

## Research Article

# The Influence of Learning Style on Students' Concentration

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**Abstract.**

Research between learning styles and learning concentration is rarely done. Learning styles are related to how students can be comfortable with a learning method, so learning styles can be a good indication of influencing learning concentration. This study aims to determine the influence of the three learning styles on learning concentration. The study uses a non-experimental quantitative method with a correlational design. The subjects of this study were 202 undergraduate students. The sampling technique used is convenience sampling. This research uses the Indonesian language learning style scale and the Indonesian language learning concentration scale. The hypothesis testing method used in this research is a multiple regression test. The results of this study found that the three learning styles did not have a significant effect on learning concentration.

**Keywords:** learning styles, learning concentration

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## 1. BACKGROUND

Burdens of the student include the number of courses that must be attended, assignments, exam loads, competition with other students, etc. can impact student psychology, such as academic stress [1]. Apart from academic stress, these academic burdens can also impact other psychological problems, namely reduced concentration in learning [2].

Research and surveys related to the concentration of students in Indonesia are still very limited. Several researchers have conducted this research, such as what has been done by [3]. The research was conducted at a university in Indonesia; it was found that out of 240 students, only 34 or 14.2% had a high learning concentration, while 166 students, or 69.2%, had a moderate learning concentration, and 40 students or 16.7% students had a low learning concentration [3]. Although this research cannot be generalized to the overall student population in Indonesia, this can indicate that some students still need better concentration in learning.

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Lack of concentration in learning has a negative impact. For example, low learning concentration is positively related to learning outcomes, in other words, the lower the learning concentration, the lower the learning outcomes, and on the contrary, the higher the learning concentration, the better the learning outcomes [4]; [5]. Therefore, concentration on learning is needed by students.

Learning concentration is one of the abilities students need to remain focused on receiving and carrying out academic activities from teachers/professors by ignoring distractions from the environment or personal factors [6]. This is also in line with other studies which reveal that concentration in learning is related to behaviors such as sitting quietly, not being easily distracted by various things, paying attention, not thinking about other things, and not getting bored during lectures or lessons [7].

Various things can affect the concentration of learning physiologically, psychologically, and environmentally. One example of physiological factors that influence is lack of sleep. Research by [2] conducted in Indonesia found that the lack of sleep intensity caused by being awake at night, studying, doing assignments, and walking parallels the lack of concentration levels in learning. While environmental and psychological factors such as in a study conducted by [8], found that a positive environment such as sound, lighting, temperature, etc., is a supporting situation to maintain concentration. This is due to avoiding things that interfere with concentration, such as noise. While psychological factors such as the existence of life problems faced by students so that they cannot focus or pay attention to academic activities.

In addition to these various things, learning style can possibly influence student learning concentration. This is indicated because learning styles are proven to increase learning achievement [9], where concentration also has a significant relationship with learning achievement [4]. Meanwhile, another study has found that there is a significant positive relationship between learning styles and learning motivation [10]. Learning motivation is also related to learning concentration, the higher the learning motivation, the higher the learning concentration [11]. This can be attributed or indicated by the fact that the more comfortable students are with their learning style, the better their engagement in educational activities. In addition, our assumption is, that the more comfortable students are with a learning style, the easier it will be for them to concentrate and receive or understand the course. However, there is still very limited scientific evidence regarding the direct influence of learning styles on learning concentration. This could be because other researchers use other educational psychology constructs to discuss learning concentration.

Learning style refers to the cognitive processes of learning and memory, but various experts have different views on learning styles. According to an expert, learning styles can consist of reflective or impulsive. In contrast, according to other experts, learning styles can consist of random or sequential, and other experts can also have other views as well [12]. Every student can have a learning style that they are comfortable with according to them or even unconsciously. However, learning styles are not something permanent, but learning styles can be learned, adapted, and changed by students or students intentionally in certain situations [13].

One of the learning styles that is arguably still being used and explored for its use are the three learning styles of Visual, Auditory, and Kinesthetic by [14]. In theory, individuals who tend towards a visual learning style can more easily understand material or lessons by looking with the help of pictures, shapes, visual media, or any display. Meanwhile, individuals with an auditory learning style tend to understand material or lessons more easily by listening, discussing, or liking podcasts, and so on. For individuals with a kinesthetic learning style, it is easier to understand material or lessons with the help of body movements, practices, etc., which are characterized by the difficulty of staying in place because these individuals need movement. The three learning styles are also being studied and tested by subsequent researchers to date, one of which is research by [15], who has developed a measuring tool for identifying student learning style tendencies.

Therefore, based on the explanation above, the purpose of this study was to find out whether there is an influence of the three learning styles on learning concentration. The benefit of this research is to deepen the knowledge of educational psychology and add scientific evidence related to learning styles and learning concentration.

## 2. RESEARCH METHODS

The method section contains the variables or concepts studied in the study, sampling methods, research subjects, instruments used, treatment designs or manipulations, data collection procedures, and data analysis techniques.

### 2.1. Variables or concepts studied

Two variables are used in this study: the independent and dependent variables. The independent variable is learning styles with three dimensions: Visual, Auditory, and Kinesthetic. While the dependent variable of this study is learning concentration.

## 2.2. Sampling Method

The sampling method in this study is convenience sampling. This method uses samples that are found directly without randomization.

## 2.3. Research subject

The subjects in this study were students from two batches, namely the second year and third year of the psychology study program, with an age range of 19 to 23 years. The number of samples in this study was 202 individuals.

TABLE 1: Distribution of sample data.

Data point		N	Frequency
Sex	Male	43	21.29%
	Female	159	78.71%
Age	19	40	19.80%
	20	111	54.95%
	21	45	22.28%
	22	3	1.48%
	23	3	1.48%
<b>Total</b>		<b>202</b>	<b>100%</b>

From the table above, it can be seen that the highest distribution of data is for women with a total of 159 individuals or 78.71%, while men with a total of 43 individuals or 21.29%. Meanwhile, if we look at age, the largest number of samples was 20 years old with a total of 111 individuals or 54.95%. In second place are individuals with 21 years or 22.28%. The third, fourth and fifth places are samples aged 19 years with 40 individuals or 19.80%, samples aged 22 years with 3 individuals or 1.48% and aged 23 years with 3 individuals or 1.45%.

## 2.4. Research Instruments

The measuring instruments used in this study are two scales. The scale for measuring learning styles uses the Indonesian language learning style scale compiled by Widayanti (2013), consisting of three dimensions: visual, auditory, and kinesthetic learning styles. Each dimension consists of 12 items, so the total items in this questionnaire are 36. The answer choices consist of three, namely “sangat sering” (very often), “sering” (often), and “jarang” (rarely). The reliability of this scale is Cronbach  $\alpha$  0.84. As for measuring learning concentration, we used the SLCQ-I scale in Bahasa Indonesian, compiled by

[6]. The number of items consisted of 19 items with seven answer choices from “tidak pernah sama sekali” (never at all) to “selalu” (always). The reliability of this scale is Cronbach  $\alpha$  0.923.

## 2.5. Research design

This study uses a non-experimental quantitative approach with a correlational design to find the effect of a variable on other variables.

## 2.6. Data Collection Procedures

This study used undergraduate students in experimental psychology and psychology scientific paper writing courses as samples. We ask for the participation of students to become the subject of this research without any coercion. Undergraduate students in experimental psychology and psychology scientific paper writing courses were used as samples in this study.

## 2.7. Data analysis technique

Multiple regression analysis is used in the analysis technique in this study.

# 3. RESULT

There are several analyzes that we do. First, we conducted a descriptive test with group norms on learning styles and learning concentration software tests. The research results are presented in a complete, clear, and consistent manner, with the research design and data analysis methods stated in the previous section.

TABLE 2: Learning style tendency.

Category	Frequency	Percentage
Visual	65	32.17%
Auditory	73	36.14%
Kinesthetic	29	14.35%
Visual & Auditory	13	6.43%
Visual & Kinesthetic	10	4.95%
Auditory & Kinesthetic	9	4.45%
Visual, Auditory & Kinesthetic	3	1.48%

Based on the table above, it was found that the majority of the samples had a tendency to auditory learning styles is 36.14%. Those with a tendency of visual learning styles is 32.17%, those with tendencies of kinesthetic learning styles is 14.35%, samples that had tendencies of visual and auditory learning styles of 6.43%, samples that had tendencies of visual and kinesthetic learning styles is 4.93%, samples that had tendencies of auditory and kinesthetic learning styles is 4.45%. Sample that has the same visual, auditory and kinesthetic learning style score is 1.48%.

TABLE 3: Description analysis on learning concentration.

Concentration category	Frequency	Percentage
High	30	14.85%
Medium	110	54.45%
Low	62	30.69%

Based on the table above, it can be seen that the sample that has a high learning concentration is only 14.85%, while those with a moderate learning concentration are 54.45%, and those with a low learning concentration are 30.69%.

Next, we conducted multiple regression tests to determine the effect of three-dimensional learning styles on learning concentration.

TABLE 4: Multiple Linear Regression Analysis Result Related to three learning style.

Variable	Unstrandized	Standard Error	Standardized	t	P
Visual	0.471	0.356	0.123	1.326	0.186
Auditory	-0.333	0.315	-0.096	-1.059	0.291
Kinestheti	-0.130	0.341	-0.038	-0.381	0.704

Based on multiple regression tests on each dimension of the learning style, it can be seen that the significance value (Sig) of the learning style is 0.186 ( $P > 0.05$ ), while the auditory learning style with a significance value (Sig) is 0.291 ( $P > 0.05$ ), and kinesthetic learning style with a significance value (Sig) 0.704 ( $P > 0.05$ ). Therefore, it can be said that the three dimensions of learning style do not significantly affect learning concentration.

TABLE 5: Model summary.

Model	R	R2	Adjusted-R2	Sum Squares	of df	Mean Square	F	P
Regression	0.110	0.012	-0.003	505.951	3	168.659	0.811	0.489
Residual				41197.816	198	208.070		
Total				41703.767	201			

While based on the simultaneous multiple regression test between the three learning styles on learning concentration, it can be seen that the significance value (Sig) is 0.489 ( $P > 0.05$ ), it can be concluded that there is no effect of the three learning styles on learning concentration.

## 4. DISCUSSION

This study found that no significant effect between the three learning styles on learning concentration. Learning style is related to the cognitive process of how individuals can receive and process information obtained using a comfortable style [16], which is then poured into academic activities such as an exam [17]. While learning concentration is related to the ability of students to stay focused on receiving and carrying out academic activities from teachers/lecturers by ignoring other disturbances from both internal and external factors [6]. In other words, even though students can use a learning style that is comfortable with, it does not mean that their learning concentration will also increase. Various things can cause this.

First, learning concentration is a very complex thing. Concentration in general, is a mental state that is closely related to attention. Individuals who can focus on one thing at a time and ignore irrelevant distractions can be said to have a good concentration level [18]. In the context of learning concentration, factors that can influence it are physical conditions such as mental fatigue or psychological conditions such as coursework. Research by [19] found that mental fatigue affects attention or concentration. Individuals who do 3 hours of working on a task will experience increased mental fatigue and their attention will decrease. In addition, a literature review conducted by [20] explores how long students concentrate on learning. From the literature review results, it was found that various experts had different opinions. Still, it can be said that the concentration or attention students can give a lesson can range from 8 seconds to 15 minutes. In contrast, students carry out academic activities from 1 to 8 hours daily. In addition, our study found that students with low concentration tended to be large, namely 30.69%, while those with moderate learning concentration were 54.45%. Those who had high learning concentration were only 14.85%. In other words, even though the higher their learning style does not mean the higher their learning concentration, their learning concentration can still decrease due to other factors such as mental fatigue.

In addition, previous research revealed that learning motivation can also affect learning concentration. Students who have an interest in a learning topic tend to increase their

motivation and curiosity related to the learning topic, which leads to increased involvement and focus as well as their concentration ([11]; [21]). Meanwhile, when viewed from learning styles, [10] found a significant positive relationship between learning styles and learning motivation [10]. However, one study revealed that learning styles do not affect learning styles and personal motivation [17]. In other words, there is still an inconsistency between learning styles and motivation. So, even though individuals are comfortable with their particular learning style, it is not necessarily that their learning motivation will be high, which will lead to their learning concentration not being high either. Therefore, future researchers are expected to add learning motivation to determine how learning styles influence learning concentration if moderated by learning motivation.

Learning styles have broad and varied concepts. Some researchers argue that learning styles consist of three, namely Auditory, Visual, and Kinesthetic [14,15], while other researchers argue that learning styles consist of four, namely Auditory, Visual, Kinesthetic, and Reading/Writing [22]. Other researchers also argue that no single concept can be accepted by various experts regarding learning styles [23]. So, we argue there is a possibility of different results with other learning style concepts. Therefore, we suggest future research using other learning style concepts.

In terms of measurement tools, this study uses learning style measurements with three options of choices, very often, often, and rarely. So, it is assumed that this is enough to limit the research sample to choose the answer. Therefore, the next researcher is suggested to try to use more options of choices. As for learning concentration, this study measures learning concentration by using a scale, where the weakness of using this scale is that subjects answer learning concentration based on their perceptions. While learning concentration can be measured by methods such as observation or test. Therefore, future researchers are expected to be able to measure learning concentration with other non-scale methods.

## 5. CONCLUSION

This study found that the three learning styles do not affect learning concentration. We use the three learning styles, Auditory, Visual, and Kinesthetic, by [14] and [15]. [13] argues learning styles can change according to the conditions of each individual. One individual may be comfortable with a learning style. Still, at one point, the individual may change his learning style to another because it adapts to the individual's conditions. In other words, the learning style itself is a dynamic thing. This is also in line with



learning concentration, learning concentration is also a dynamic thing that is influenced by various things, such as mental fatigue and learning motivation.

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## Ethics Policy

There is no conflict of interest in this research.

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