DIFFERENCES AND RELATIONSHIPS ON SELF-EFFICIENCY AND DISCIPLINE CHARACTER OF HIGH SCHOOL STUDENTS

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Abstract :
Currently, students' self-efficacy and discipline are very important, especially at the high school level to help students improve their learning abilities. This study aims to answer the research question, namely how the results of descriptive statistics on self-efficacy variables and the disciplinary character of high school students in physics subjects. Are there differences and relationships between self-efficacy and the disciplinary character of physics high school students? The method used in this study is a mixed method. The research results are based on the t test which states that the comparative data is smaller than 0.05 and the correlation test which states the data results are smaller than 0.05. The conclusion of this study is the difference and relationship between self-efficacy and character discipline of students at Senior high school 5 Jambi City and Alberta High School Diploma in physics subjects. The update of this research is that knowing the relationship between self-efficacy and disciplinary character can be used as a source of good research in the future and for teachers and schools at the high school level. This research is limited by high school level and physics subjects.

Keywords: Character discipline; High school; Self-efficacy

INTRODUCTION

Education is knowledge, skills, and customs by a group of people that are passed down from generation to generation through education, training, or research (Kamid, Rohati, et al., 2021; Manubey et al., 2021; Akbar, 2023). The educational process is an activity to mobilize educational facilities by educators aimed at educational goals (Kartina, 2023; Karuku, 2023; Kurniawati & Suwahno, 2023). How the educational process is carried out will determine the quality of the educational goals. One of the fields of education that studies the natural sciences is physics. Physics is the study of matter and its motion and space-time behavior, as well as related concepts such as energy and force (Rochman et al., 2017; Subekti & Ariswan, 2016; Ardila & Hidayah, 2023). One of the important factors in learning physics is students' self-efficacy.

Self-efficacy is the belief in oneself that one can master the situation and produce positive results (Utami & Wutsqa, 2017; Zysberg & Schwabsky, 2021; Ariska, 2023). In general, self-efficacy

is a self-confidence or individual belief in their ability to do something, produce something, organize, achieve their goals, and also implement actions to realize certain skills (Beghetto & Karwowski, 2017; Dou et al., 2018; Azuratunnasuha, 2023). For example, a student with low self-efficacy may not want to try to learn to work on a problem because he doesn't believe that studying will help him work on the problem. One of the relationships between self-efficacy which is a belief that there are also characters that help make students become better individuals, namely the character of discipline.

Discipline character is a rule set by oneself to achieve certain things related to education, application of learning objectives, and intelligence (Suradi, 2017; Yuliyanto et al., 2018). Building smart education starts with discipline. Discipline characters that are very important for students can get very valuable benefits from the applied discipline (Ernawati, 2022; Hoyi, 2023; Juliana & Ermayani, 2023). Discipline is not only done for the rules and all the rules and policies to be followed, but also for the confidence to achieve a high level of success. For example, time discipline: Students who work with discipline value time and complete assignments within the allotted time (Castro, 2023; Ekasari & Maulidinah, 2023; Hardi et al., 2023)

This research is in line with research (Amin, Kurniawan, Septi, et al., 2021; Wang & Kuo, 2019; Hendriyani, 2023) which discusses discipline and character starting from quality education and professional teachers in teaching and this research also discusses discipline. The importance of discipline that must be applied to every educational institution and individual so that later each student has a great sense of responsibility as a student (Septi et al., 2022; Latief & Novalia, 2023; Septi et al., 2023).The position of this research is very important, namely by knowing the comparison of self-efficacy and the character of disciplines in physics subjects and knowing the relationship with the variables of self-efficacy and character of discipline so that it can be used as a source of good research in the future.

In this study, the variables used were self-efficacy variables and student discipline character. However, this study has a weakness, namely only conducting tests at the level not at the gender level to find out more specifically the self-efficacy and discipline of students based on gender, namely female students and male students. This study aims to answer the research question, namely how are the results of student descriptive statistics on the variables of self-efficacy and student discipline character in high school in physics subjects. Is there a difference and relationship between self-efficacy and discipline character of students in high school in physics subjects.

RESEARCH METHOD

This study uses mixed research methods designed with an explanatory design. Mixed methods research is a combination of two methods, namely quantitative and qualitative research methods (Amin, Kurniawan, Azzahra, et al., 2021; Syahrial et al., 2020; Darmaji et al, 2023). The explanatory design is carried out in several stages of research, first by collecting data, second by analyzing the data and third by formulating the results quantitatively, then proceeding with data collection, analyzing and formulating qualitative data, and ending with interpreting the research results (Creswell, 2013; Kamid et al., 2022; Nelli, 2023).

The instrument in this study used the type of questionnaire instrument. Where the questionnaire used consists of a self-efficacy and discipline character questionnaire. There are 28 valid statement items on this instrument using a Likert scale. The scale consists of 5 points with a very appropriate score of 4, appropriate, namely 3, less appropriate, 2, and inappropriately 1. Each statement is representative of each indicator of self-efficacy and discipline character. The focus of this research is on 2 indicators of self-efficacy: making inner experience the basis for increasing confidence and the strength of belief. In 2 indicators of discipline character: collecting assignments on time and doing each assignment given in physics subjects using a Likert scale consisting of 5 categories, there are intervals in each category, and the intervals in each category can be seen in the table below. The lattice of self-efficacy instruments and discipline characters in physics subjects are as follows:

Table 1. Self-efficacy of the lattice instrument and the character of students' discipline in physics subjects

Variable	Indicator	No. Statement Items
Self-Efficacy	Using deep experience as a basis to increase confidence	1.2.3.4.5.6.7.8
	Strong belief	9.10.11.12.13
Discipline Character	Swallow tasks on time	1.2.3.4.5.6.7.8.9
	Do any given task	10.11.12.13.14.15
Number of Statements		28

Because the self-efficacy and discipline character questionnaire in physics subjects uses a Likert scale consisting of 5 categories, there are intervals in each category, and the intervals in each category can be seen in the table below. The description of the category of self-efficacy and discipline character in physics subjects is as follows:

Table 2. Categories of self-efficacy and discipline character in physics subjects

Category	Interval variabel/Indicator			
	Self-Efficacy		Discipline Character	
	Using deep experience as a basis to increase confidence	Strong belief	Swallow tasks on time	Do any given task
Very not good	8.0 – 14.4	5.0 – 9.0	9.0 – 16.2	6.0 – 10.8
Not good	14.5 – 20.8	9.1 – 13.0	16.3 – 23.4	10.9 – 15.6
Enough	20.9 – 27.2	13.1 – 17.0	23.5 – 30.6	15.7 – 20.4
Good	27.3 – 33.6	17.1 – 21.0	30.7 – 37.8	20.5 – 25.2
Very good	33.7 – 40.0	21.1 – 25.0	37.9 – 45.0	25.3 – 30.0

Population The research sample is the research subject that will be examined for characteristics and other things that will be needed in a study (Putri et al., 2021; Putri et al, 2022; Mulyati et al., 2023). The population of this study was 100 students consisting of 50 students of Senior high school 5 Jambi City and 50 students of Alberta High School Diploma. The sampling technique is random sampling. The reason for taking research subjects from Senior high school 5 Jambi City and Alberta High School Diploma is because these schools have done a lot of learning so that it can be seen the variables of self-efficacy and discipline character in the range of high school.

The data analysis technique used is random sampling because the sample used is students who study physics subjects according to the variables of self-efficacy and discipline character. The use of random sampling in this research is to save time, cost and effort. It also makes it easier and more detailed to analyze all data from smaller survey subjects, enabling more accurate and comprehensive survey results. From these data, descriptive statistical tests and inverential tests were then carried out in the form of testing assumptions and hypotheses. In the assumption test, three tests were carried out, namely normality test, homogeneity test, and linearity test. The normality test serves to determine whether the data being tested is normally distributed (Budiarti et al., 2022; Syahrial et al., 2023). Homogeneous test serves to find out whether several groups of research data have the same variance or not (Ernawati et al., 2021; Wibowo, 2023; Wulandari, 2023). Linearity test serves to determine whether the data is linearly distributed. Then test the hypothesis in the form of t test and correlation test. The t test is used to determine the comparison of attitude variables and scientific literacy variables. correlation test to determine the relationship between self-efficacy variables and discipline character (Kamid, Rohati, et al., 2021). These tests were then tested using SPSS 26 to obtain accurate results. The following is the research procedure.
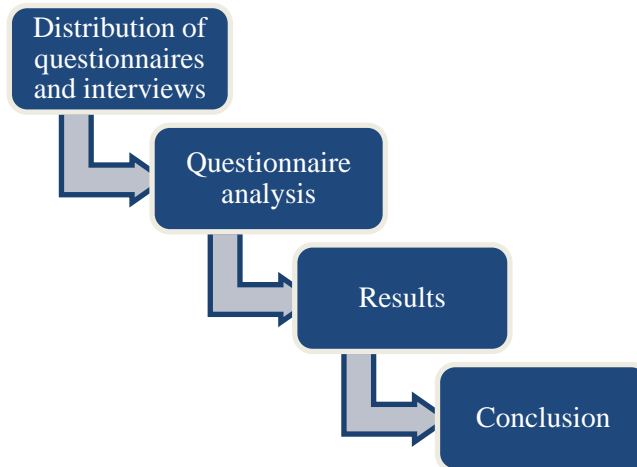
Figure 1. Research procedure

RESULTS AND DISCUSSION

The following describes the results of descriptive statistics on self-efficacy variables and students' discipline character. With questions about indicators of self-efficacy: make internal experiences as the basis for increasing beliefs and the strength and weakness of beliefs. Indicator statements about the character of student discipline: collect assignments on time and do each assignment given. Where the results obtained from the distribution of questionnaires and interviews at Senior High School 5 Jambi City and Alberta High School Diploma. The description of self-efficacy on indicators using internal experience as the basis for increasing confidence is shown in the following table.

Table 3. Description of self-efficacy on indicators using internal experience as a basis for increasing confidence

School	Category	Interval	F	%	Mean	Med	Min	Max
Senior High School 5 Jambi City	Very not good	8.0-14.4	0	0				
	Not good	14.5-20.8	3	6				
	Enough	20.9-27.2	15	30	3.5	3.5	2.0	5.0
	Good	27.3-33.6	20	40				
	Very good	33.7-40.0	12	24				
Alberta High School Diploma	Very not good	8.0-14.4	0	0				
	Not good	14.5-20.8	8	16				
	Enough	20.9-27.2	19	38	3.8	4.0	2.0	5.0
	Good	27.3-33.6	19	38				
	Very good	33.7-40.0	4	8				

From the description of the table above, it can be seen that the comparison with the good category at senior high school 5 Jambi City is higher than Alberta High School Diploma so it can be said that senior high school 5 Jambi City is superior to Alberta High School Diploma in indicators of making internal experience as a basis for increasing confidence.

The description of self-efficacy on the indicators of the strength and weakness of belief is shown in the following table.

Table 4. Description of self-efficacy on indicators of strong or weak belief

School	Category	Interval	F	%	Mean	Med	Min	Max
Senior high school 5 Jambi City	Very not good	5.0 - 9.0	5	10				
	Not good	9.1 - 13.0	9	18				
	Enough	13.1 - 17.0	8	16	3.8	4.0	1.0	5.0
	Good	17.1 - 21.0	16	32				
	Very good	21.1 - 25.0	12	24				
Alberta High School Diploma	Very not good	5.0 - 9.0	8	16				
	Not good	9.1 - 13.0	11	22				
	Enough	13.1 - 17.0	9	18	3.6	4.0	1.0	5.0
	Good	17.1 - 21.0	12	24				
	Very good	21.1 - 25.0	10	20				

From the description of the table above, it can be seen that the comparison with the good category at senior high school 5 Jambi City is higher than Alberta High School Diploma, so it can be said that senior high school 5 Jambi City is superior to Alberta High School Diploma in indicators of using internal experience as a basis for strong or weak beliefs.

The description of the discipline character on the indicators of collecting assignments on time is shown in the following table.

Table 5. Description of the character of discipline on the indicators of collecting assignments on time

School	Category	Interval	F	%	Mean	Med	Min	Max
Senior high school 5 Jambi City	Very not good	9.0 – 16.2	4	8				
	Not good	16.3 – 23.4	7	14				
	Enough	23.5 – 30.6	18	36	3.3	3.0	1.0	5.0
	Good	30.7 – 37.8	11	22				
	Very good	37.9 – 45.0	10	20				
Alberta High School Diploma	Very not good	9.0 – 16.2	7	14				
	Not good	16.3 – 23.4	10	20				
	Enough	23.5 – 30.6	17	34	3.2	3.0	1.0	5.0
	Good	30.7 – 37.8	8	16				
	Very good	37.9 – 45.0	8	16				

From the description of the table above, it can be seen that the comparison with the sufficient category at senior high school 5 Jambi City is higher than Alberta High School Diploma so it can be said that senior high school 5 Jambi City is superior to Alberta High School Diploma in the indicator of collecting assignments on time.

The description of the discipline character on the indicators for each task given is shown in the following table.

Table 6. Description of the character of discipline on the indicators of doing each task given

School	Category	Interval	F	%	Mean	Med	Min	Max
Senior high school 5 Jambi City	Very not good	6.0-10.8	5	10				
	Not good	10.9-15.6	8	16				
	Enough	15.7-20.4	17	34	2.5	3.0	1.0	5.0
	Good	20.5-25.2	10	20				
	Very good	25.3-30.0	10	20				
Alberta High School Diploma	Very not good	6.0-10.8	8	16				
	Not good	10.9-15.6	8	16				
	Enough	15.7-20.4	16	32	2.4	3.0	1.0	5.0
	Good	20.5-25.2	9	18				
	Very good	25.3-30.0	9	18				

From the description of the table above, it can be seen that the comparison with the sufficient category at senior high school 5 Jambi City is higher than Alberta High School Diploma so that it can be said that senior high school 5 Jambi City is superior to Alberta High School Diploma in indicators of making internal experience as a basis for carrying out any tasks assigned. given.

The normality test of self-efficacy and student discipline character at senior high school 5 Jambi City and Alberta High School Diploma is described in the following table:

Table 7. Normality test of self-efficacy and student discipline character at senior high school 5 Jambi City and Alberta High School Diploma

Schools	Variabel	Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
Senior high school 5 Jambi City	Self-Efficacy	.187	50	.200*	.361	50	.470
	Discipline character	.136	50	.200	.372	50	.480
Alberta High School Diploma	Self-Efficacy	.295	50	.200	.373	50	.470
	Discipline character	.294	50	.200*	.365	50	.480

Based on the results of the table above, it can be concluded that the data is normally distributed. The normality test was obtained by the Kolmogorov-Smoirnov test, the significance value was > from 0.05.

The homogeneity test of self-efficacy and student discipline character at senior high school 5 Jambi City and Alberta High School Diploma is described in the following table:

Table 8. Homogeneity test of self efficacy and student discipline character at senior high school 5 Jambi City and Alberta High School Diploma

School	Variable	N	Sig. (2-tailed)
Senior high school 5 Jambi City	Self-Efficacy	50	0.528
	Discipline character	50	0.529
Alberta High School Diploma	Self-Efficacy	50	0.526
	Discipline character	50	0.527

Based on the table above, it can be concluded that the homogeneity test has a homogeneous pattern at senior high school 5 Jambi City and Alberta High School Diploma. It is proven that the result of sig (2-tailed) is more than 0.05.

The linearity test of self-efficacy and student discipline character at senior high school 5 Jambi City and Alberta High School Diploma is described in the following table:

Table 9. Linearity test of self-efficacy and discipline character of students at senior high school 5 Jambi City and Alberta High School Diploma

School	Variable	N	Sig. (2-tailed)
Senior high school 5 Jambi City	Self-Efficacy	50	0.037
	Discipline character	50	0.036
Alberta High School Diploma	Self-Efficacy	50	0.035
	Discipline character	50	0.034

Based on the table above, it can be concluded that the linearity test is linearly distributed at senior high school 5 Jambi City and Alberta High School Diploma. It is evident that the sig (2-tailed) result is smaller than 0.05.

The T-test of self-efficacy and student discipline character at senior high school 5 Jambi City and Alberta High School Diploma is described in the following table:

Table 10. T-test of self-efficacy and student discipline character at senior high school 5 Jambi City and Alberta High School Diploma

School	Variable	N	Sig. (2-tailed)
Senior high school 5 Jambi City	Self-Efficacy	50	0.018
	Discipline character	50	0.017
Alberta High School Diploma	Self-Efficacy	50	0.016
	Discipline character	50	0.015

Based on the table above, it can be concluded that there is a comparison between self-efficacy and discipline character at senior high school 5 Jambi City and Alberta High School Diploma. It is proven from the results of sig. (2-tailed) is less than 0.05.

The correlation test of self-efficacy and student discipline character at senior high school 5 Jambi City and Alberta High School Diploma is described in the following table:

Table 11. Correlation test of self-efficacy and student discipline character at senior high school 5 Jambi City and Alberta High School Diploma

School	Variable	N	Sig. (2-tailed)
Senior high school 5 Jambi City	Self-Efficacy	50	0.035
	Discipline character	50	0.036
Alberta High School Diploma	Self-Efficacy	50	0.034
	Discipline character	50	0.033

Based on the table above, it can be concluded that there is a relationship between self-efficacy and the discipline character of students at senior high school 5 Jambi City and Alberta High School Diploma. It is proven from the results of sig. (2-tailed) is less than 0.05.

Interview Results with Teachers

In interviews with teachers about the physics teacher's strategies in fostering self-efficacy and the disciplined character of diverse students in high school. The average teacher there uses several learning strategies that are appropriate to physics subjects that are integrated with student self-efficacy and student discipline character in schools, including coaching on self-efficacy and disciplined character at senior high school 5 Jambi City and Alberta High School Diploma. The inhibiting factors are the facilities and infrastructure that are still quite inadequate and the limited physics learning every week.

The resulting data were processed using three types of tests, namely descriptive statistical tests, assumption tests, and hypothesis testing. Descriptive statistical test to see the results of the percentage, median, mean, minimum, and maximum by analyzing the result data based on five existing categories (Amin, Kurniawan, Septi, et al., 2021; Medina, 2023; Nahar, 2023). Based on table 3, the average number of students chose the good category with the percentage for senior high school 5 Jambi City 40% good and Alberta High School Diploma 38% good. So, it can be concluded that senior high school 5 Jambi City is superior to Alberta High School Diploma in the self-efficacy variable on the indicator of making internal experience as a basis for increasing confidence. Based on table 4, the average number of students chose the good category with the percentage for senior high school 5 Jambi City 32% good and Alberta High School Diploma 24% good. So, it can be concluded that senior high school 5 Jambi City is superior to Alberta High School Diploma in the self-efficacy variable on indicators of strong and weak belief. Based on table 5, the average number of students chose the good category with the percentage for senior high school 5 Jambi City 36% sufficient and Alberta High School Diploma 34% sufficient. So, it can be concluded that senior high school 5 Jambi City is superior to Alberta High School Diploma in the discipline character variable on the indicator of collecting assignments on time. Based on table 6, the average number of students chose the sufficient category with the percentage for senior high school 5 Jambi City 34% sufficient and Alberta High School Diploma 32% sufficient. So, it can be concluded that senior high school 5 Jambi City is

superior to Alberta High School Diploma in the discipline character variable on the indicators of doing each task given.

The next test is the assumption test which consists of normality test, homogeneity test, and linearity test. The first assumption analysis test is about the normality test. The normality test was carried out to determine whether the data was normally distributed or not by looking at the results of Kolmogorov Smirnov greater than 0.05 (Kamid, Sofnidar, et al., 2021). Based on table 7, the results of the normality test for self-efficacy and student discipline character, namely at senior high school 5 Jambi City, which is 0.200 and at Alberta High School Diploma, which is 0.200, it can be concluded that the results obtained are > 0.05 so it can be said that the data is normally distributed. The second assumption analysis test is about linearity test. Next is the homogeneity test is carried out to determine whether the data is homogeneous or not with the results of sig > 0.05 then the data has a homogeneous pattern (Rinjani & Romadona, 2023; Rosada, 2023; Saputro, 2023). Based on table 8, the results of the homogeneity test of self-efficacy and student discipline character are at senior high school 5 Jambi City, namely 0.528, 0.529 and at Alberta High School Diploma are 0.526, 0.527 it can be concluded that the results obtained are > 0.05 so it can be said that the data is homogeneous. Based on table 9, the results of the linearity test of the discipline character and understanding of students' concepts are at senior high school 5 Jambi City, namely 0.037, 0.036 and at Alberta High School Diploma are 0.035, 0.034 it can be concluded that the results obtained are > 0.05 so it can be said that the data is linearly distributed.

Then, the hypothesis test was conducted, namely t test and correlation test. The first hypothesis test, namely the t test, was carried out with the aim of knowing the comparison between two schools by comparing two variables (Amin, Alimni, et al., 2021; Sabil et al, 2023; Perdana et al., 2023). Based on table 10, the results of the t-test of self-efficacy and student discipline character are at senior high school 5 Jambi City, namely 0.018, 0.017 and at Alberta High School Diploma are 0.16, 0.015. so it can be concluded that there is a comparison between senior high school 5 Jambi City and Alberta High School Diploma. It is proven from the results of sig. (2-tailed) is less than 0.05. In the second hypothesis test, which is about the correlation test, it is carried out with the aim of knowing the relationship between two schools and the relationship between two variables (Rahmawati et al., 2023; Refliana & Pertiwi, 2023; Rini & Aldila, 2023). Based on table 11, the results of the correlation test of students' attitudes and scientific literacy are at senior high school 5 Jambi City, namely 0.035, 0.036 and at Alberta High School Diploma are 0.034, 0.033 so it can be concluded that there is a relationship between senior high school 5 Jambi City and Alberta High School Diploma. It is proven from the results of sig. smaller than 0.05.

This study is in line with previous research conducted by (Yuliyani et al., 2017) on student self-efficacy. The study said that self-efficacy is very important for students to have in learning to improve students' abilities. However, previous research testing was not done by testing the variables and two schools. Where testing of two variables and two important schools is carried out to determine the comparison between one school and another so that it is known that students' self-efficacy is better between one school and another as a research benchmark. Our research compares student attitudes in two schools with two variables and four indicators so that our research can be used as a benchmark for comparing self-efficacy in high school.

This research is also in line with previous research conducted by (Suradi, 2017) which examined the character of the discipline. However, this study did not perform some of the tests carried out by this study, namely the assumption test. One of the assumption tests is the homogeneity test, where the homogeneity test is important to do to find out whether the data we are going to test is homogeneous or not. In our research, we tested two assumption tests, namely normality and homogeneity tests. So that our research is precise and accurate.

The short-term impact of this research is useful and can be used as a benchmark to improve the quality of self-efficacy and character of students' discipline, especially at the secondary school level. The long-term impact of this research is that it can be used as a benchmark to conduct further research on self-efficacy and student discipline character. The limitation of this study is that it only compares schools. However, there has not been a test with a gender comparison between female and male students so that it can be known specifically the self-efficacy and discipline character of students in high school. The researcher suggests conducting further research to compare the variables of self-

efficacy and student discipline character based on gender and the researcher suggests conducting research at the high school level.

CONCLUSION

Based on the formulation of the problem in the study, it was concluded that Senior High School 5 Jambi City had superior self-efficacy and discipline character than Alberta High School Diploma. There is a comparison between self-efficacy and discipline character of students at Senior High School 5 Jambi City and Alberta High School in physics subjects. There is a relationship between attitudes and scientific literacy of students at Senior High School 5 Jambi City and Alberta High School in physics subjects.

ACKNOWLEDGMENTS

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