

## Effect of Development of Professional Teacher, Competence, Facilities and Infrastructure of Education on the Performance of Teachers and Achievement Students Sma in Makassar

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**Abstract:** This study was conducted with the aim of testing and analyzing the influence of Teacher Professional Development, Competence, Facilities and Educational Infrastructure on Teacher Performance and Learning Achievement of High School Students. Population in this study were all teachers from 5 state and 5 private high schools in the education unit in the scope of the education and culture department of Makassar City, totalling 336 teachers with a sample of 183 teachers. The analytical model used in this research is quantitative descriptive and Structural Equation Model (SEM) using the AMOS program.

The results showed that teacher professional development had a positive and not significant effect on the performance of high school teachers in Makassar City. Competence has a positive and significant effect on the performance of high school teachers in Makassar City. Educational facilities and infrastructure have a positive and significant effect on the performance of high school teachers in Makassar City. Teacher professional development has a positive and not significant effect on the learning achievement of high school students in Makassar. Competence has a positive but not significant effect on the performance of high school teachers in Makassar. Educational facilities and infrastructure have a positive and significant effect on student learning achievement. Teacher performance has a positive and significant effect on the learning achievement of high school students in Makassar. Teacher professional development has a positive and significant effect on the learning achievement of high school students in Makassar through teacher performance. Competence has a positive and significant effect on student achievement in high school in Makassar through teacher performance. Educational facilities and infrastructure have a positive and significant effect on the learning achievement of high school students in Makassar through teacher performance

**Keywords:** Teacher Professional Development, Competencies, Educational Facilities and Infrastructure, Teacher Performance, and Student Learning Achievements

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### I. Introduction

Education is an important aspect to improve the quality of human resources to be able to compete in an increasingly advanced era and is a long-term investment and a key to the future of a country so as not to lag behind civilization. Education is a big investment for a nation. Development in the field of education must not be stopped as long as the educational objectives have not been fully achieved. National Education System Law No. 20 of 2003 article 11 paragraph 1 mandates the central government and regional governments to ensure the implementation of quality education for every citizen. To improve the quality of national education, the government in particular through the Ministry of Education and Culture continues to strive to make various changes and renewal of the education system.

The issue of education at this time has become one of the topics of discussion that has received enough attention from both the government and the community. Based on the results of a survey conducted by the OECD (Organization for Economic Co-operation and Development) in 2015 that the quality of Indonesia's education was ranked 69 out of 76 countries. The analysis used by the OECD is based on the results of mathematical and scientific tests using a broader global standard using the PISA test. The PISA test is an international study of the reading, math and science achievements of 15-year-old school students.

give an illustration that education in Indonesia is still far behind other countries and is still far from good words. The education of the Indonesian people today is very worrying about many cases that occur throughout the country. Education problems in Indonesia are getting more and more complex, more numerous and complex. One of the educational problems faced by the Indonesian people is the low quality of education at

every level and unit of education, although there may have been many efforts made to improve the quality of national education, for example, national and local curriculum, increasing teacher competency through the provision of books and learning tools, procurement and improvement of facilities and infrastructure and improving the quality of school management. However, various indicators of the quality of education have not shown significant improvement. Some schools, especially in cities show an encouraging improvement in the quality of education, but others are still concerning.

The quality of education does not only talk about results, but also the process of education itself. Education is said to be of good quality if the teaching and learning process goes well and smoothly. Likewise with the results obtained satisfactorily. The quality of education when viewed from the results, refers to the learning achievements obtained by students and schools for a certain period. Also, the ability of schools to produce the best graduates also shows the quality of education at the school. Because these graduates will contribute to advancing Indonesia. According to Winkel (1996) in (Darmadi, 2017: 300) Suggests that learning achievement is evidence of success that has been achieved by someone. Then learning achievement is the maximum result achieved by someone after carrying out learning efforts.

Average National Exam scores can describe student achievement, the following data on the average value of the National High School National Examination in Makassar City from 2015 to 2017.

**Table 1 Average National High School Examination in Makassar City in 2015-2017**

No .	Status of Schools	Average			Exam		
		2015	2016	2017	2015	2016	2017
1.	State Senior High School	73.02	64.81	47.81	Grade of Sciences Average of Social Sciences 61.72	Natural Sciences 56.61	44.51
2.	Private High Schools	66.95	54, 50	43.24	60.75	49.52	41.85

Source: <https://puspendik.kemdikbud.go.id/hasil-un/>. Accessed January 19 , 2018 at 10:30 WITA.

Based on data from the average value of the National High School National Examination in Makassar City from 2015 to 2017 has decreased every year both public and private high school status. The average value of the Natural Science national exam in public high schools in Makassar in 2015 was 73.02; in 2016 decreased by 64.81 and in 2017 decreased by 47.81. The average value of the Natural Sciences national exam in private high schools in Makassar in 2015 was 66.95; in 2016 decreased by 54.50 and in 2017 decreased by 43.24. The average value of the IPS national exams in-state high schools in Makassar also decreased, namely in 2015 amounted to 61.72; in 2016 decreased by 56.61 and in 2017 decreased by 44.51. The average value of the IPS national exam in private high schools in Makassar in 2015 was 60.75; in 2016 decreased by 49,502 and in 2017 decreased by 41.85.

Based on the data above, it is necessary to make efforts by the government to improve high school learning achievement in Makassar City. The success of education is very much determined by the readiness of the teacher in preparing his students through learning activities. However, the strategic position of teachers to improve the quality of education is strongly influenced by the professional abilities of teachers and their performance. The teacher is the spearhead of education because it directly seeks to influence, foster and develop students. Teachers are required to have the basic skills needed as educators, mentors and instructors which are reflected in teacher competence. The teacher is a component that has a strategic role in teaching and learning activities. Teachers are the key in every effort to improve the quality, education and efficiency of education. In the hands of teachers, the quality of education can be pursued in a better direction, it requires teachers to be able to prepare their competencies optimally, because after all the teacher's competence reflects the performance of the teacher or the ability of teachers to teach in class so that the better the teacher's performance, the possibility of student achievement will be increased as well. Even according to Danim Sudarwan (2006: 168) "One of the characteristics of the education crisis in Indonesia is that teachers have not been able to show adequate performance". This shows that the performance of teachers has not been fully supported by the degree of mastery of adequate competence, therefore it is necessary to have comprehensive teacher professional development efforts. According to Nana Sudjana (2002: 17) which states that the teacher's performance can be seen from his competence in carrying out the tasks of the teacher namely 1) planning the teaching-learning process, 2) implementing and managing the teaching and learning process, 3) assessing the progress of the teaching and learning process and 4) mastering lesson material. Given the important role of teachers in the learning process, each teacher is required to have academic qualifications and competencies as learning agents. (Hairuddin, Gani, Sinring, & Arifin, 2017) The causes of performance decline due to several factors, such as motivation, competence, organizational commitment and job satisfaction according to the dynamics encountered. Likewise (Gani, Nur, Mallongi, & Rusjdin, 2018) Ideal competency if supported by quality orientation, problem-solving skills, planning skills, teamwork, and independent learning capacity. Every human

being has the potential, therefore the potential to be considered in improving the competence of human resources. It is then simplified that the translation of knowledge will be achieved through education. Each skill is determined by the level of skills occupied. Life's journey is basically an appreciation of the experiences faced by a person and future orientation is determined by the progress of work. (Mirfan, 2018) Competence is a combination of pedagogical knowledge, professional skills, personality values and social interaction that is reflected in one's ability, so that it appears to understand, master, practice and be able to interact in doing the work occupied. Competence means it can be defined as a person's ability to take advantage of all the ability to do work in accordance with the desired goals while (Mansyur, Kamase, Mallongi, & Chalid, 2017) individual competencies of human resources as assessed from knowledge work are understood according to the level of education you have, skills from the various education and training that you have participated in, work-life experience and mastery of the job.

Talking about teacher professionalism, certainly cannot be separated from the activities of teacher professional development itself. To anticipate the increasingly difficult challenges in the world of education, teacher professionalism must be developed. Broadly speaking, teacher professional development activities can be divided into three types, namely: 1) intensive development (intensive development), 2) cooperative development (cooperative development), and 3) self-directed development (Glatthorn, 1991 in Sudrajat, Ahmad 2014). Ideally, every teacher can involve themselves in all three types of teacher professional development activities. If a teacher does not try to get involved (involved) in all three types of professional development activities, then it is almost certain that he will be dropped professionally.

To find out the conditions of mastering the competence of a teacher, mapping of teacher competence must be done through teacher competency tests. Teacher Competency Test (UKG) is intended to determine the teacher mastery map on pedagogical and professional competence. The UKG results are used as a basis for consideration in providing teacher professional development and development programs and as a point for evaluating teacher performance. As for the ranking and results of the national average scores of teacher competency tests for each convention in Indonesia in 2015 can be seen in table three:

**Table 2 Ranking and National Average Teacher Competency Test Results for Each Province in Indonesia in 2015**

Ranking	Province	Value	Rank	Provincial	Value
1	DI Yogyakarta	67.02	18	South Sulawesi	52.55
2	Central Java	63.5	19	North Sumatra	52.45
3	DKI Jakarta	62.58	20	West Nusa Tenggara	52.38
4	East Java	60.75	21	Gorontalo	52.31
5	Bali	60.12	22	Jambi	52.25
6	Bangka Belitung	59.07	23	South Sumatra	52.05
7	West Java	58.97	24	Central Kalimantan	51.78
8	West Sumatra	58.57	25	North Sulawesi	51.65
9	Riau Islands	58.17	26	Southeast Sulawesi	51.14
10	South Kalimantan	56.93	27	East Nusa Tenggara	50.54
11	Banten	55.9	28	West Sulawesi	50.15
12	East Kalimantan	55.74	29	Central Sulawesi	50.13
13	Riau	55.21	30	West Papua	49.47
14	Bengkulu	54.15	31	Papua	49.09
15	West Kalimantan	53.99	32	IN Nanggroe Aceh Darussalam	48.33
16	Lampung	53.58	33	Maluku	47.38
17	North Kalimantan	52.78	34	Maluku Utara	44.79

Source: Zaenuddin Idris. 2016. [www.academia.edu/24361946/uji\\_kompetensi\\_guru\\_ukg\\_dan\\_program\\_performan\\_ce\\_guru\\_pkg](http://www.academia.edu/24361946/uji_kompetensi_guru_ukg_dan_program_performan_ce_guru_pkg). [Online] accessed on 18 August 2016 At 15.43 WITA

The results of the Teacher Competency Test (UKG) held by the Ministry of Education and Culture in 2015 showed low results, generally still below the specified KKM (Minimum Completion Criteria) which is equal to 55. The low Teacher quality in Indonesia is evident from the results of the National Teacher Competency Test (UKG) conducted in 2015 for two fields namely pedagogic (teaching ability) and professional

(according to scientific disciplines). Based on the results of the teacher competency test, the national average score is only 53.02 from the maximum score of 100.

The low results of the teacher competency test are also a problem that has plagued South Sulawesi, especially Makassar City. The results of the Teacher Competency Test (UKG) place South Sulawesi at number 18 nationally with an average score of 52.55 out of 34 Provinces in Indonesia. Whereas the description of the quality of education in Makassar City is based on data from the Education Quality Assurance Institute (LPMP) in 2015 the education quality rating of Makassar City is only ranked 10th out of 24 municipal districts in South Sulawesi. Various problems that affect the low quality of education in Makassar City including the low quality of teachers, lack of adequate educational facilities and infrastructure and efforts to develop the teaching profession do not go as intended.

The determining factor for success in improving the quality of education is also determined by the completeness of educational facilities and infrastructure. The condition of public and private high school education infrastructure in Makassar City shows that there are still schools whose facilities and infrastructure are slightly damaged or even severely damaged. Seeing these conditions it can be concluded that educational facilities and targets in Makassar still need to be addressed. Educational facilities and infrastructure are things that must be met in the world of education. According to Daryanto (2011: 103) educational facilities and infrastructure is support for teaching and learning in schools. Without the infrastructure in the learning process, educational goals will not be achieved

. This research is the development of variables from previous studies with different research subjects, objects, and indicators. Linkages with previous research on the effect of teacher competence on teacher performance are Jannah Anita, et al (2012), Fitriana Nina and, Rahmatullah Mamat (2015), Sudriyah and Lie Liana (2015), Udiyono (2011), Zaenal Tatan Mutakin (2013), the results of the study indicate that there is a positive and significant influence of teacher competence on teacher performance. On the other hand, Raharjo Sri's (2014) research, and Utara Sutrisno Budi (2014) showed different results, namely, teacher competency did not affect teacher performance. Referring to the results of previous studies indicate that there are conflicting research results, the inconsistency of the results of previous studies encourage researchers to conduct research using teacher performance variables as intervening variables.

### **Competency**

According to the Indonesian General Dictionary, competence is the power to determine or decide on a p. The basic understanding of competence is ability or skill. (Purwadarminto WJS, 1999: 405).

According to Government Regulation No. 19 of 2005 concerning national education standards article 28, education is a learning agent that must have four types of competencies, namely pedagogical, personality, professional and social competencies. In that context, the teacher's competence can be regarded as a roundness of knowledge, skills and attitudes that are manifested in the form of a smart and responsible action device owned by a teacher to assume the position of teacher as a profession.

In-Law No. 14 of 2005 concerning teachers and lecturers. "Competence is a set of knowledge, skills and behaviours that must be possessed, lived and mastered by the teacher or lecturer in carrying out professional tasks".

Competence is the ability, skills, and skills possessed by a person regarding his duties, positions and profession (Triyanto, 2006: 62). According to Rasto in Majid Abdul (2005: 6) explained, the competencies possessed by each teacher would indicate the quality of teachers in teaching. The competence will be manifested in the form of mastery of knowledge and professionals in carrying out its function as a teacher.

From the above understanding, it can be concluded that teacher competence is the skills, abilities and skills possessed by the teacher to have noble knowledge, skills and personality in carrying out their functions as professional teachers. Social competence is an ability that must be possessed by teachers to communicate and interact effectively with students, fellow educators, education personnel, parents/guardians of students and surrounding communities. This competency has sub-competencies with essential indicators as follows: (Suyanto and Asep Jihad, 2013: 43)

### **Educational Infrastructure**

Facilities and facilities and infrastructure have broad meanings. Many experts explain the definition of facilities and infrastructure in their respective opinions. According to the big Indonesian dictionary, it is stated that the difference between facilities and infrastructure is that facilities are everything that is used as a tool in achieving goals or objectives, while infrastructure is a means of supporting a process (Purwadarminto, 1999: 80).

In the opinion of Bafadal Ibrahim (2003: 2) educational facilities and infrastructure are devices, marine and furniture that are directly used in the education process at school. While educational infrastructure is all basic equipment that indirectly supports the implementation of the educational process in schools.

According to Mulyasa (2011: 49) about educational facilities and infrastructure, facilities are tools and equipment that are directly used and support the educational process, especially teaching and learning processes such as buildings, classrooms, desks, chairs, and teaching tools and media. The infrastructure is a facility that indirectly supports the course of the process of education or teaching.

Understanding educational facilities and infrastructure was also put forward by Soetjipto and Rafli Kosasi (2009: 170) educational facilities and infrastructure are all movable or immovable objects, which are needed to support the implementation of the teaching-learning process, both directly and indirectly. Facilities and infrastructure is the entire process of procurement, utilization and supervision of facilities and infrastructure as well as equipment used to support education so that the stated educational objectives are achieved effectively and efficiently.

Based on some opinions expressed by experts regarding the understanding of facilities and inscriptions, it can be concluded that educational facilities and infrastructure are equipment and equipment that can support the implementation of the educational process in schools both directly and indirectly so that educational goals can be achieved effectively and efficiently

### **Educational Functions Educational**

facilities function directly (their presence is crucial) to the Teaching and Learning Process (PBM), such as learning tools, teaching aids, practical tools and educational media, while educational infrastructure functions indirectly (their presence is not very decisive). Included in educational infrastructure are land, yards, fences, plants, school buildings/buildings, road networks, water, electricity, telephones, and furniture / mobile (Gunawan, 1996: 115).

Teacher Performance The term performance comes from the words "Job Performance" or "Actual Performance" (work performance / actual achievements achieved by someone). Performance is the result of work performance or output both in quality and quantity achieved by the human resources in a period in carrying out their duties according to their work with the responsibilities given to them (Anwar Prabu Mangkunegara, 2012: 9).

Rivai Veithzal (2004: 16) put forward several notions of performance, namely:

- a. Performance is a set of results achieved and refers to the actions of achieving and carrying out something requested.
- b. Performance is one of the total collections of work available to workers.
- c. Performance is influenced by objectives
- d. Performance is a function of motivation and ability. To adjust a task or job, a person must have a certain degree of willingness and level of ability. A person's willingness and skills are not effective enough to carry out something without a clear understanding of what will be done and how to do it.
- e. Performance refers to the achievement of work goals or assigned tasks.
- f. Performance refers to the level of success in carrying out the task and the ability to achieve the goals set. The performance is declared good and successful if the desired goals can be achieved properly.
- g. Achievement of the goals set is one of the benchmarks of individual performance. There are three criteria in evaluating individual performance, namely: individual tasks, individual behaviour and individual characteristics.
- h. Performance as a quality and quantity and achievement of tasks performed by individuals, groups and organizations.

According to Hikman (1990) in (Jelantik Ketut, 2015: 92) Performance is the result of work and abilities that have been achieved by a worker in this case the teacher, in other words teacher performance is work or performance that has been successfully carried out by a teacher after carrying out his activities in school. Performance is always associated with a sign of the success of an organization and the people who are in it.

From some explanations about the notion of performance, it can be concluded that the teacher's performance is the result of work achieved in carrying out his duties as a teacher by directing all his potential and abilities by established work standards.

### **Learning Achievement Learning**

is a change in behaviour that is relatively permanent as a result of experience (Matlin, 1999; Myers, 1998) in (Akbar Reni, 2011: 168). In the context of schools, learning is a process of effort by students to obtain a new change in behaviour as a whole, as a result of students' own experiences in interaction with their environment. Learning achievement is the result of the educator's assessment of the learning process and student learning outcomes by instructional goals concerning the content of the lesson and the expected behaviour of students (Sri Lanawati, 1999).

According to Winkel (1996) (Darmadi, 2017: 300) Suggests that learning achievement is evidence of success that has been achieved by someone. Then learning achievement is the maximum result achieved by someone after carrying out learning efforts. Meanwhile, according to Gunarso Arif (1993: 77) stated that learning achievement is the maximum effort achieved by someone after carrying out learning efforts. Learning achievement in the field of education is the result of the measurement of students which includes cognitive, affective and psychomotor factors after participating in the learning process that is measured by using relevant test instruments or instruments. So learning achievement is the result of the measurement of the study of learning efforts expressed in the form of symbols, letters and sentences that tell the results that have been achieved by each child in a certain period.

Djamarah (1994: 23) defines learning achievement as the results obtained in the form of impressions that result in changes in the individual as a result of learning activities. If behaviour change is the goal to be achieved from learning activities, then behaviour change is one indicator used as a guideline for knowing individual progress in everything he gets in school. In other words, learning achievement is the abilities possessed by students as a result of learning or after receiving a learning experience, which can be categorized into three domains, namely cognitive, affective, and psychomotor.

Learning achievement can be measured through tests that are often known as learning achievement tests. According to Saefuddin Anwar (2005: 8-9) stated about learning achievement tests when viewed from the goal of revealing someone's success in learning. Testing is essentially exploring information that can be used as a basis for decision making. Learning achievement tests are tests arranged in a planned manner to reveal the subject's maximal performance in mastering the materials or material that has been taught. In formal education activities, learning achievement tests can take the form of daily tests, formative tests, summative tests, even cabanas and college entrance exams. From the opinions of the experts above, it can be concluded that learning achievement is a change in behaviour including three aspects (cognitive, affective and motoric) such as mastery, use and assessment of various knowledge and skills as a result or result of the learning process with the factors that influence it contained in the form of value given by the teacher.

## **II. Research Methods**

This research approach is to answer the problems that have been formulated, objectives to be achieved and at the same time test hypotheses that explain the symptoms caused by an object of research so that this research includes explanatory research, which is a study to confirm and test the relationship of variables (casual research). Casual research is research that is designed to identify the causes and effects of each relationship between variables in a clear research problem. The location of the study was carried out in state and senior high schools in Makassar in the scope of the education and culture department in Makassar. The number of state high schools in Makassar is 23 schools and the number of private schools in Makassar is 91 schools. Determination of the location of the study by using purposive sampling method that is the deliberate determination of the location of research. The selection of locations in this study the authors assume the school is quite representative and easier to obtain data and information to support research and is considered to represent in this study. Given that the population is quite large at 336, the determination of the number of samples using the Slovin formula with a confidence level of 5% to 183 the number of samples as for the analytical method used in this research is descriptive analysis techniques and verification.

### **A. validity testing Validity and Reliability Research Instruments**

#### **1. Test Validity Instruments**

Validity test is a measure that shows the extent to which the measurement instrument can measure what you want to measure because a good questionnaire can measure the framework of the research conducted. To conduct a validity test, the method used is to use the corrected item-total correlation. By using the number of respondents as much as 183 then the value of r table can be obtained through the table Pearson product-moment with df (degree of freedom) = n-2, so df = 183-2 = 181, then obtained r table = 0.1451. The question item is said to be valid if the corrected item-total correlation value is > r table value. Based on the description above, it can be presented the results of the validity test on the development of the teaching profession, competencies, educational facilities and infrastructure, teacher performance and student achievement using SPSS which can be seen in Table 3 below:

**Table 3** Test Results Validity

Variables	IndicatorIndicators	corrected item total correlation	r table (n = 183; α = 0.05)	Remarks
Teacher professional development (X1)	Indicator 1	0.878	0.1451	Valid
	Indicator 2	0.814		Valid
	Indicator 3	0.852		Valid
Competency (X2)	Indicator 1	0.791	0.1451	Valid
	Indicator 2	0.837		Valid
	Indicator 3	0.829		Valid
	Indicator 4	0.800		Valid
Education Facilities and infrastructure (X3)	Indicator 1	0.751	0.1451	Valid
	Indicator 2	0.832		Valid
	Indicator 3	0.813		Valid
	Indicator 4	0.672		Valid
teacher performance (Y)	Indicator 1	0.645	5	Valid
	Indicator 2	0.723		Valid
	Indicator 3	0.740		Valid
	Indicator 4			Valid
	Indicators			Valid
	0.7810.642 0.1451			
Student Achievement (Z)	Indicator 1	0.852	0, 1451	Valid
	Indicator 2	0.854		Valid
	Indicator 3	0.830		Valid
	Indicator 4	0.829		Valid

Source: Primary Data Process Results 2018

From table 3 the validity test results for the teacher professional development variables, competencies, facilities and education, teacher performance and student achievement have the value of corrected item-total correlation in each indicator greater than the value of or table. Thus the indicators or questionnaires used for each variable of teacher professional development, competencies, facilities and educational prerequisites, teacher performance and student achievement are declared valid to be used as a variable measurement tool.

**2. Instrument Reliability Testing**

The reliability test is used to determine whether the indicator or questionnaire used is reliable or reliable as a variable measurement tool. Reliability of an indicator or questionnaire can be seen from the value of Cronbach's alpha (α), i.e. if the value of Cronbach's alpha (α) > 0.60 then the indicator or questionnaire is reliable. Overall reliability test results can be seen in Table 4 below:

**Table 4** Reliability Test Results

Variable	Cronbach's alpha (α)	StandardReliability	Specification
Teacher Professional Development	0.805	0.60	Reliable
Competence	0.830	0.60	Reliable
Infrastructures	0.768	0.60	Reliable
Performanceteacher	0.742	0.60	Reliable
Student Achievement	0.861	0.60	Reliable

Source: Primary Data Processing 2018

Value cronbach's alpha (α) all the variables is greater than 0.60 so that it can be concluded indicator or the questionnaires used in the variables of teacher professional development, competence, educational facilities and infrastructure, teacher performance and student achievement are all declared to be reliable or trustworthy as a measurement tool.

**D. Confirmatory Factor Analysis**

**1. CFA Test Results (Confirmatory Factor Analysis) Exogenous Variables**

There are three exogenous variables used in this study, namely the development of the teaching profession, competencies and educational facilities and infrastructure. CFA test results for the development of the teaching profession, competencies and educational facilities and infrastructure as a whole can be seen in the appendix.

The construct test results of the teacher professional development variable, competence and educational facilities and infrastructure are evaluated based on Goodness of fit indices. Evaluation of the proposed model shows that the evaluation of the construct as a whole produces a critical value above which indicates that the model is by the data so that the subsequent model suitability test can be performed.

Figure 1 Exogenous Variable Structure Model

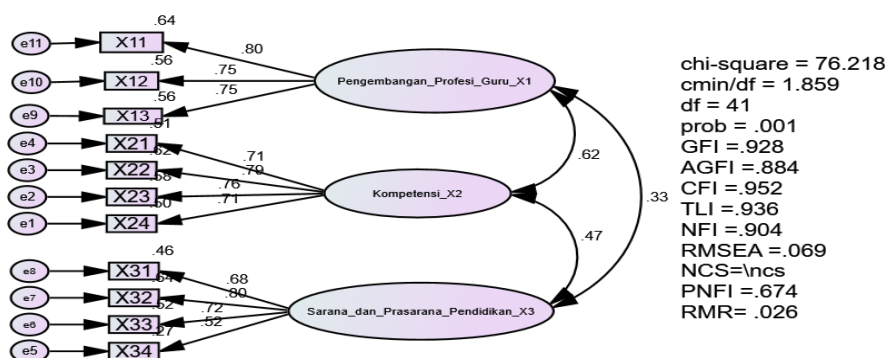


Table 5 Evaluation Criteria for Goodness of fit indices Exogenous Variables

No	The goodness of fit indices	Cut-off Value	Model Results	Remarks
1	Probability $\chi^2$ - Chi square	$p > 0.05$	0.001	Marginal
2	CMIN / DF	$\leq 2.00$	1, 859	Good
3	GFI	$\geq 0.90$	0.928	Good
4	AGFI	$\geq 0.90$	0.884	Marginal
5	TLI	$\geq 0.90$	0.936	Good
6	CFI	$\geq 0.90$	0.952	Good
7	RMSEA	$\leq 0.08$	0.069	Good
8	NFI	$\geq 0.90$	0.904	Good
9	RMR	$\leq 0.05$	0.026	Good

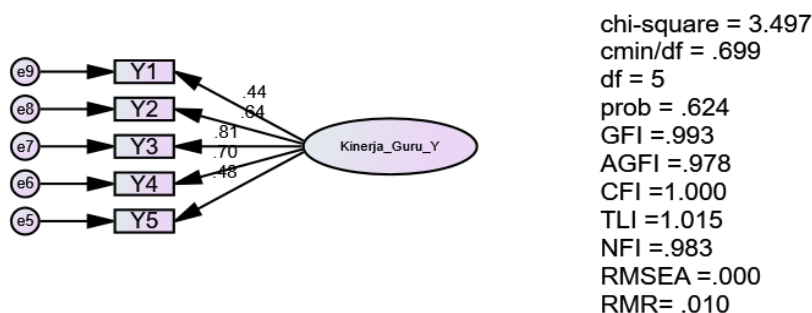
Source: Data after processing, 2018

Table 5 shows that the model criteria have shown the existence of a model fit or suitability between the data and the model. This is evidenced by the nine existing fix criteria, there are already seven that meet the criteria. Thus the CFA (model of confirmatory Factor Analysis) Exogenous Variables shows a good level of acceptance, it can be concluded that the model can be accepted.

## 2. CFA Test Results (Confirmatory Factor Analysis) Intervening Intervening

Variables variables used in this study is teacher performance. CFA test results for overall teacher performance can be seen in the appendix. Model structure of teacher performance variables can be seen in Figure 2. The construct test results of teacher performance variables are evaluated based on Goodness of fit indices. Evaluation of the proposed model shows that the evaluation of the construct as a whole produces a critical value above which indicates that the model is by the data so that the subsequent model suitability test can be performed.

Figure 2 Intervening Variable Structure Model





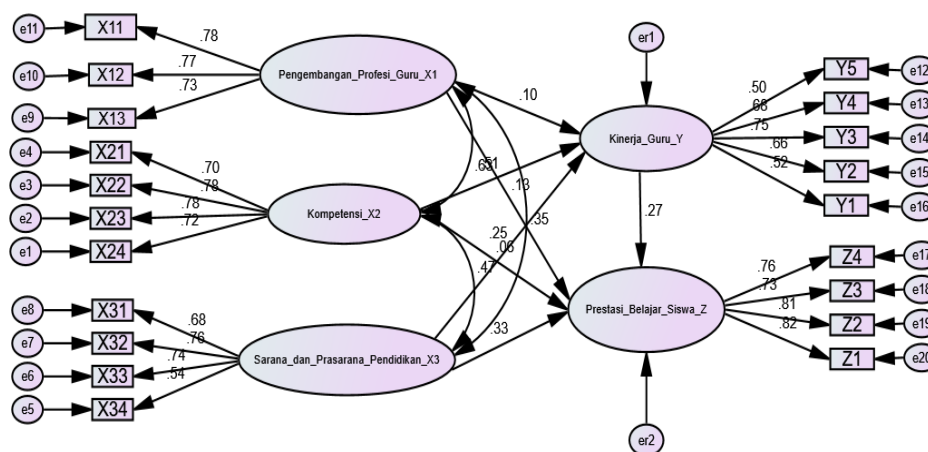
**Table 6** Evaluation Criteria for Goodness of fit indices Intervening Variables

No	Goodness of fit indices	Cut-off Value	Model Results	Remarks
1	Probability $\chi^2$ - Chi square	p> 0.05	0.624	Good
2	CMIN / DF	≤ 2.00	0.699	Good
3	GFI	≥ 0.90	0.993	Good
4	AGFI	≥ 0.90	0.978	Good
5	TLI	≥ 0.90	1.015	Good
6	CFI	≥ 0.90	1,000	Good
7	RMSEA	≤ 0.08	0,000	Good
8	NFI	≥ 0.90	0.983	Good
9	RMR	≤ 0.05	0.010	Good

Source: Data after processing, 2018

Table 6 shows that the model criteria have shown the existence of a model fit or agreement between the data and the model. This is evidenced from the nine existing fix criteria, all meet the criteria. Thus the CFA (modelConfirmatory Factor Analysis)of teacher performance variables shows a good level of acceptance, it can be concluded that the model can be accepted.

**Figure 3** SEM Test Results Early Phase



chi-square = 350.635  
 cmin/df = 2.191  
 df = 160  
 prob = .000  
 GFI = .843  
 AGFI = .793  
 CFI = .878  
 TLI = .855  
 NFI = .799  
 RMSEA = .081  
 RMR = .031

**Table 7** Evaluation Criteria Goodness of Fit Indices Overall Early Stage Model

No	The goodness of fit indices	Cut-off Value	Model Results	Remarks
1	Probability $\chi^2$ - Chi-square	p> 0.05	0,000	Poor
2	CMIN / DF	≤ 2.00	2,191	Poor
3	GFI	≥ 0.90	0,878	Not Good
4	AGFI	≥ 0.90	0,793	Not Good
5	TLI	≥ 0.90	0,855	Not Good
6	CFI	≥ 0.90	0,878	Not Good
7	RMSEA	≤ 0,08	0,081	Good
8	NFI	≥ 0.90	0,799	Poor
9	RMR	≤ 0.05	0.031	Good

Source: Data after processing, 2018

Based on table 7 above, it can be seen that the model is not yet fit to use or not fit. This is evidenced from the nine Goodness of Fit indices that there are only two that meet a condition. Based on the instructions for modification indices, modifications are made to improve the model so that it is valid in proving the hypothesis.

Modification of the model takes precedence only on the correlation between items and or errors and does not modify the path of influence. The results of SEM analysis in the final stages are further presented in Figure 4 below

Figure 4 Final Stage SEM Test Results

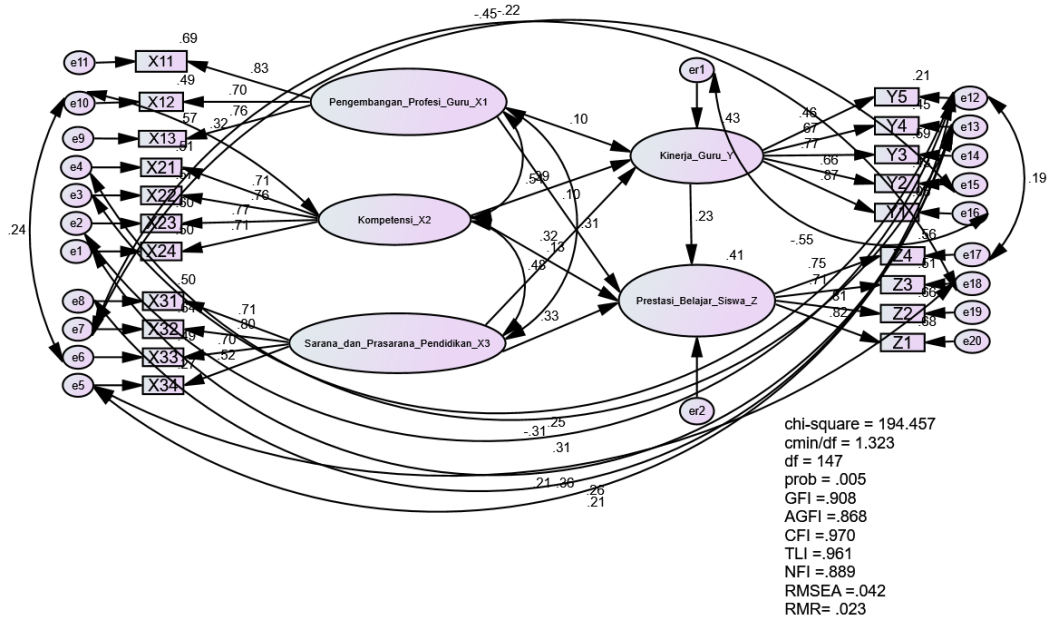


Table 8 Evaluation criteria Goodness of Fit Indices Overall Final Stage Model

No	The goodness of fit indices	Cut-off Value	Model Results	Remarks
1	Probability $\chi^2$ - Chi-square	p> 0.05	0.005	Poor Good
2	CMIN / DF	≤ 2,00	1,323	Good
3	GFI	≥ 0,90	0,908	Good
4	AGFI	≥ 0,90	0,868	Less Good
5	TLI	≥ 0,90	0,961	Good
6	CFI	≥ 0,90	0,970	Good
7	RMSEA	≤ 0,08	0,042	Good
8	NFI	≥ 0,90	0,889	Poor
9	RMR	≤ 0,05	0,023	Good

Source: Data after processing, 2018

The results of the evaluation of the final stage of the proposed SEM model show that the evaluation of the model to the overall construct of the nine criteria Goodness of Fit in table 8 there are six that meet good criteria, so it can be concluded that the overall model can be said to be in accordance with the data and can be analyzed further.

Discussion on the

1. Effect of Teacher Professional Development on Teacher Performance

Based on the results of the analysis of hypothesis testing and the total value of influence, direct influence and indirect influence between variables indicate that teacher professional development has no significant effect on the performance of high school teachers in Makassar. This shows that the development of the teaching profession through intensive development, cooperative development and mandatory development gives an influence on teacher performance but does not support in improving the performance of high school teachers in Makassar City. Hypothesis testing is not significant meaning that the sample data collected does not succeed in proving the link between teacher professional development and teacher performance.

2. Influence of Competence Teacher Performance

onBased on the results of the analysis of hypothesis testing and the total value of influence, direct influence and indirect influence between variables shows that competence has a positive and significant effect on the performance of high school teachers in Makassar, this shows that competency variables with pedagogical

competencies, personality competencies, social competence, and professional competence exert influence on teacher performance and support in improving the performance of high school teachers in Makassar City.

Teacher competence is the skills, abilities and skills possessed by teachers to have noble knowledge, skills and personalities in carrying out their functions as professional teachers. In the effort to improve the quality of national education, consideration must also be given to the competencies that teachers have. According to Veithzal Rivai Zainal, et al (2014: 314) competence is a key determining factor for someone in producing excellent performance. Competencies possessed by each teacher will show the quality of teachers in teaching, these competencies will be realized in the form of mastery of knowledge and professionals in carrying out its function as a teacher.

### **3. Effect of Educational Facilities and Infrastructure on Teacher Performance**

Based on the results of the analysis of hypothesis testing and the total value of influence, the direct effect and the indirect effect between variables shows that educational facilities and infrastructure have a positive and significant effect on the performance of high school teachers in Makassar City. This shows that educational facilities and infrastructure in the form of space, furniture, tools and educational media, as well as books or teaching materials, have an influence on teacher performance and support in improving the performance of high school teachers in Makassar City.

The findings of this study are in line with the results of research conducted by Jannah Anita, et al (2012) finding that infrastructure facilities significantly influence teacher performance in SMP Negeri 7 Bandung. Research conducted by Djatmiko Eko (2006) found that facilities and infrastructure affected the performance of Semarang City State Junior High School teachers.

### **4. The Effect of Teacher Professional Development Student Learning Achievement**

onBased on the results of the analysis of hypothesis testing and the total value of influence, the direct influence and indirect influence between variables shows that the teacher professional development has a positive and not significant effect on the learning achievements of high school students in Makassar. This shows that the development the teaching profession in the form of intensive development, cooperative development and mandatory development gives an influence on student achievement but does not support the improvement of high school students' learning achievements in Makassar City. Hypothesis testing is not significant meaning that the sample data collected does not succeed in proving the link between teacher professional development and student achievement.

Description of respondents' responses to the teacher professional development variable for indicators that have the lowest average score in this study, namely independent development. The independent development intended in this research is the teacher doing self-development through making scientific or written works in the field of education and making teaching aids. This means that the indicators of independent development need to be increased. Description of the responses of respondents on the variable student achievement for indicators that have the lowest average score is understanding. The understanding intended in this study is the ability of students to explain and define well the material that has been taught by the teacher verbally. This means that the understanding of high school students in Makassar still needs to be improved.

### **5. Effect of competence on student achievement**

Based on the results of the analysis of hypothesis testing and the total value of influence, the direct effect and the indirect effect between variables shows that competence has a significant effect on the performance of high school teachers in Makassar. This shows that competencies in the form of pedagogic competencies, personality competencies, social competencies, and professional competencies have an influence on the learning achievements of high school students but do not support the improvement of high school students' learning achievements in Makassar. Hypothesis testing is not significant means that the sample data collected does not succeed in proving the relationship between competence and student achievement.

Description of respondents' responses to the competency variable for Indicators that have the lowest average score, namely the pedagogical competence indicator. The pedagogical competence intended in this study is the ability of teachers to master the characteristics of students from physical, moral, social, cultural, emotional and intellectual aspects. This means that the indicators of teacher pedagogical competence examined from the physical, moral, social, cultural, emotional and intellectual aspects are still lacking and need to be improved.

Some of the teachers interviewed by the researchers conveyed problems regarding a lack of or inability to master the characteristics of students faced when implementing learning, including:

- a. Lack of ability to master learners' characteristics from the moral-emotional aspect. Some problems often arise when learning takes place, some students are daydreaming, some are also suddenly angry without cause, their emotions falter, sometimes there are also some who like to hit the table or their friends, even

though the attitude he did consciously and he knew that was wrong. After observing several students who possess these characteristics, he felt irritated, dissatisfied, frustrated, annoyed at the task of the teacher not being completed because the material described was not understood, there were problems in the family and problems in their friendship.

- b. Less mastering the characteristics of students from the socio-cultural aspects. Students come from family backgrounds with different environments. In the competency of the students' limbs, actualizing is different from the material, of course, this can disrupt the conducive learning atmosphere to be not conducive. Something common in general can be taboo if the learners differ in how to actualize it. Especially if the habit of using polite language is also still minimal, then things that arise when the learning process of educators feel less respected or respected by their students.
- c. Less mastering the characteristics of students from the physical aspect. Each student is born different and unique. No different students both in public and private schools they have advantages and disadvantages physically. This brings its problems for each student and educator. for example differences in height for both men and women, limited visibility or vision affects the location or layout of the seat, students experience hearing or vision problems if there is in the back position.
- d. Less mastering the characteristics of students from intellectual aspects. Students who are smart, smart, or have high intellectual tend to be silent, passive, but in the class there are also students who have a level of intelligence that is not so high or even low, they tend to be active, as a deception, a troublemaker, and do not complete their responsibilities namely completing homework. Sometimes students who are slow in accepting material or knowledge about the competencies that need to be achieved there are silent and passive but are reluctant to convey the lack of understanding of the material presented by the teacher so that in the evaluation phase of learning outcomes within the semester time conditions still appear incomplete in some students who have a low intellectual level.
- e. Lack of mastering the characteristics of students from the moral aspect. When the teacher explains the material, it is often felt to lack appreciation. They often look busy themselves, ignorant, and some even fall asleep. This may be the pattern or way of learning from the current generation who are already technology literate so they feel able to find information on the internet.

Competence is a basic aspect that must be possessed by every teacher to improve the quality of education, a number of competencies must be mastered by teachers, especially competent Pedagogic, Professional, Social, and Personality, because competence is "a set of knowledge, skills, and behaviours that must be possessed, internalized, and mastered by teachers and teachers in carrying out the duties of Professional, Social, and Personality. professionalism "(Law No. 14 of 2005). Competence is important and must be done for those who work as teachers because they become teachers. They have easy work, but special skill is required because not everyone can do it. So that before becoming teachers, the manager or manager of an educational institution is obliged to guarantee that every teacher who will teach has appropriate abilities based on education, training, the skills and experience of the teacher.

#### **6. The influence of educational facilities and infrastructure on student achievement**

Based on the results of the analysis of hypothesis testing and the total value of influence, direct influence and indirect effect between variables indicate that educational infrastructure and infrastructure have a positive and significant effect on student achievement in high school in Makassar, this value indicates that the facilities and educational infrastructure in the form of space, furniture, tools and educational media, as well as books or teaching materials, give influence to the learning achievements of high school students in Makassar City.

Based on the results of the frequency score and the percentage of respondents' responses regarding student achievement it appears that the welcome indicator has the highest total score. This indicator shows that most respondents gave good statements. This shows that most of the high school students in Makassar City participated/were actively involved well in teaching and learning activities.

#### **7. The influence of teacher performance on student achievement**

Based on the results of the analysis of hypothesis testing and the total value of influence, direct influence and indirect effect between variables shows that teacher performance has a positive and significant effect on student achievement in high school in Makassar, this shows that teacher performance through work quality indicators, work speed/determination, work initiative, workability, and communication have an influence on student achievement and support in improving the learning achievement of high school students in Makassar City.

Based on the results of the frequency score and the percentage of respondents' responses regarding teacher performance, indicators of initiative in working have the highest total scores. This indicator shows that

most respondents gave very good statements. This means that initiatives in work can be used as indicators in improving teacher performance.

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