is Nonequivalent Control Group Design, in design this almost same with pretest-posttest control group design only course on design this , group divided Becomes two group experiment nor group control compared without through randomization .

E	0 ₁	X	0 ₂
K	0 ₃		0 ₄

Figure 3.1 Nonequivalent Control Group Design

Description :



01 : *Pre test* on class experiment

03 : *Pre test* on class control

X : Treatment on class experiment with apply Cisco Packet application Tracer as a learning medium

02 : *Pro test* in class experiment

04 : *Pro test* on the control class

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Variable study this consists from Packet Tracer Learning Media as Variable X, Motivation Learn Student as Variable Y₁ and Learning Outcomes Student as Variable Y₂.

The population in this study was class X of the Department of Computer and Network Engineering (TKJ) Cokroaminoto Kotamobagu Vocational School , consisting of two classes totaling 54 (fifty four) students with details of class X TKJ A totaling 27 (twenty seven) students and class X TKJ B as many as 27 (twenty seven) students.

Data collection techniques in research are questionnaires and are supported by other data collection techniques, namely documentation and observation. Every technique own excess and deficiency , by because it has to be adjusted with need and problem research . Data collection by detail explained as following :

Deliver _ questionnaire to respondent and will answer written more easy if compared with scrape answer respondent with face to face” Arikunto (2010).

Method this is something method for get data with spread questionnaire which has arranged by researcher corresponding with purpose . Type question which used is type question with use alternatives answer based on scale likert . According to Arikunto (2010), documentation of the word origin he said document which it means goods written .

Method this used for Dig up existing data there . Documentation is done by taking initial data related to research data such as school documents and student achievement data. Besides that Documentation is also carried out with take related images _ with research data . According to Arikunto (2013), validity is something size which advance levels validity or validity something instruments . For test validity instrument (questionnaire) intended for know is instruments which used the could reveal variable data which researched in a manner right . Testing validity for learning media instruments package tracer (X), Learning Motivation (Y₁) and Results Learn (Y₂) with use help SPSS application 26. Testing this done with purpose for know how many big the influence of learning media package tracer (X), Learning Motivation (Y₁) and Results Learning (Y₂) testing this use help SPSS 26 application .

RESULTS AND DISCUSSION

Data on the learning motivation of control class students was obtained from the results of a questionnaire given to control class students by learning without using the Cisco application package Tracer .

Table 4.2 Learning Motivation in Control Class

Control Class X TKJ A		
No	Name	Score
1	Aditya Lasabuda	71
2	Ahmad Maulana Agoan	66
3	Ahmad Sharif A. _ Cadre	62
4	Alpha Geral Queen	80

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5	Asmiranda Mokodompit	65
6	Bayu Asiking	63
7	Celsi Mokoginta	80
8	Dilfa Potabuga	67
9	Febrianti Kasi Ayantu	72
10	Fabian NR Untol	68
11	Gevel G. – B. – Captain	71
12	Jhodi Saputra Kolopita	79
13	Rose S. – Mokodompit	72
14	Melda Paputungan	62
15	Meliansari Dugian	61
16	Nazril A. – Damopolii	68
17	Olivia Datungsolang	63
18	Wulan 's daughter Sundari	70
19	Rafi Alfaresi	72
20	Rafi Podomi	69
21	Rafik Umbola	80
22	Rika Paputungan	79
23	Rick Paputungan	67
24	Rila Podomi	65
25	Sanjay Simbala	67
26	Sasya Aprilia Simbala	78
27	Wirni Umbola	83
	Amount	1900
	Average	70.38

Data on student learning outcomes in the control class (*Pre-test* and *Post-test*) is taken from the student's score after answering 30 multiple choice questions. The following is the test score of student learning outcomes:

Table 4.3 Learning Outcomes of the Control Class (*Pre-test* and *post-test*)

Learning Outcomes of Control Class X TKJ A

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No	Name	Pre-test	Post-test
1	Aditya Lasabuda	25	80
2	Ahmad Maulana Agoan	30	80
3	Ahmad Sharif A. – Cadre	30	75
4	Alpha Geral Queen	30	80
5	Asmiranda Mokodompit	25	70
6	Bayu Asiking	30	85
7	Celsi Mokoginta	35	65
8	Dilfa Potabuga	25	75
9	Febrianti Kasi Ayantu	20	80
10	Fabian NR Untol	15	80
11	Gevel G. _ B. _ Captain	30	85
12	Jhodi Saputra Kolopita	30	75
13	Rose S. _ Mokodompit	25	85
14	Melda Paputungan	20	75
15	Meliansari Dugian	25	95
16	Nazril A. Damopolii	25	85
17	Olivia Datungsolang	15	75
18	Wulan 's daughter Sundari	35	95
19	Rafi Alfaresi	30	85
20	Rafi Podomi	30	70
21	Rafik Umbola	15	85
22	Rika Paputungan	25	90
23	Rick Paputungan	15	70
24	Rila Podomi	30	80
25	Sanjay Simbala	25	90
26	Sasya Aprilia Simbala	30	75
27	Wirni Umbola	20	85
	Amount	690	2170
	Average	25.56	80.37

Data on the learning motivation of the experimental class students were obtained from the results of the questionnaire given to the experimental class students after receiving the learning treatment using the Cisco application package Tracer .

Table 4.4 Experimental Class Learning Motivation

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Experimental Class X TKJ B		
No	Name	Score
1	sister Paputungan	68
2	Aprilia A. K. Kandouw	66
3	Aprilia Mamonto	86
4	Caca Kirana Laode	91
5	Cani Atmasari Help	84
6	Clara Mamonto	74
7	Dea Potabuga	79
8	Deronatan J . Mamengko	94
9	Desiree Darumeyat	78
10	Dziad D _ Datunsolang	87
11	Elphiana Bonde	71
12	Fauzy F _ Mokoagow	83
13	Gifary A _ Dungkalang	83
14	Haikal A Paputungan	72
15	I Made Rai Oktavianus	75
16	Jelly F. _ Paputungan	80
17	Kayla Khofifa With	80
18	Lena Dilanga	74
19	Nathan A. Mokoagow	82
20	Oka A. P. Potabuga	73
21	Princess Ningxi Mokodompit	69
22	Ridho. Bonde	79
23	Rifaldo Mamangkay	73
24	Salsa Nabila	85
25	Tissa Kaaba	82
26	Vivi Adinda Paputungan	79
27	Welly Wahyudi Akab	86
	Amount	2201
	Average	81.52

Experimental class student learning outcomes data (*Pre-test* and *Post-test*) is taken from the student's score after answering 30 multiple choice questions. The following is the test score of student learning outcomes:

Table 4.5 Experiment Class Learning Outcomes (*Pre-test* and *post-test*)

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Learning Outcomes of Experimental Class X TKJ B			
No	Name	Pre- test	Post- test
1	sister Paputungan	20	90
2	Aprilia A. K. Kandouw	20	85
3	Aprilia Mamonto	25	85
4	Caca Kirana Laode	30	95
5	Cani Atmasari Help	35	80
6	Clara Mamonto	25	75
7	Dea Potabuga	30	100
8	Deronatan J . Mamengko	35	90
9	Desiree Darumeyat	25	80
10	Dziad D – Datunsolang	15	90
11	Elphiana Bonde	15	85
12	Fauzi F. – Mokoagow	35	95
13	Gifary A. – Dungkalang	20	85
14	Haikal A Paputungan	35	80
15	I Made Rai Oktavianus	30	100
16	Jelly F. – Paputungan	20	95
17	Kayla Khofifa With	35	90
18	Lena Dilanga	30	75
19	Nathan A. Mokoagow	25	80
20	Oka A. P. – Potabuga	35	90
21	Princess Ningxi Mokodompit	25	85
22	Ridho. Bonde	30	100

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23	Rifaldo Mamangkay	30	90
24	Salsa Nabila	25	80
25	Tissa Kaaba	25	85
26	Vivi Adinda Paputungan	20	90
27	Welly Wahyudi Akab	30	80
	Amount	725	2355
	Average	26.85	87.23

**Table 4.6 Output normality test of control class learning motivation
One-Sample Kolmogorov-Smirnov Test**

		Motivat ion Learn Class Control
N		27
Normal Parameters ^{a,b}	Mea ns	70.37
	std. Deviation	6,547
Most Extreme Differences	abso lute	.142
	Posi tive	.142
	Neg ative	-.137
Test Statistics		.142
Asymp . Sig. (2-tailed)		.170 ^c

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Based on table 4.6 the output of the normality test of learning motivation in the control class using SPSS 26.0, it can be seen that the Asymp value . Sig . (2-tailed) of 0.170 so that > 0.05 . So it can be concluded that the control class learning motivation data is said to be normally distributed .

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Table 4.7 Output of normality test . Control class learning outcomes

One-Sample Kolmogorov-Smirnov Test		Hasil Belajar Kelas Kontrol
N		27
Normal Parameters ^{a,b}	Mean	80.37
	Std. Deviation	7.586
Most Extreme Differences	Absolute	.137
	Positive	.131
	Negative	-.137
Test Statistic		.137
Asymp. Sig. (2-tailed)		.200 ^{c,d}

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Based on table 4.7 the output of the normality test for control class learning outcomes using SPSS 26.0, it can be seen that the Asymp value . Sig . (2-tailed) of 0.200 so that > 0.05. So it can be concluded that the control class learning motivation data is said to be normally distributed .

Table 4.8 Output normality test of experimental class learning motivation

One-Sample Kolmogorov-Smirnov Test		Motivasi Belajar Kelas Eksperimen
N		27
Normal Parameters ^{a,b}	Mean	79.00
	Std. Deviation	7.033

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Most Extreme	Absolute	.095
Differences	Positive	.095
	Negative	-.093
Test Statistic		.095
Asymp. Sig. (2-tailed)		.200 ^{c,d}

- a. Test distribution is Normal.
- b. Calculated from data.
- c. Lilliefors Significance Correction.
- d. This is a lower bound of the true significance.

Based on table 4.8 the output of the normality test for experimental class learning outcomes using SPSS 26.0, it can be seen that the Asymp value . Sig . (2-tailed) of 0.200 so that > 0.05 . So it can be concluded that the experimental class learning outcomes data is said to be normally distributed .

**Table 4.9 Output of normality test . Experimental class learning outcomes
One-Sample Kolmogorov-Smirnov Test**

Hasil Belajar Kelas Eksperimen		
N		27
Normal Parameters ^{a,b}	Mean	87.22
	Std. Deviation	7.250
Most Extreme Differences	Absolute	.139
	Positive	.139
	Negative	-.131
Test Statistic		.139
Asymp. Sig. (2-tailed)		.195 ^c

- a. Test distribution is Normal.
- b. Calculated from data.
- c. Lilliefors Significance Correction.

Based on table 4.9 the output of the normality test for experimental class learning outcomes using SPSS 26.0, it can be seen that the Asymp value . Sig . (2-tailed) of 0.195 so that > 0.05 . So it can be concluded that the experimental class learning outcomes data is said to be normally distributed .

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**Table 4.10 Output of Learning Motivation Homogeneity Test
Test of Homogeneity of Variances**

			Levene Statistic	f1	f2	Sig.
Motivation Learn	Based on Means		.060		2	.808
	Based on Median		.093		2	.762
	Based on Median and with adjusted df		.093		1,962	.762
	Based on trimmed mean		.077		2	.782

Based on table 4.10 , the output of the homogeneity test of learning motivation using SPSS 26.0 is known that the value of Sig . 0.808 > 0.05, so that the learning motivation data is declared homogeneous.

**Tabel 4.11 Output Uji Homogenitas Hasil Belajar
Test of Homogeneity of Variances**

		Levene Statistic	f1	df 2	Sig.
Hasil Belajar	Based on Mean	.000		52	.990
	Based on Median	.000		52	1.000
	Based on Median and with adjusted df	.000		2.000	1.000
	Based on trimmed mean	.000		52	.987

Based on table 4.11 , the output of the homogeneity test of learning outcomes using SPSS 26.0 is known that the value of Sig . 0.990 > 0.05, so that the learning outcome data is declared homogeneous.

The t- test is used to determine the effect of using Cisco media package Tracer on student learning outcomes in basic network learning at Cokroaminoto Vocational School Kotamobagu . and the influence of using Cisco media package Tracer on student learning outcomes in basic network learning at Cokroaminoto

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Vocational School Kotamobagu. Test it conducted with SPSS 26.0 program assistance, namely the Independent Sample t-test.

The basis for making the decision is that if the value of Sig. (2-tailed) > 0.05, then H₀ is accepted and H₁ is rejected. If the value of Sig. (2-tailed) < 0.05, then H₀ is rejected and H₁ is accepted.

Following are the results of testing the hypothesis using SPSS 26.0

The hypothesis tested beeps as following :

H₁ : there is a positive and significant influence on the use of Cisco media package Tracer on student learning motivation in basic network learning at Cokroaminoto Vocational School Kotamobagu.

H₀ : there is no positive and significant influence on the use of Cisco media package Tracer on student learning motivation in basic network learning at Cokroaminoto Vocational School Kotamobagu.

Table 4.12 Outputs Test t- test Student's motivation to study
Group Statistics

	Class	N	Means	std. Deviation	std. Error Means
Motivation to Learn	Class Control	27	70.37	6,547	1,260
	Class Experiment	27	79.00	7,033	1,353

From table 4.12 the output of the t- test test of student motivation can be seen that in the control class with a total of 27 respondents it has a mean of 70.37 and in the experimental class with a number of 27 respondents it has a mean of 79.00. On Independent Samples The test obtained the value of Sig. (2-tailed) is 0.000. Because the sig. (2-tailed) value is 0.000 < 0.05, there is a significant difference in learning motivation in the two classes. So it can be concluded that there are differences in student learning motivation between those who are treated using Cisco media package Tracer with students who are not treated using Cisco media package Tracer. That means there is a positive and significant influence on the use of Cisco media package Tracer on student learning motivation in basic network learning at Cokroaminoto Vocational School Kotamobagu.

H₁ : there is a positive and significant influence on the use of Cisco media package Tracer on student learning outcomes in basic network learning at Cokroaminoto Vocational School Kotamobagu.

H₀ : there is no positive and significant influence on the use of Cisco media package Tracer on student learning outcomes in basic network learning at Cokroaminoto Vocational School Kotamobagu.

Table 4.1 3 Outputs Test t- test Student learning outcomes
Group Statistics

	Class	N	Means	std. Deviation	std. Error Means
Learning	Class Control	7	80.37	7,586	1,460
	Class Experiment	8	88.00	7,586	1,460

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on the use of Cisco media package Tracer on student learning outcomes in basic network learning at Cokroaminoto Vocational School Kotamobagu .

After the results of data analysis are complete, the next step is to describe the results of the research in tabular form which shows the influence of the use of Cisco media package Tracer on motivation and student learning outcomes in basic network learning at Cokroaminoto Vocational School Kotamobagu . The research results recapitulation table is as follows:

Table 4.14 Summary of Research Results

N o .	hyp othe sis Stud y	Resul ts Study	Criteri a Interp retatio n	Interp retati on	Conclusi on
1	H ₁ : there is a positive and signific ant influen ce on the use of Cisco media package Tracer on student learnin g motivati on in basic networ k learnin g at Cokroa minoto Vocatio nal School	<i>Sig</i> value . (2- <i>tailed</i>) is 0.000	<i>probab ility</i> < 0.05	H ₁ be accep ted	there is a positive and significa nt influence in the use of Cisco media package Tracer on student learning motivati on in basic network learning at Cokroam inoto Vocation al School Kotamob agu .

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	Kotamo bagu . H ₀ : there is no positive and signific ant influen ce on the use of Cisco media package Tracer on student learnin g motivati on in basic networ k learnin g at Cokroa minoto Vocatio nal School Kotamo bagu .				
2	H ₁ : there is a positive and significa nt influnc	<i>sig</i> value .(2- <i>tailed</i>) 0.001	<i>probab</i> <i>ility</i> < 0.05	H ₁ be accep ted	there is a positive and significa nt influence in the use of

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e on the use of Cisco media package Tracer on student learning outcom es in basic networ k learning at Cokroa minoto Vocatio nal School Kotamo bagu . H ₀ : no there is a positive and significan t influence in the use of Cisco media package Tracer on student learning outcomes in basic network learning at				Cisco media package Tracer on student learning outcome s in basic network learning at Cokroam inoto Vocation al School Kotamob agu .
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ON MOTIVATION AND LEARNING OUTCOMES OF BASIC NETWORK
TKJ STUDENTS OF COKROAMINOTO VOCATIONAL SCHOOL, KOTAMOBAGU**

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This study aims to determine whether there is influence in the use of Cisco media package Tracer on student learning motivation in basic network learning at Cokroaminoto Vocational School Kotamobagu and to find out whether there is influence in the use of Cisco media package Tracer on student learning outcomes in basic network learning at Cokroaminoto Vocational School Kotamobagu .

CONCLUSION

This study aims to determine whether there is influence in the use of Cisco media package Tracer on student learning motivation in basic network learning at Cokroaminoto Vocational School Kotamobagu and to find out whether there is influence in the use of Cisco media package Tracer on student learning outcomes in basic network learning at Cokroaminoto Vocational School Kotamobagu .

Based on the research results recapitulation table, in column number 1 concerning student motivation with the t test , Sig .(2-tailed) is 0.000. Sig .(2-tailed) value $0.000 < 0.05$ then H_0 is rejected and H_1 is accepted. Thus there is influence in the use of Cisco media package Tracer on student learning motivation in basic network learning at Cokroaminoto Vocational School Kotamobagu . Based on the research results recapitulation table, in column number 2 regarding student learning outcomes with the t test , Sig .(2-tailed) is 0.001. Sig .(2-tailed) value $0.001 < 0.05$ then H_0 is rejected and H_1 is accepted. Thus there is influence in the use of Cisco media package Tracer on student learning outcomes in basic network learning at Cokroaminoto Vocational School Kotamobagu .

Based on the description above, it can be concluded that there is influence in the use of Cisco media package Tracer on motivation and student learning outcomes in basic network learning at Cokroaminoto Vocational School Kotamobagu .

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**THE EFFECT OF PACKET TRACER SIMULATOR MEDIA
ON MOTIVATION AND LEARNING OUTCOMES OF BASIC NETWORK
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