



Correlation of Student Personal Skill with Learning Outcomes in Fundamental Chemistry Course

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Abstract: This study aims to determine students' level of personal skills and to see the relationship between personal skills and learning outcomes of basic chemistry students in the first semester of the biology study program, FKIP UNRAM. The sample of this study is a saturated sample consisting of 49 students of the Biology Education Study Program, FKIP UNRAM. This research design is descriptive quantitative research with a quantitative correlational design. Data collection techniques are carried out by giving research instruments such as questionnaires. The results showed (1) semester 1 students of biology education FKIP Unram had personal skills mostly in the moderate category (58%), 2. there was a positive and significant relationship between personal skills and basic chemistry learning outcomes for Chemistry Education FKIP UNRAM students. The value of the coefficient of determination is 0.407. It shows that the social skill variable has a contribution to chemistry learning achievement by 40,7% while 59,3% is determined by other variables that are not examined

Keywords: Personal skills, learning outcome

Abstrak: Penelitian ini bertujuan untuk mengetahui tingkat personal skill mahasiswa dan melihat hubungan personal skill dengan hasil belajar mahasiswa kimia dasar semester 1 program studi biologi FKIP UNRAM. Sampel penelitian ini adalah sampel jenuh yang terdiri dari 49 mahasiswa Program Studi Pendidikan Biologi FKIP UNRAM. Desain penelitian ini adalah penelitian kuantitatif deskriptif dengan desain kuantitatif korelasional. Teknik pengumpulan data dilakukan dengan memberikan instrumen penelitian berupa kuesioner. Hasil penelitian menunjukkan (1) mahasiswa semester 1 pendidikan biologi FKIP Unram memiliki personal skills sebagian besar berada pada kategori sedang (58%), 2. terdapat hubungan yang positif dan signifikan antara personal skills dengan hasil belajar kimia dasar mahasiswa Pendidikan Kimia FKIP UNRAM. Nilai koefisien determinasi adalah 0,407. Hal tersebut menunjukkan bahwa variabel keterampilan sosial mempunyai kontribusi terhadap prestasi belajar kimia sebesar 40,7% sedangkan 59,3% ditentukan oleh variabel lain yang tidak diteliti.

Kata kunci: Keterampilan pribadi, hasil belajar

Introduction

National Education System in Law No. 20 of 2003 intended to develop capabilities, form dignified

character and educate the nation. In addition, education aims to develop the potential of students to become human beings of faith, and fear of God Almighty, have a noble character, are healthy, knowledgeable, capable,

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creative, independent, and become citizens of a democratic and responsible state.

Success in the education system is not only influenced by cognitive abilities and opportunities (Demange et al., 2021; Kautz et al., 2014; Lavrijsen et al., 2021; Soto et al., 2022). Success in education is also influenced by individual abilities to manage behavior, maintain social relationships, and regulate emotions (Demange et al., 2021; Durlak et al., 2015; Soto et al., 2022). These abilities are generally known as social-emotional skills, part of life skills (Abrahams et al., 2019; Collie, 2020). The results of previous research indicate that life skills such as student, parent, and teacher social relations have powerful consequences for many important life outcomes for students, such as educational attainment and achievement, psychological and physical health, and success (Kautz et al., 2014; Smithers et al., 2018; OECD, 2015).

Education is not only for academic intelligence but can produce people who have good character and life skills. With good intelligence, character, and life skills, students can lead a good life too. One of the efforts to build character in students in chemistry learning is to equip students with life skills. Life skills are the ability to face and overcome problems in life (Depdiknas, 2009). Life skills (life skills) are skills possessed by individuals in dealing with problems and finding solutions (Masitoh, 2009).

Slamet, PH (2002) defines Life Skills Education as training the abilities, abilities, and skills needed by a person in life. Therefore, Life skills can develop skills, attitudes, and values that can be reflected in everyday life. According to Sairo (2009), Life skills can provide students with valuable skills they can use in a society that may have a different view of themselves.

Life skills are grouped into three types of life skills, namely personal, social, and academic skills. According to the Ministry of National Education, life skills consist of 4 skills, namely: (a) Personal skills are the ability to know oneself (awareness) and rational thinking skills (thinking skills), (b) social skills, (c) academic skills, and (d) vocational skills (Anwar, 2006). However, this study aims to analyze students' life skills after following fundamental chemistry lessons in the personal skills section. In addition, this study also aims to see the relationship between personal skills and learning outcomes.

Personal skills such as talent awareness, self-confidence, responsibility, problem-solving, positive habits, and an independent attitude are ingrained in students. This ability will be very useful because it will be needed in real life. Personal prowess is a child's ability to help him survive (Smith, 2018).

Students must be motivated to communicate with others, understand themselves and try to understand other people's points of view, learn to accept themselves and be responsible for themselves. In addition, personal skills are the provision to plunge into society in making the right decisions. A learner is considered capable of making decisions and has personal skills if he is already at the tertiary level.

Higher education is an educational institution where all learning processes are carried out. In addition, the campus also develops the personality and potential of students to grow and develop following national education goals. Changes in student behavior can change because of the learning process. The learning process in tertiary institutions will train students' interactions with their environment. The interactions in the campus environment will bring changes in knowledge, skills, and attitude values. Changes in students that are durable and applied in life become indicators of success in the learning process. Unfortunately, the theoretical learning process will make less meaningful changes.

Current conditions are that much process learning is theoretical; as a result, students need more provisions to deal with environmental problems. So students need to be more skilled at solving problems in everyday life (Muzakir, 2012). Chemistry is a science that students consider difficult because the learning process is theoretical. Chemistry, which is abstract and taught without being related to daily life, will not be meaningful for students. So that chemistry is less desirable than science. The theoretical learning process that is far from everyday life and not directed at life skills makes the material less interesting (Bahriah et al., 2016). Teaching staff should be able to convey learning experiences, developing cognitive, affective, and psychomotor abilities and life skills (*life skills*). One of the life skills that must be trained is personal *skills*.

According to Smith, individuals with good personal abilities will have independence, a strong will, self-confidence, and certain life goals (2003). Personal skills are in the category of attitudes such as self-confidence, self-awareness, initiative, and independence. In other words, personal skills are a person's ability to help himself to complete a given task. It requires self-awareness, initiative, and independence. Self-awareness is the ability to feel feelings when they arise (Elaine, 2007), such as being aware of having to complete a task. The initiative is part of personal skills, which is the ability to face a situation, make decisions and act properly. The initiative is also one of the stages of psychosocial development.

One indicator of personal skills is independence. A student's independence can be seen if he is able to manage himself, manage time, think independently, and solve problems (Parker, 2006). According to Schultz, independence is an individual attitude acquired cumulatively in its development and continues to learn to be independent in dealing with various environmental situations. Independence is the ability of students in the process of completing a given task. So that personal skills are the ability of children to help themselves in completing the tasks at hand, including self-awareness, initiative, and independence.

Students have different characters based on the results of observations during the lecture process. In completing assignments, students with good personal skills will be able to complete assignments properly and on time. This condition will affect the final assessment process. Personal prowess (*personal skills*) students will significantly influence learning outcomes (Cahyaningrum, 2013). If *Personal skills are good, students will affect the learning outcomes*. Success someone not only from academic results but personal skills also determine. Personal skills will affect academic achievement. Personal skills and competencies can determine academic success and predict individual development outcomes (Caprara et al., 2000). In addition, children's intellectual development is also influenced by the quality of interpersonal relationships with their teachers (Dilalla et al., 2004) and their peers, this condition is a prowess of individual personal and social.

Seeing such important *personal skills* In the independent learning process during the online learning process, it is necessary to identify fundamental chemistry students' personal skills during lecture activities to optimize learning outcomes. It is also necessary to look at the relationship between variables with learning outcomes subject fundamental chemistry.

Method

The population and sample in this study were fundamental chemistry students in the biology education study program class of 2019/2020. The sampling technique used was saturated sampling, with a total of 42.

This study has two pieces of data, namely data on *personal skills* obtained using a questionnaire. Study results data used midterm exam scores in fundamental chemistry courses. After that, the questionnaire data obtained was analyzed using a Likert scale. The Likert scale is a scale used to measure attitudes, opinions, and perceptions of social phenomena (Sugiyono, 2015). For quantitative analysis and to avoid doubtful answers

from respondents, the Likert scale used was modified to only four alternative answers so that the respondent only needs to put a mark (√) in the answer column that is already available. On a Likert scale, qualitative data is transferred into quantitative data.

Table 1. Score of Alternative Answers

Alternative Answer	Weight assessment	
	Positive	negative
Always	4	1
Often	3	2
Seldom	2	3
Never	1	4

The formula used is:

$$\text{personal skills} = A/B \times 100$$

Information:

A = total score obtained

B = maximum amount

Furthermore, the values obtained are categorized using the guidelines in Table 2.

Table 2. Percentage Criteria *Personal Skills*

Category limits	Category
$x < (\mu - 1.0\sigma)$	Low
$(\mu - 1.0\sigma) \leq x < (\mu + 1.0\sigma)$	Currently
$(\mu + 1.0\sigma) \leq x$	Height

Results *personal skill* which is obtained which fits into the latter category presented using the formula:

$$P = \frac{f}{N} \times 100 \% \text{ (Siregar, 2012)}$$

Information:

P = Percentage

f = frequency at the percentage being searched

N = number of frequencies

The relationship between *personal skills* and learning outcomes was analyzed using correlation statistics and linear regression. Influence *Personal skills* on learning outcomes expressed in the regression line equation $Y = a + b_1 X$, and then tested for the linearity of the regression line. After that, the correlation coefficient is calculated. Manual data analysis process and SPSS program.

Result and Discussion

Personal skills can be interpreted as special abilities related to student attitudes. Attitudes referred to in personal skills include self-awareness, trust self, initiative, and independence. Personal life skills are very important for students to have to support enthusiasm and be able to control emotions in difficult situations. In addition, personal skills can increase student confidence in participating in learning. With personal skills, students can solve problems they face

independently (Anwar, 2009). Students' personal skills can still be developed during the first semester of lectures. Communities or youth (students) are very important in order to create situations and conditions that are peaceful and peaceful and even orderly in carrying out a career in the world of work. For students who need better personal skills, it will be difficult to control their mental emotions in carrying out and competing with outsiders who have very good quality resources and very high discipline.

Campus life is expected to develop students' personal skills. It is because campus life has a different learning process from high school. The campus implements a credit system, so students who cannot follow the campus learning system will need to catch up to the number of credits. So it takes initiative, independence, and confidence to learn. Independent behavior in the student learning process will be able to analyze complex problems and work independently and in groups. Students' independent learning influenced their understanding of learning material (Yuliati & Saputra, 2020). The confident attitude possessed by students can be seen by being brave in expressing ideas and opinions individually or in groups. Self-confidence in the learning process on campus needs to be developed. Students who have self-confidence are more confident in doing things in a calm and balanced manner (Simorangkir et al., 2014). The initiative is an attitude that makes someone compelled to do something without prior orders. Frese & Doris (2001) stated that someone needs a personal initiative to jump into the workforce. Students with high initiative will have good abilities in completing learning assignments.

The analysis of personal skills and abilities possessed by biology education students in semester 1 showed a positive and significant relationship between personal *skill* and student achievement in fundamental chemistry learning through simple regression analysis. Simple regression results can be seen in Table 2.

Table 2. Simple Regression Analysis Results (X1-Y)

	R	r ²	bX1	a	t _{count}	t _{table}	Is.
Personal Skill	0,638	0,407	1,187	39,2	7,27	1,991	Significant

Based on table 2, the results of a simple regression analysis with one predictor variable can be seen as personal *skill* with chemistry learning achievement; it is known that the coefficient of determination r² of 0.407, which means that personal *skill* contributed to the learning achievement of chemistry by 40.7%. It shows that 59.3% of other factors

or variables besides personal skill contribute to chemistry learning achievement.

The coefficient of personal skill regression (X₁) is 1.187, and the constant number is 39.2. Based on these figures, the regression statement line can be stated as follows.

$$Y = 1,187X + 39,2$$

The equation above shows that the regression coefficient value is 1.187, which means that if personal skills increase by one unit, then chemistry learning achievement will increase by 1.187 units.

Students with high personal skills will be able to condition difficult situations, being personally responsible, disciplined, and not reckless in making decisions in any situation. In contrast, students with low personal skills will tend to lack self-confidence, affecting student achievement. Fatimah (2006) stated that self-confidence is an individual's positive attitude that enables him to develop a positive assessment of himself and the environment/situation he faces.

The results of the descriptive analysis of personal skills data show the percentage of students with high, medium, and low categories of personal skills. It can be depicted in Figure 1.

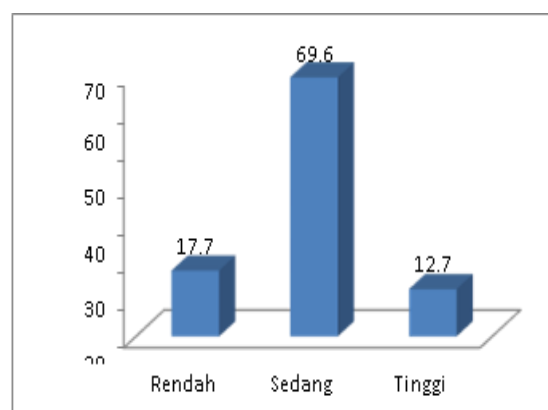


Figure 1. The level of personal skills of students

Based on the graph, it can be seen that personal *skills*. Most students are in the medium category. Furthermore, students' skills are in the low category, and a small number are in the high category. It indicates that it is still not an optimal personal *skill* for students; for example, many students lack confidence and lack activity when discussing with group mates. Confidence is internal control, a feeling of a source of strength within, awareness of abilities, and responsibility for decisions that have been made (Luxori, 2005). Self-confidence is an attitude or feeling of confidence in one's abilities so that the individual concerned is not too anxious in every action, can be freed from things liked and responsible for all actions

taken, and is warm and polite in interacting with others (Lauster, 2012).

Personal life skills determine the development of personality. The ability to solve problems is also influenced by personal skills so that students can solve existing problems (Anwar, 2009). Students with high personal life skills will be able to deal with difficult situations, be responsible, disciplined individuals, and dare to make decisions in all situations; students with low personal life skills tend to have low self-confidence and be reckless in making decisions that affect learning outcomes.

The relationship between personal skills and chemistry learning achievement can be seen from the results of a simple regression analysis between personal skills and chemistry learning achievement; a single regression equation is obtained, namely.

$$Y = 39,2 + 1,187X.$$

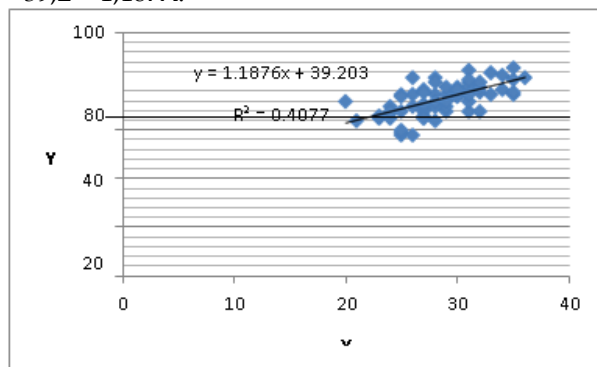


Figure 2. Graph of Personal Skills Correlation with Chemistry Learning Outcomes

This linear regression equation shows that when the personal skill value (X_1) is positive or the personal skill value increases, the learning achievement also increases. The higher the personal skills, the higher the learning achievement, and vice versa, so the relationship between personal skills and chemistry learning achievement is unidirectional.

The significance test in this study used the t-test. Based on the results of the t-test obtained, t_{count} 7.27 is greater than the value of the t_{table} of 1.991 at a significant level of 5%, so it can be concluded that there is a positive and significant relationship between personal skills and chemistry learning achievement. The study results are in accordance with research (Cahyaningrum et al., 2013; Wijaya, 2010) that personal life skills have a significant relationship with learning outcomes.

Personal life skills are a very important component of supporting enthusiasm, controlling emotions in difficult situations, and increasing confidence in participating in learning. Personal skills

include self-knowledge and rational thinking skills (Anwar, 2009). Self-knowledge is self-understanding as creatures of God Almighty, members of the community and citizens, and are aware of and grateful for their strengths and weaknesses, as well as making it an asset in improving themselves as individuals who benefit themselves and their environment. Personal skills possessed by a person can be seen from the attitude of self-confidence that is owned.

Confidence is a belief in facing all challenges well. Self-confidence will come from the individual's awareness that the individual is determined to do anything until the goal he wants is achieved (Barbara, 2003). Confidence is a positive attitude of individuals who can develop positive assessments of themselves and the environment (Fatimah, 2010).

Personal skills synonymous with high self-confidence cause individuals to feel competent, confident that they are capable, and believe they can because experience, actual potential, achievements, and realistic expectations of themselves support them. Self-confidence is the belief to do something for the subject as a personal characteristic in which there is confidence in one's abilities, optimism, objectivity, responsibility, rationality, and realism (Ghufron, 2014; Bimo (2013). Life skills are generally needed to overcome life's problems and make the right choices that impact their health, life now, and life in the future (Mugambi & Muthui, 2013).

Conclusion

The conclusions of this study are:

1. *Personal skills* Most biology students in the 2019/2020 class are in the moderate category (69.6%).
2. *Personal skills* affect learning outcomes, where increasing *personal skills* someone, it will have a positive effect on learning outcomes. Personal skills can help students be confident and independent in participating in the learning process. Students will be confident in their abilities and optimistic so that they can deal with situations as well as possible. So it is recommended that educators train and maintain students' skills, which helps improve the quality of learning.

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