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INTERNATIONAL

RELATIONSHIP BETWEEN INTELLECTUAL INTELLIGENCE AND LEARNING MOTIVATION WITH LEARNING ACHIEVEMENT

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Abstract

The research was conducted with the aim of finding out which factors have the most significant relationship with increasing student learning achievement. The method used in this research is an explanatory research method with an approach method, namely a survey by giving questionnaires to respondents. The results of the research show that there is a relationship between intellectual intelligence and learning motivation on learning achievement using the validity test, reliability test, normality test, multicollinearity test, heteroscedasticity test, multiple linear regression test, coefficient of determination test, f table test, and t table test with levels of 95% confidence and SPSS version 25. The SPSS output related to the variables intellectual intelligence and learning motivation obtained a tolerance value of 0.363, greater than 0.05, and was supported by a VIF value of 2.754, smaller than 10. Based on the research results, there is a positive relationship between intellectual intelligence, learning motivation, and learning achievement in students.

INTRODUCTION

Education is an activity that is carried out intentionally, regularly, and planned with the intention of changing or developing good and desired behavior. The purpose of education for the Indonesian nation, as contained in the 1945 Constitution, is to educate the people. Education itself is inseparable from human life in relation to the learning process. It produces learning achievements. The learning process includes intellectual intelligence and learning motivation. From here, the research aims to examine whether it is related to learning achievement.

There are several experts who talk about "intellectual intelligence." According to Ardana in Bungawati, Taiyeb, and Hartati (2018), "intellectual intelligence is the human ability to think rationally, analyze, determine causal relationships, think abstractly, use language, visualize something, and understand something." It is believed that the intellectual intelligence of students with high IQs can also lead to high academic achievement (Khozim, Arief, & Wibowo, 2021; Kurnia, 2019; Nurhayati, 2022). This is because high-IQ students have the opportunity to facilitate learning. A high IQ also helps students be creative in their learning. Creativity is very important to allow students to think more deeply about how to solve a problem. However, many students are unable to achieve learning outcomes that match their intelligence. There are students who have high intellectual

intelligence but low achievement, and *vice versa*. Then how is the relationship between intellectual intelligence and student achievement?

The success of the teaching and learning process in achieving achievement is not only influenced by intellectual factors but also by other important non-intellectual factors. Motivation to learn is one of the 80% of success factors. Motivation is an activity to achieve a goal in learning science (Sari, Sunarno, & Sarwanto, 2018). The overall data driving the behavior of students who engage in learning activities is motivation to learn. Motivation is very important in learning activities; with motivation, it will encourage enthusiasm for learning, and conversely, a lack of motivation will weaken the enthusiasm for learning. Motivation is an absolute requirement in learning; a student who learns without motivation will not succeed optimally (Lomu & Widodo, 2018; Nurfallah & Pradipta, 2021).

Several previous researchers have found a positive and significant effect of motivation on learning achievement. Furthermore, Efriza, Caska, and Makhdalena (2020), Anwar et al. (2022) also find that there was a positive and significant influence between learning achievement and learning motivation. Both of these studies obtained positive results because motivation is a way for students to improve learning outcomes. This motivation gives students happiness, which creates enthusiasm for learning.

This learning motivation is critical for students to achieve learning success. Because if teachers and parents can provide good motivation, it will lead to better learning motivation in students. Learning motivation can also encourage enthusiasm for learning in students who are unable to study due to external or environmental influences. For example, if there is a student who feels threatened or ostracized by both other students and the teacher, he will not be well motivated to learn. As a result, parents or teachers must be able to re-energize students' interest in learning. Good motivation will

increase students' enjoyment of learning. In the absence of encouragement and motivation, the development of learning achievement will decrease. However, Herayanti et al. (2020) reveal that there was no significant effect between learning motivation and learning achievement. This makes it necessary to investigate further whether the influence of learning motivation on learning achievement is large.

Good or bad student learning achievement is influenced by these factors. The research purpose is to find out which of these three factors has the most significant relationship with learning achievement. This information is very important for Indonesians who want to improve their academic achievement. That way, we will know what teachers or parents should do to improve learning achievement. We want to examine more about the relationship between intellectual intelligence and learning motivation and its impact on learning achievement.

LITERATURE REVIEW
Intellectual Intelligence

Intellectual ability is the mental ability of each individual to adjust to a new environment and solve problems or overcome obstacles quickly and precisely. Intellectual abilities can also be explained as problem-solving abilities, learning abilities, and abstract thinking abilities. In the theory of multiple intelligences by Howard and Gardner, there are several aspects of intelligence, namely language skills, mathematical logic abilities, and spatial abilities, or intellectual intelligence (Syarifah, 2019; Oktaviana, 2022; Trihandini, 2005). Intellectual intelligence is the ability that is maximally carried out by someone in acting with a specific purpose, to think rationally, and to deal effectively with the surrounding environment (Ratnasari et al., 2022; Sari, Koto, & Sakti, 2019). Then there is another explanation regarding intellectual intelligence, namely the ability of an individual to understand, apply, and master dealing with problems (Pangestu, Muhyadi, & Efendi, 2019; Simanjuntak, Sihombing, & Siagian, 2022).

According to another opinion, intellectual intelligence, or intelligence quotient (IQ), is a basic intelligence that is interrelated between cognitive abilities (writing, reading, memorizing, calculating, and answering), learning with mathematical or logical abilities, and language. Intellectual intelligence comes from family and community life, from the time a child is in the mother's womb to growing into an adult (Handriani & Subhan, 2020). Then intellectual intelligence can be defined as mental intelligence related to rational thought processes.

Learning Motivation

Learning motivation is a force that contains self-confidence and encouragement in learning given by the teacher to his students (Prananda & Hadiyanto, 2019; Winata & Friantini, 2019). There are two drives in learning motivation, including encouragement that comes from within, or intrinsic, and encouragement that comes from outside, or extrinsic (Tampubolon, Sumarni, & Utomo, 2021). With motivation, learning outcomes become more optimal. If the motivation given is on target, then the lesson given will be successful (Uno, 2016). Thus, student achievement will improve if students receive motivational encouragement from their parents to succeed more. Since it is common for someone with high intelligence to fail to achieve due to a lack of parental motivation, human life is influenced by motivation, which is closely related to hope and willingness to learn (Wulansari & Manoy, 2020). That motivation grows within a person to achieve learning goals. In learning, motivation grows within a person and can be stimulated from outside. Motivation to learn is not something that is ready-made but is obtained and shaped by the environment (Permana & Kasriman, 2022).

Learning Achievement

Learning achievement is the result of learning activities achieved in the form of symbols, numbers, letters, and sentences that reflect the results achieved by students (Rosyid, Mustajab, & Abdullah, 2019; Firdianti, 2018).

The results obtained by a person from learning efforts can be associated with learning achievement because there is evidence of learning success or a person's ability to carry out learning activities in accordance with the quality he wants to achieve. An effort made by a person to obtain a change in behavior as a whole can be considered the result of his own experience in interacting with his environment (Sebastian, 2022; Andriyani & Samiyem, 2022). In improving learning achievement, teachers should focus on developing conceptual skills, maximizing schemes and transfer of skills in learning, increasing student motivation, instilling self-confidence in students, being able to challenge students (challenging), identifying each student's learning style, and developing good thinking skills (Qudsyi et al., 2022; Patriah, 2022).

RESEARCH METHODS

The research uses a qualitative research method, which will prove a significant relationship between the independent variables (independent variables), namely intellectual intelligence and learning motivation, and the dependent variable (dependent variable), namely learning achievement. This study also uses the survey method by giving questionnaires to respondents. The location of the research was around the Jakarta area. The unit of analysis for this research is the general public, who are still carrying out their education in the Jakarta area, and also workers. This study's population consisted of all students and workers, a total of 66 people, and the entire population was sampled using the saturated sampling technique. Data collection was carried out using a questionnaire method. The independent variables in this study are intellectual intelligence (X1) and learning motivation (X2), while the dependent variable is learning achievement (Y), with the research model as shown in Figure 1.

Figure 1 shows that there are three hypotheses that will be tested using simple linear regression, which intends to find the effect of the independent variable on the

dependent variable. The hypotheses to be tested are:

H$_1$: There is a significant relationship between intellectual intelligence and learning achievement.

H$_2$: There is a significant relationship between learning motivation and learning achievement.

H$_3$: There is a significant relationship between intellectual intelligence and learning motivation with regard to learning achievement.

Prior to testing the hypothesis, the regression analysis requirements were first tested, which included the normality test, multicollinearity test, and heteroscedasticity test.
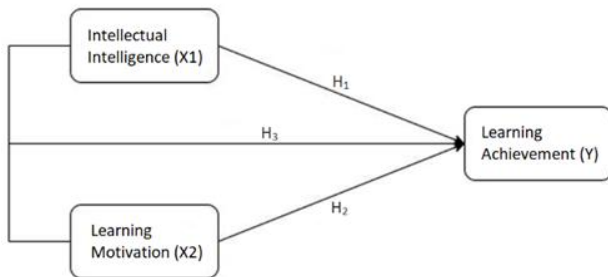

Figure 1. Research Model

The list of questions used in the questionnaire as a form of survey to respondents are:

➜ Intellectual Intelligence (Answered on a scale of 1 (Strongly disagree) - 5 (Strongly agree))
1. I try to convey my opinion well.
2. I am very curious about things that I do not know.
3. I always use logic to find facts and solve problems.
4. I have good communication skills.
5. Intellectual intelligence is influenced by the high and low scores of a person's IQ.
6. I always pay attention to the consequences that I will get from the decisions I make.

➜ Learning Motivation (Answered on a scale of 1 (Strongly disagree) - 5 (Strongly agree))
1. Do you have a strong motivation to study?
2. I always read the material given by the lecturer.

3. I try to learn and do assignments independently.
4. I use my spare time to study.
5. When the teaching and learning process is going on, I tend to prefer to be silent.
6. I try to answer the questions given by the lecturer.
7. I try to study harder when my test scores are low.

➜ Learning Achievement (Answered on a scale of 1 (Strongly disagree) - 5 (Strongly agree))
1. Do you always ask questions when the lecturer/teacher provides the opportunity to ask questions during teaching and learning activities?
2. During the teaching and learning process, did your lecturer rebuke you for not passing the exam?
3. I always record the material given by the lecturer.
4. I am an active student on campus both in class and in organizations.
5. I always study diligently to improve my performance.
6. Do you always complete the assignments given by the lecturer?
7. Did you complete the assignment given by the lecturer?

RESULTS AND DISCUSSIONS

The research tests the hypotheses using normality tests, correlation, simple linear regression, multicollinearity with the help of the SPSS version 25 program. The hypothesis is the relationship between intellectual intelligence and learning motivation with learning achievement.

Data Quality Test
Validity Test

The validity test results from Table 1 which are based on SPSS output show that the Intellectual Intelligence variable has a R Count value for the indicator X1.1. is 0.741, X1.2. is 0.763, X1.3. is 0.597, X1.4. is 0.619, X1.5. is 0.361, X1.6. is 0.691, the Learning Motivation variable has a R Count value for the indicator X2.1. is 0.712, X2.2. is 0.602, X2.3. is 0.713,

X2.4. is 0.483, X2.5. is 0.709, X2.6. is 0.659, X2.7. is 0.711, the Learning Achievement variable has a R Count value for the Y1.1. indicator is 0.511, Y1.2. is 0.654, Y1.3. is 0.673, Y1.4. is 0.611, Y1.5. is 0.604, Y1.6. is 0.669, Y1.7.

is 0.735 which is greater than the R Table value is 0.204, and the Sig. value is 0.000 which is smaller than the alpha value is 0.05, so it can be concluded that all question items are valid.

Table 1. *Validity Test Table*

Variable	Indicator	R Count	R Table	Significant	α	Result
Intellectual Intelligence	X1.1	0.741	0.204	0.000	0.05	valid
	X1.2	0.763	0.204	0.000	0.05	valid
	X1.3	0.597	0.204	0.000	0.05	valid
	X1.4	0.619	0.204	0.000	0.05	valid
	X1.5	0.361	0.204	0.000	0.05	valid
	X1.6	0.691	0.204	0.000	0.05	valid
Learning Motivation	X2.1	0.712	0.204	0.000	0.05	valid
	X2.2	0.602	0.204	0.000	0.05	valid
	X2.3	0.713	0.204	0.000	0.05	valid
	X2.4	0.483	0.204	0.000	0.05	valid
	X2.5	0.709	0.204	0.000	0.05	valid
	X2.6	0.659	0.204	0.000	0.05	valid
	X2.7	0.711	0.204	0.000	0.05	valid
Learning Achievement	Y1.1	0.511	0.204	0.000	0.05	valid
	Y1.2	0.654	0.204	0.000	0.05	valid
	Y1.3	0.673	0.204	0.000	0.05	valid
	Y1.4	0.611	0.204	0.000	0.05	valid
	Y1.5	0.604	0.204	0.000	0.05	valid
	Y1.6	0.669	0.204	0.000	0.05	valid
	Y1.7	0.735	0.204	0.000	0.05	valid

Reliability Test

The reliability test results from Table 2, which are based on SPSS output, show that the Intellectual Intelligence variable has a Cronbach's alpha value of 0.684, the Learning Motivation variable has a Cronbach's alpha value of 0.778, and the Learning Achievement variable has a Cronbach's alpha value of 0.741, where the three values This is greater than the standard value of 0.60, so it can be concluded that all variables are reliable.

Table 2. *Reliability Test Table*

Variable	Cronbach's Alpha	Standard	Result
Intellectual Intelligence	0.684	0.60	Reliable
Learning Motivation	0.778	0.60	Reliable
Learning Achievement	0.741	0.60	Reliable

Classic Assumption Test
Normality Test

Table 3. *Normality Test Table*

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Intellectual Intelligence	0.102	66	0.086	0.975	66	0.204
Learning Motivation	0.103	66	0.077	0.977	66	0.272
Learning Achievement	0.106	66	0.062	0.970	66	0.108

a. Lilliefors Significance Correction

The normality test results from Table 3, which are based on SPSS output, show that the Intellectual Intelligence variable has a Sig. value of 0.204, the Learning Motivation variable has a Sig. value of 0.272, and the Learning Achievement variable has a Sig. value of 0.108, where the three values are greater rather than the standard value of 0.50, so it can be concluded that all variables are normally distributed.

Multicollinearity Test

Table 4. *Coefficients Table for Multicollinearity Test*

	Collinearity Statistics	
Model	Tolerance	VIF
1 Intellectual Intelligence	0.363	2.754
Learning Motivation	0.363	2.754

a. Dependent Variable: Learning Achievement

The multicollinearity test results from Table 4, which are based on SPSS output, show that the Intellectual Intelligence and Learning Motivation variables have a tolerance value of 0.363, which is greater than 0.10, or a VIF value of 2.754, which is smaller than 10, so it can be concluded that these two variables do not show symptoms of multicollinearity or passing the multicollinearity test.

Heteroscedasticity Test

The results of the heteroscedasticity test from Table 5 based on SPSS output show that the Intellectual Intelligence variable has a Sig. value of 0.746 and the Learning Motivation variable has a Sig. value of 0.598, which is greater than the alpha value of 0.05, so it can be concluded that there are no symptoms of heteroscedasticity or that it passes the test of heteroscedasticity.

Table 5. *Coefficients Table for Heteroscedasticity Test*

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	2.173	1.325		1.640	0.106
	Intellectual Intelligence	0.031	0.094	0.068	0.325	0.746
	Learning Motivation	-0.040	0.075	-0.110	-0.530	0.598

a. Dependent Variable: ABS_RES

Based on the scatter plot graphic data in Figure 2, it can be seen that there is no pattern and the data is spread above 0 and below 0, so it can be concluded that heteroscedasticity does not occur.
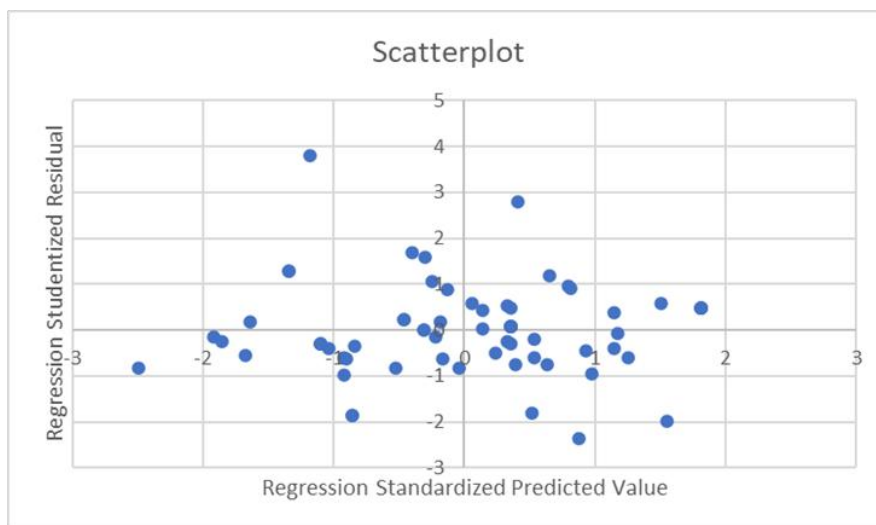

Figure 2. *Scatter Plot Chart*

Multiple Linear Regression Equation

Table 6. *Coefficients Table for Multiple Linear Regression Equation F*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.715	1.901		1.955	0.055
	Intellectual Intelligence	0.134	0.135	0.109	0.993	0.325
	Learning Motivation	0.744	0.108	0.761	6.913	0.000

a. Dependent Variable: Learning Achievement

$$Y = 3.715 + 0.134\ X1 + 0.744\ X2$$

Based on Table 6, in a multiple linear regression equation, the coefficient in front of each independent variable describes the extent to which changes that occur in the independent variable contribute to changes in the independent variable (Y). Therefore, the constant coefficient value is 3.715, which means that in the absence of the variables Intellectual Intelligence (X1), Learning Motivation (X2), and Learning Achievement (Y), they will increase by 3.715.

The coefficient value of the Intellectual Intelligence variable (X1) is 0.134; if the values of other variables are constant and the variable X1 increases by 1%, then the Learning Achievement variable (Y) will increase by 13.4%. On the other hand, if the values of other variables are constant and variable X1 decreases by 1%, then the Learning Achievement variable (Y) will experience a decrease of 13.4%.

The coefficient value of the Learning Motivation variable (X2) is 0.744. If the values of other variables are constant and the variable X1 increases by 1%, then the Learning Achievement variable (Y) will increase by 74.4%. On the other hand, if the values of other variables are constant and variable X2 decreases by 1%, then the Learning Achievement variable (Y) will experience a decrease of 74.4%.

Hypothesis Test Results
Coefficient of Determination Test Results (R^2)

From Table 7, the Adj R-Squared value is 0.723, or 72.3%. The coefficient of determination value shows that the Intellectual Intelligence (X1) and Learning Motivation (X2) variables are able to explain the Learning Achievement variable (Y) by 72.3%, while the remaining 28.7% is explained by other variables.

Table 7. *Model Summary Table for Hypothesis Test*

Model Summary[b]

Model	R	R-Squared	Adjusted R-Squared	Std. Error of the Estimate
1	0.850[a]	0.723	0.714	2.597

a. Predictors: (Constant), Learning Motivation, Intellectual Intelligence
b. Dependent Variable: Learning Achievement

F Test Results

From Table 8, it can be seen that the calculated F value of 82.237 is greater than the F table value of 3.143 and the Sig. value of 0.000 is smaller than 0.05, so it can be concluded that the variables of Intellectual Intelligence and Learning Motivation influence Learning Achievement.

Table 8. *ANOVA Table*

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1109.109	2	554.554	82.237	0.000[b]
	Residual	424.831	63	6.743		
	Total	1533.939	65			

a. Dependent Variable: Learning Achievement

b. Predictors: (Constant), Learning Motivation, Intellectual Intelligence

T Test Results

Table 9 shows that the partial influence of the independent variable on the dependent variable can be elaborated as:

1. T Count value of the Intellectual Intelligence variable (X1)
   The T Count value (X1) is 0.993, which is smaller than the T Table of 1.998. This is supported by the Sig. value of 0.325, which is greater than the alpha of 0.05. Therefore, there is no significant relationship between Intellectual Intelligence and Learning Achievement.

2. T Count value of the Learning Motivation variable (X2)
   The T Count value (X2) is 6.913, which is greater than the T table of 1.998. This is supported by the Sig. value of 0.000, which is smaller than the alpha of 0.05. Therefore, there is a significant relationship between Learning Motivation and Learning Achievement.

Table 9. *Coefficients Table*

Coefficientsª

Model		B	Std. Error	Beta	t	Sig.
		Unstandardized Coefficients		**Standardized Coefficients**		
1	(Constant)	3.715	1.901		1.955	0.055
	Intellectual Intelligence	0.134	0.135	0.109	0.993	0.325
	Learning Motivation	0.744	0.108	0.761	6.913	0.000

a. Dependent Variable: Learning Achievement

Implications of Research Results

One of the expected benefits of this research findings is that they will serve as input for scientific development and add insight. This research is expected to motivate students to discuss this topic in further research. The results show that the dimensions of the relationship between intellectual intelligence and learning motivation are positively related to learning achievement.

CONCLUSIONS

Results of the validity test show that all questions for the variables Intellectual Intelligence, Learning Motivation and Learning Achievement are valid. The reliability test shows that the Cronbach's alpha values of the Intellectual Intelligence, Learning Motivation and Learning Achievement variables are reliable or consistent. Based on the results of the normality test, the variables of Intellectual Intelligence, Learning Motivation, and Learning Achievement are normally distributed.

The multicollinearity test shows that the variables of Intellectual Intelligence and Learning Motivation do not exhibit multicollinearity among the three related variables. The results of the heteroscedasticity test reveal that there is no heteroscedasticity. The scatterplot does not have a pattern, so no heteroscedasticity is found in the data.

The multiple linear regression equation test shows that if there is an increase in the Intellectual Intelligence and Learning Motivation variables, the Learning Achievement variable will also experience an increase, which also applies *vice versa* if it decreases. Next, the coefficient of determination test that the Intellectual Intelligence and Learning Motivation variables can explain the Learning Achievement variable, and the rest can be explained by other variables.

The F test results reveal that the variables of Intellectual Intelligence and Learning Motivation have an influence on Learning Achievement. T test result of the Intellectual Intelligence variable shows there is no significant relationship between Intellectual Intelligence and Learning Achievement. Meanwhile, T test of the Learning Motivation variable that there is a significant relationship between Learning Motivation and Learning Achievement.

There is a positive relationship between intellectual intelligence and learning achievement. This means students with intellectual intelligence have more tendency to obtain higher achievement. In contrast, the lower the intellectual intelligence of students, the lower their achievement tends to be.

There is also a positive relationship between student learning motivation and learning achievement. This means that the higher the learning motivation of a student, the higher the learning achievement. In the opposite direction, the lower a student's learning motivation, the lower their learning achievement.

The research points out that intellectual intelligence and learning motivation are influenced by learning achievement. It is determined that the majority of students and workers agree that the three variables has a significant relationship. This was also agreed upon by the respondents we collected through a questionnaire that we distributed with several questions. The data we obtained mostly came from students, that is 75.8% of respondents, and some also came from workers, that is 24.2% of respondents. However, what is of concern about these three variables is whether they are related or not. The research finds out about this by paying attention to the questionnaire questions answered by respondents. From these questions, the research obtains the calculation results for the three variables, which are analyzed. It is expected that the research results improve the education system and help students achieve important potential in understanding intellectual intelligence and learning motivation to achieve better achievements.

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APPENDIX

http://eprints.ubhara.ac.id/772/10/10.%20Lampiran%20kuesioner.pdf

https://dspace.uii.ac.id/bitstream/handle/123456789/12760/ANGKET%20MOTIVASI%20BELAJAR.pdf?sequence=1

| Intellectual Intelligence | | | | | | | Learning Motivation | | | | | | | | Learning Achievement | | | | | | | |
X1.1	X1.2	x1.3	x1.4	x1.5	x1.6	Total x1	x2.1	x2.2	x2.3	x2.4	x2.5	x2.6	x2.7	Total x2	y1.1	y1.2	y1.3	y1.4	y1.5	y1.6	y1.7	Total Y1
4	4	3	4	4	4	23	4	4	4	3	4	5	3	27	2	4	4	4	5	5	4	28
3	4	4	3	3	3	20	4	5	2	3	4	4	4	26	1	4	5	4	5	5	4	28
5	3	3	5	3	3	22	3	5	3	4	3	5	2	25	1	5	3	5	5	5	4	28
2	2	3	4	5	1	17	2	4	2	4	1	3	1	17	2	1	1	4	4	4	2	18
4	4	5	5	4	4	26	5	4	5	5	5	5	5	34	5	4	5	5	5	5	5	34
5	5	5	5	5	5	30	5	5	5	5	5	5	5	35	5	5	5	5	5	5	5	35
4	5	4	5	4	4	26	5	5	5	4	5	5	3	32	2	5	5	5	5	5	5	32
3	4	5	2	5	5	24	5	5	4	5	4	5	5	33	1	5	5	5	5	5	4	30
5	5	5	5	4	5	29	2	5	5	4	4	4	4	28	1	2	4	4	4	5	4	24
5	5	5	5	1	5	26	1	5	5	1	5	5	4	26	1	3	4	5	5	5	5	28
4	4	4	5	2	4	23	3	4	4	3	5	5	4	28	1	4	3	5	5	5	4	27
5	3	3	3	3	3	20	3	5	3	5	3	3	3	25	1	3	3	3	5	5	5	25
4	4	4	4	5	4	25	4	4	4	4	4	5	3	28	2	4	2	4	5	5	4	26
4	3	5	3	4	2	21	1	2	3	4	2	5	3	20	5	4	5	4	5	3	5	31
2	3	4	5	4	3	21	4	5	4	4	5	4	5	31	4	5	5	4	5	5	4	32
4	3	5	5	4	3	24	3	3	4	4	4	5	5	28	5	5	4	3	4	4	3	28
2	3	2	5	4	4	20	5	3	3	3	4	3	4	25	3	4	3	4	3	4	4	25
4	4	4	4	4	4	24	4	4	4	4	4	4	4	28	4	4	4	4	4	4	4	28
3	3	2	5	5	5	23	5	2	4	3	5	1	4	24	2	3	5	5	5	4	5	29
5	5	5	5	5	5	30	5	5	5	5	5	5	5	35	5	5	5	5	5	5	5	35
3	4	3	4	3	4	21	3	4	3	4	3	4	3	24	4	3	4	3	4	3	4	25
2	3	2	3	2	3	15	2	3	2	3	2	3	2	17	3	2	3	2	3	2	3	18
3	4	3	4	3	4	21	3	4	3	4	3	4	3	24	4	3	4	3	4	3	4	25
5	4	5	4	5	4	27	5	4	5	4	5	4	5	32	4	5	4	5	4	5	4	31
4	4	4	4	5	4	25	5	4	5	4	4	5	4	31	5	4	4	4	4	4	4	29
4	4	5	4	5	5	27	4	3	5	5	4	4	4	29	4	3	4	3	5	3	5	27
4	4	4	4	4	4	24	3	5	3	3	2	4	5	25	2	3	3	5	3	5	5	26
4	4	4	3	5	4	24	4	5	3	5	4	4	3	28	5	4	4	4	4	4	4	29
4	4	4	3	4	4	23	4	4	4	4	4	3	4	27	3	4	3	5	4	4	4	27
4	4	3	4	4	4	23	4	4	2	3	4	5	3	25	2	3	4	4	4	4	4	25
5	5	4	4	4	4	26	3	5	3	5	4	4	3	27	2	4	3	4	4	4	5	26
3	4	4	3	3	3	20	3	3	3	3	3	3	3	21	3	3	3	3	3	3	3	21
5	5	5	5	3	3	26	3	3	3	5	3	4	3	24	4	4	5	4	4	4	4	29
5	5	5	5	5	5	30	5	5	5	5	5	5	5	35	5	5	5	5	5	5	5	35
4	4	4	4	4	4	24	4	4	4	4	4	4	4	28	4	4	4	4	4	4	4	28
5	3	5	3	5	3	24	5	3	5	3	5	3	5	29	3	5	3	5	3	5	3	27
1	2	3	4	5	1	16	2	3	4	5	1	2	3	20	4	5	1	2	3	4	5	24
4	4	4	5	5	5	27	5	4	4	4	4	5	4	30	5	4	5	4	5	4	5	32
4	5	3	5	4	3	24	5	4	3	5	4	3	5	29	4	3	5	4	3	5	4	28
3	4	5	4	3	4	23	5	4	3	4	5	4	3	28	4	5	4	3	4	5	4	29
4	3	5	4	3	5	24	4	3	5	4	3	5	4	28	3	5	4	3	5	4	3	27
3	3	3	3	3	3	18	3	3	3	3	3	3	3	21	3	3	3	3	3	3	3	21
3	3	3	4	4	4	21	5	4	5	4	5	5	4	32	4	4	4	4	4	4	4	28
4	4	5	2	3	1	19	2	4	3	5	3	5	2	24	1	3	2	2	5	5	4	22
4	2	4	2	4	2	18	4	2	4	2	4	2	4	22	2	4	2	4	2	4	2	20
5	4	3	2	1	5	20	4	3	2	1	5	4	3	22	2	1	5	4	3	2	1	18
4	3	2	2	3	4	18	4	3	2	2	3	4	4	22	3	2	2	3	4	4	3	21
1	2	3	4	5	1	16	2	3	4	5	1	2	3	20	4	5	1	2	3	4	5	24
5	4	3	2	1	5	20	4	3	2	1	5	4	3	22	2	1	5	4	3	2	1	18
3	2	1	4	5	3	18	2	1	4	5	3	2	1	18	3	2	1	4	5	3	2	20
2	4	1	4	5	3	19	4	5	3	4	2	4	4	26	5	3	4	2	1	5	4	24
4	4	3	4	4	4	23	3	5	4	5	3	5	1	26	1	2	3	4	5	5	4	24
5	5	5	5	5	4	29	4	4	4	4	4	5	5	30	5	4	3	3	3	3	3	24
3	3	3	3	3	3	18	3	3	3	3	3	3	3	21	3	3	3	3	3	3	3	21
2	2	3	2	2	3	14	2	2	2	2	2	2	2	14	2	2	2	2	2	2	2	14
4	4	4	4	4	4	24	3	3	3	3	3	3	3	21	3	3	3	3	3	3	3	21
4	5	4	4	5	4	26	5	4	4	5	5	4	5	32	5	5	5	4	3	4	4	30
4	4	4	2	2	2	20	2	2	5	5	5	5	5	29	5	5	5	5	5	5	5	35
4	1	3	4	5	5	22	5	5	5	5	5	5	5	35	3	5	2	5	5	4	4	28
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2	3	4	5	1	2	17	1	4	1	1	4	3	4	18	1	5	1	2	4	1	4	18
3	3	3	3	3	3	18	3	3	3	3	3	3	3	21	3	3	3	3	3	3	3	21
4	4	4	4	4	4	24	4	4	4	4	4	4	4	28	4	4	4	4	4	4	4	28
3	4	4	3	4	4	22	3	5	3	4	5	5	5	30	5	3	5	4	5	5	5	32
1	1	5	1	5	2	15	4	3	4	5	1	2	4	23	2	5	3	5	2	1	4	22
4	4	4	4	4	4	24	4	4	4	4	4	4	4	28	4	4	4	4	4	4	4	28

The following is the general questionnaire data

X1 = total intellectual intelligence data
X1.1 = intellectual intelligence data question 1
X1.2 = intellectual intelligence data question 2
X1.3 = intellectual intelligence data question 3
X1.4 = intellectual intelligence data question 4
X1.5 = intellectual intelligence data question 5
X1.6 = intellectual intelligence data question 6
X2 = total learning motivation data
X2.1 = data on motivation to learn question 1
X2.2 = data on motivation to learn question 2
X2.3 = data on motivation to learn question 3
X2.4 = data on motivation to learn question 4
X2.5 = data on motivation to learn question 5
X2.6 = data on motivation to learn question 6
X2.7 = data on motivation to learn question 7
Y = total learning achievement data
Y1.1 = data on learning achievement question 1
Y1.2 = data on learning achievement question 2
Y1.3 = data on learning achievement question 3
Y1.4 = data on learning achievement question 4
Y1.5 = data on learning achievement question 5
Y1.6 = data on learning achievement question 6
Y1.7 = data on learning achievement question 7
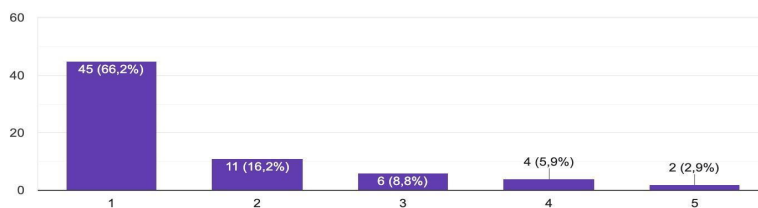
Age Chart

Age
1. 15 years - 20 years
2. 20 years - 30 years
3. 30 years - 40 years
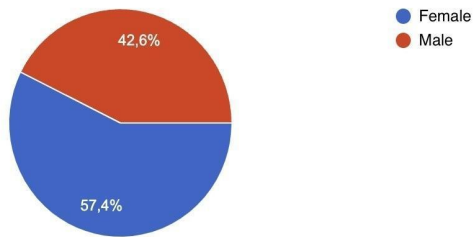4. 40 years - 45 years
5. More than 45 years
68 answer

Gender Chart

Gender

68 answers

- Female
- Male

42,6%

57,4%

Profession Chart

Profession

68 answers

- Student
- Worker

23,5%

76,5%