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Self-Directed Learning Model to Develop Academic Self-Concepts of Class XI Students in 2019/2020 Academic Year

ABSTRACT: Education aims to develop the full potential of a person to become a complete human being. The most important thing is that actualization of potential can be obtained if someone has a self-concept. The relationship between self-concept and current education can be seen in the purpose of education. The success of students in following the education and learning process in schools is greatly influenced by their academic self-concept. One method of learning that can be done by teachers in schools in developing students' academic self-concepts through the application of the SDL (Self-Directed Learning) model. This study departs from the issue of the self-directed learning model effective in developing the academic self-concept of class XI students at the SMAN (Sekolah Menengah Atas Negeri or Public Senior High School) 4 Bandung, West Java, Indonesia, in Academic Year 2019/2020 compared to conventional learning. This study uses a quasi-experimental method with a pre-test and post-test control group research design. The instrument used was an academic self-concept questionnaire by expressing three aspects, namely: the ability self-concept, achievement self-concept, and class self-concept. The population in this study were students of class XI at the SMAN 4 Bandung as many as 320 students with a sample of students in class XI MIPA (Matematika dan Ilmu Pengetahuan Alam or Mathematics and Natural Sciences) 6 of 29 students as an experimental class and students of XI MIPA 2 of 29 students as control classes. The results showed that the self-directed learning model was effective in developing students' academic self-concepts compared to conventional learning. From the results of this study, it can be recommended to teachers and researchers, further, that the model of self-directed learning can be a reference as an effort to help students to develop academic self-concepts.

KEY WORDS: Self-Directed Learning Model; Academic Self-Concept; Conventional Learning.

INTRODUCTION

Education aims to develop the full potential of a person to become a complete human being. The development of one's potential will not be realized, if it is not pursued. A person's efforts to actualize his/her potential will also shape his/her attitude and personality. The most important thing is that actualization of potential can be

obtained, if someone has a self-concept. The relationship between self-concept and current education can be seen in the purpose of education (Vera, 2012:3; Suratno, 2014; and Ali, 2015).

According to Fauziah Nur Ika & Agustina Ekasari (2008); Nanang Erma Gunawan (2010); and other scholars, academic self-concept is the main foundation for the

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Suggested Citation: Nandika, Kania. (2020). "Self-Directed Learning Model to Develop Academic Self-Concepts of Class XI Students in 2019/2020 Academic Year" in *EDUCARE: International Journal for Educational Studies*, Volume 13(1), August, pp.61-80. Bandung, Indonesia: Minda Masagi Press owned by ASPENSI with ISSN 1979-7877 (print) and ISSN 2621-587X (online).

Article Timeline: Accepted (June 1, 2020); Revised (July 3, 2020); and Published (August 30, 2020).

success of the learning process, including how a person learns to improve his/her learning outcomes to be even more excited. So, academic self-concept covers various aspects of development in a person, including cognitive abilities, affective, and motivation to make more achievement (Ika & Ekasari, 2008:17; Gunawan, 2010; Nirwana, 2013; and Darling-Hammond *et al.*, 2020).

Throughout learning, students can assess themselves and other students by seeing how he/she or other students can complete the given task. A behavior that is said to fail and succeed is used as a reference in assessing the implementation of the task, as well as in compiling an attitude or view of the capabilities possessed (Gunawan, 2010; Hossain, 2015; and Darling-Hammond *et al.*, 2020).

Academic self-concept is the key to building open communication between teachers and students, so as to create active participation between the two in teaching and learning activities. In this context, D. Hamachek (1995), and other scholars, also concluded that a positive academic self-concept will minimize the emergence of learning difficulties in students. Reducing learning difficulties is what ultimately allows students to get better academic mastery (Hamachek, 1995; UNESCO, 2015; and Muttaqin *et al.*, 2020).

Furthermore, S. Mercer (2011), and other scholars, revealed that students who have an academic self-concept have an independent attitude, strong will, and motivation in achieving academic goals that are reflected in their abilities and involvement in participating in academic activities by using various strategies in the learning process (Fry, Ketteridge & Marshall eds., 2009; Mercer, 2011:1; and Darling-Hammond *et al.*, 2020).

Zuhyati A. Tlonaen & Jusuf Blegur (2017), and other scholars, explained that students who maintain academic self-concept in order to remain positive will have advantages or strengths in the academic field, so that they are able to complete their learning tasks and responsibilities as well as encourage students' intention and effort towards their academic quality (Dunlosky *et al.*, 2013; Tlonaen & Blegur, 2017:231; and Darling-Hammond *et al.*, 2020).

Students who have positive academic self-concepts in dealing with problems will independently try to solve these problems, lead to positive attitudes, and beliefs about their own success; while students who have negative academic self-concepts will have negative evaluations of themselves as if they feel they are not competent or even stupid (Tlonaen & Blegur, 2017:231; Blazar & Kraft, 2017; and Darling-Hammond *et al.*, 2020).

There are still students who lack a positive academic self-concept. Based on preliminary studies conducted at the SMAN (*Sekolah Menengah Atas Negeri* or Public Senior High School) 4 Bandung, Class X, in August 2018, several problems were found that indicated negative academic self-concepts, namely: (1) students like to complain about school, about difficult subjects; (2) students tend lacks the courage to appear or speak in front of the class; (3) students tend to give up quickly when they get difficult assignments, so they choose to cheat both during tests and do other tasks at school when learning is taking place that is considered not important according to him/her; and (4) feel scared and hesitant when asked to argue or answer questions given by the teacher.

The impact felt when students have negative self-concepts, students feel themselves unable to cause him/her to feel lazy to learn and choose not to use his/her abilities, but rely on other people or use certain tools at the time of the test, and cheat as a shortcut. Teenagers who have good academic mastery can provide personal satisfaction and get recognition from peer groups, so that self-esteem in front of the group increases (Weeks, 2000; Verhoeven, Poorthuis & Volman, 2019; and Lederman, 2020).

This is reinforced by the opinion of E. Hurlock (2004), and other scholars, that teenagers who do not have academic achievements will feel dissatisfied feelings will not be able to meet expectations among peers and be self-rejecting (Hurlock, 2004:239; McElhaney, Antonishak & Allen, 2008; and Valiente, Swanson & Eisenberg, 2012).

Added by E. Tory Higgins (1987), as cited also in Sarwono & Meinarno (2009), that in a person there may be a gap between the

actual-self with the ideal-self (desired-self) and ought-self (self-should); if someone fails to overcome this, it can cause the emergence negative emotions, such as anxiety, fear, and threatened (Higgins, 1987; Sarwono & Meinarno, 2009; and Bak, 2014).

One of the factors that can influence the learning process is the learning model. The learning model is a way or effort made by the teacher, so that the learning process of students is achieved in accordance with the expected goals (Timperley *et al.*, 2007; Abadi & Wibawa, 2017:162; and Blazar & Kraft, 2017).

In learning, students tend to feel bored. This is influenced by several factors, such as how to teach monotonous teachers, lack of student learning motivation, and teaching materials that do not interest students. Therefore, in developing students' potential, planning is needed to create a learning atmosphere in accordance with the needs and efforts to improve student learning outcomes, so that they develop optimally. The quality of learning can be improved by increasing the knowledge of teachers about how to design and implement learning, so that it becomes more effective, efficient, and interesting (Timperley *et al.*, 2007; Milrad, 2018; and Khanshan & Yousefi, 2020).

Through self-directed learning, students are required to have the ability to carry out learning activities alone or with the help of others based on their own motivation to master a certain competency, especially related to positive academic self-concept. For this reason, the need for a model of SDL (Self-Directed Learning), which is applied in learning in schools, so that it can improve all the potential and abilities of students as optimal as possible in the learning process properly (Hmelo-Silver, 2004; Silen & Uhlin, 2008; and Tjakradidjaja *et al.*, 2016).

With this learning model, not only increase knowledge (learning to know), but learn to find identity (learning to be). Thus, if this model is applied to students, especially those who have a negative academic self-concept, of course, they will gradually develop positive academic self-concepts by finding their own knowledge and understanding; learning to express; formulate and search for questions

of problems in learning; and can put forward arguments-logical arguments and can link the understanding obtained with prior knowledge (Thanasoulas, 2001; Harackiewicz, Smith & Priniski, 2016; and Liu & Yu, 2019).

In addition, the self-directed learning model needs to be applied to all students in order to have a positive academic self-concept, especially in subjects that are considered difficult by students. Many students, who have a high level of intelligence, have difficulty in completing school assignments and have achievements below their potential, due to psychological factors (Baranek, 1996; Weeks, 2000; and Darling-Hammond *et al.*, 2020).

In addition, K. Grieve (2003), and other scholars, stated that with the self-directed learning model, a person has psychological readiness and is responsible for the learning process; meaning that the student shows readiness to take lessons in class, do assignments both at home and at school, have complete learning, be exploratory, able to make decisions, confident, and creative (Weeks, 2000; Grieve, 2003; and Darling-Hammond *et al.*, 2020).

John W. Santrock (2003), and other scholars, argued that students' potential and talents can be achieved by applying self-directed learning, so that students do not depend on the teacher or school. Students can actively participate in determining what will be learned and how to learn it, so students are able to think critically, be able to accept reality, and be able to manipulate the environment, confident, focused on goals, and able to control themselves in any situation (Santrock, 2003; Wardati, 2011; and Khotimah, Doriza & Artanti, 2015).

Based on the explanation above, the researcher sees that there has not been an attempt by the teacher to overcome the problems, especially those related to academic self-concept problems. The role of the teacher here is still curative in relation to overcoming common problems, such as calling on students who have values that do not meet the standards without any effort to find out the right learning strategy that suits students' needs and to find out the source of student learning difficulties at school.

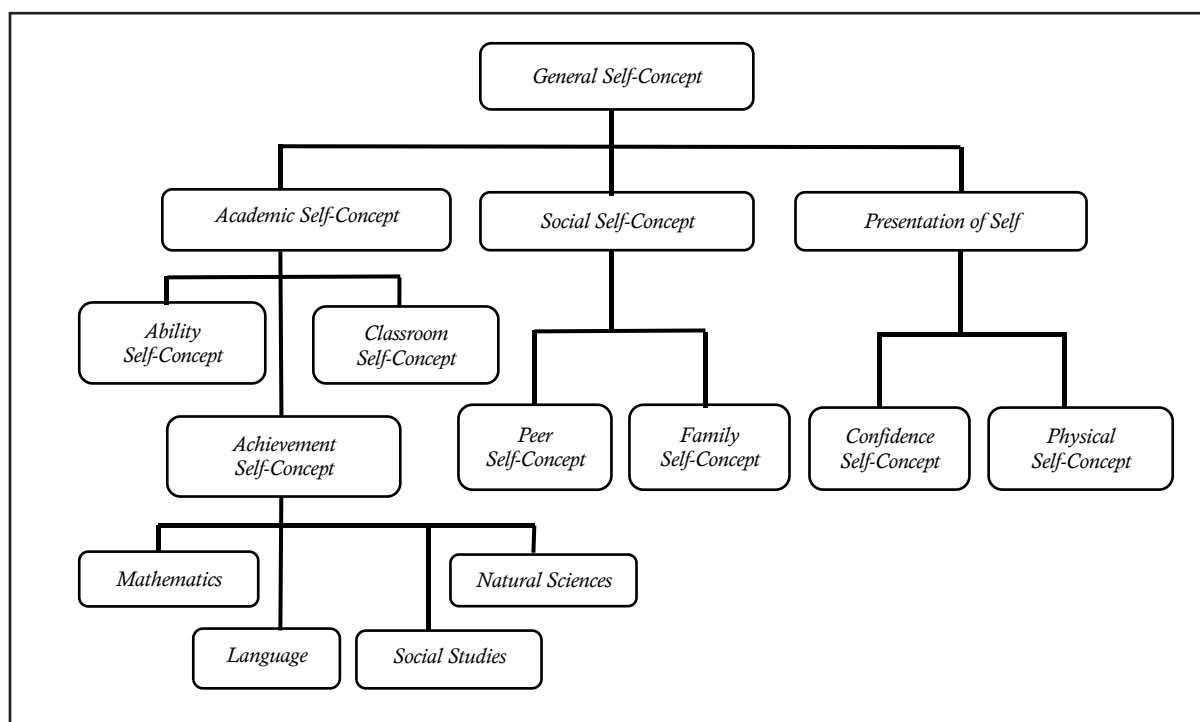


Chart 1:
The Division of Self-Concept

This is based on the assumption that the application of the model of self-directed learning can identify learning tasks to achieve learning goals; can challenge themselves to set standards in achieving learning goals; and can reflect on learning outcomes and have the initiative to get feedback from teachers and peers to achieving learning goals (Chee *et al.*, 2011; Tan & Ling, 2018; and Darling-Hammond *et al.*, 2020).

This is consistent with the characteristics of a positive academic self-concept that is having confidence and the ability to overcome a problem in learning; and dare to try new things, confident, and optimistic if given a challenge (Chee *et al.*, 2011; Tan & Ling, 2018; and Ackerman, 2020).

Based on this thought, this research is focused on the effectiveness of the model of self-directed learning to develop the academic self-concept of students at the SMAN (*Sekolah Menengah Atas Negeri* or Public Senior High School) 4 Bandung, West Java, Indonesia.

Seeing the importance of self-directed learning to develop students' academic self-concepts, the formulation of the problem in research is: (1) What is the general description

of the academic self-concept of Class XI students at the SMAN 4 Bandung in the 2019/2020 school year?; (2) How is the model of self-directed learning model effective in developing the self-concept of students at the SMA Negeri 4 Bandung Class XI 2019/2020 Academic Year?; and (3) How is the effectiveness of the model of self-directed learning in developing academic self concepts before and after being given a model of self-directed learning?

In accordance with the formulation of the problems outlined above, the purpose of this study is to find out: (1) to find an overview of the academic self-concept of Class XI students at the SMAN 4 Bandung in the academic year 2019/2020; (2) creating an effective self-directed learning model design in developing the self concept of SMA Negeri 4 Bandung Class XI students in 2019/2020 Academic Year; and (3) to find out the effectiveness of the model of self-directed learning in developing academic self-concepts before and after the self directed learning model is given?

Academic Self-Concept. G. Shavelson & C. Stanton (1976), and other scholars,

divided self-concepts into several parts, namely: general self-concepts which were divided into academic self-concepts and non-academic self-concepts. There are three types of non-academic self-concepts, namely: social, emotional, and physical (Shavelson & Stanton, 1976; Zahra, Arif & Yousuf, 2010; and Ackerman, 2020). The chart 1 is the division of self-concept.

For G. Shavelson & C. Stanton (1976), as cited also in H.W. Marsh, J.D. Relich & I.D. Smith (1983), this self-concept is very multi-dimensional and moves hierarchically. Starting from the academic self-concept (Mathematics and Reading) and, then, to the general self-concept. This self-concept is less multifaced as the individual develops, the baby becomes an adult and depends also on other systems that individuals receive in groups (Shavelson & Stanton, 1976; Marsh, Relich & Smith, 1983; Marsh & Hocevar, 1985; Pajares & Schunk, 2001; and Mehrad, 2016).

After we understand the general understanding of self-concepts from some experts, the focus in this study is the self-concept in the academic realm called the academic self-concept. The success of students in following the process of education and learning in schools is strongly influenced by their academic self-concept (Flowers, Raynor, Jr. & White, 2013; Afgani, Suryadi & Dahlan, 2019; and Ackerman, 2020).

The development of academic self-concept is influenced by a broad environment, not only of parents, but peers and teachers. One of the needs of children in adolescence that can be met from the school environment is recognition and appreciation of their achievements in the form of a picture of students about their abilities in learning at school, and students' perceptions of the views of teachers and peers towards their abilities, it will form an academic self-concept (Burns, 1993; Marsh & Hattie, 1996; and Marsh, Xu & Martin, 2012).

Someone, who has a student status, must have an academic self-concept. This academic self-concept is formed from the views of the students concerned about their ability to do assignments at school. Each subject in the school becomes one specific dimension that makes up the academic self-concept.

Likewise, students in schools will have an academic self-concept that is formed from students' perceptions of their abilities; and their role in the educational process is very important, especially with regard to the continuity of their education in the future (Blazar & Kraft, 2017; Herrera, al-Lal & Mohamed, 2019; and Ackerman, 2020).

J. Hattie (1992), as cited also in K.A. Kavale & M.P. Mostert (2004), defined academic self-concept as individual assessments in the academic field. The assessment includes the ability to take lessons, individual achievements in academics, and individual activities at school or in the classroom (Hattie, 1992; Kavale & Mostert, 2004; and Milligan, Phillips & Morgan, 2016).

H.W. Marsh (1990), and other scholars, added the notion of academic self-concept that is students' perceptions of abilities or academic achievement that will affect performance in school. This academic self-concept is formed from the views of the students concerned about their ability to do assignments that affect their learning achievement at school (Marsh, 1990; McInerney *et al.*, 2012; and Prihadi & Chua, 2012).

Academic self-concept is a self-perception evaluation that is formed through individual experience and theoretical views on the school environment. Academic self-concept is formed based on the views of him/her-self and other students about his/her abilities at school (Shavelson & Stanton, 1976; Ghazvini, 2011; and Ackerman, 2020).

From the description above, the academic self-concept can be interpreted as a perception of him/her-self and others about how well his/her learning performance, his/her ability to attend lessons, and academic achievement to be achieved by individuals both in class and at school (Ghazvini, 2011; Blazar & Kraft, 2017; and Darling-Hammond *et al.*, 2020).

Aspects and Types of Academic Self-Concept.

According to J. Hattie (1992), and other scholars, there are three main aspects of academic self-concept, namely:

Firstly, Ability Self-Concept, namely individual perceptions related to academic abilities, such as the ability and inability

to complete tasks and tests, confidence in academic abilities, and have an independent attitude in learning (Hattie, 1992; Satriani, 2014; and Ananda, 2017).

Secondly, Achievement Self-Concept, namely individual perceptions related to students' actual academic achievements, such as having a willingness to achieve better results, having an attitude that is not easily satisfied with the achievements that have been achieved, and have a sense of pride and shame towards academic achievement (Hattie, 1992; Domenech-Betoret, Abellan-Rosello & Gomez-Artiga, 2017; and Herrera, al-Lal & Mohamed, 2019).

Thirdly, Classroom Self-Concept, namely individual perceptions about how well their learning performance in class by comparing themselves with friends in class, such as dare to appear or talk in front of the class, how the response from friends or teachers in their class, and how friends or teacher's confidence in him or her in class (Hattie, 1992; Abdullah, Bakar & Mahbob, 2012; and Marciniak, 2015).

From the explanation above presented by J. Hattie (1992), and other scholars, regarding the dimensions of academic self-concept, the researcher in this study revealed academic self-concepts based on aspects, namely Ability Self-Concept, Achievement Self-Concept, and Classroom Self-Concept.

Types of academic self-concept are consisted of two matters: (1) *Positive Academic Self-Concept*; and (2) *Negative Academic Self-Concept*.

Firstly, *Positive Academic Self-Concept*. Students who have positive academic self-concepts are able to communicate positively with teachers and also with students in academic activities. I.Y. Rauh (2013), and other scholars, stated that positive academic self-concept has the characteristics of: (1) students have confidence and ability to overcome a problem; (2) students have a realization that outside of themselves does not always approve every feeling, desire, or behavior; (3) students who are able to improve themselves; (4) students have self-confidence; and (5) students have the type of receiving shameless praise (Weeks, 2000; Rauh, 2013:8; and Ackerman, 2020).

According to Mahmud (2000), and other scholars, a positive academic self-concept will make students able to use all their potentials and abilities optimally by following the learning process well (Mahmud, 2000:22; Artino, Jr., 2012; and Luttenberger, Paechter & Ertl, 2019).

Secondly, *Negative Academic Self-Concept*. People who have negative self-concepts are: individuals are easily angry and angry, and cannot stand the criticism they receive; the individual is very responsive to the praise given by others to him/her; individuals are not smart and unable to express appreciation or acknowledgment of the strengths of others; and individuals are pessimistic about competition, reluctance to compete with others in making competitions, especially in schools (Seltzer, 2008; Redmond, 2015; and Ackerman, 2020).

Negative academic self-concept will not make students use all their potentials and abilities optimally, because they do not understand all their potential, giving rise to traits that can cause the learning process to be disrupted (Weeks, 2000; Bak, 2014; and Sieberer-Nagler, 2016).

Self-Directed Learning Model. Self-directed learning includes how students learn every day, how students can adapt to rapidly changing circumstances, and how students can take their own initiative when an opportunity does not occur or does not arise (Gibbons, 2002; Beckmann & Minnaert, 2018; and Gresham, 2019).

Self-directed learning is a process where individuals take the initiative, with or without the help of others, and the process in self-directed learning is done by being aware of one's own needs in learning, setting personal goals, making decisions at the source, and learning strategies and assessing results (Knowles, 1975; and Jossberger *et al.*, 2018; and Khodabandehlou *et al.*, 2012).

Some other terms, S.B. Merriam & R.S. Caffarella (1991), as cited also in Maurice Gibbons (2002), stated that self-directed learning is also defined as a process in which people take the main initiative to plan, implement, and evaluate their own learning (Merriam & Caffarella, 1991; Abdullah *et al.*,

2008; and Gibbons, 2002).

Some experts put forward the definition of SDL (Self-Directed Learning) is learning that is flexible but still oriented to planning, monitoring, and evaluating depending on the ability of students to manage learning according to their autonomy (Silen & Uhlin, 2008; Octafa, 2010:179; and Jossberger *et al.*, 2018).

The self-directed learning model requires students to be able to manage existing learning resources according to the learning needs and context. The model of self-directed learning does not mean self-study. In the learning process, students will first try to understand the contents of the lesson read; if they have difficulty, then, students ask questions or discuss with the teacher or instructor (Rusman, 2018:355; Thornton, 2010; and Tan & Ling, 2018).

Based on the explanation above, it can be concluded that SDL is an effort where students as learners are responsible for their learning needs, which are carried out by formulating learning objectives, identifying suitable learning resources, choosing suitable learning strategies, and monitoring and evaluating learning outcomes (Silen & Uhlin, 2008; Hawkins, 2018; and Jossberger *et al.*, 2018).

The task of the teacher or instructor in the self-directed learning model is to become a facilitator, a person who is ready to provide assistance to students to be a person, who is ready to provide assistance to students by selecting learning materials and media, and in solving problems that cannot be solved by students (Marsh, Xu & Martin, 2012; Milrad, 2018; and Darling-Hammond *et al.*, 2020).

In addition, students in the model of self-directed learning may not depend on the teacher or peer direction, but must have their own creativity and initiative and be able to work alone by referring to the guidance they get. The assignment of friends in this learning process is very important, because being a partner in learning together and discussing. By discussing with friends will become aware of the different levels of ability themselves, if students feel their abilities are lacking when compared to friends, he/she will be encouraged to be more active in learning

(Weeks, 2000; Chin & Osborne, 2008; and Milrad, 2018).

Rusman (2018), and other scholars, added that students often felt themselves stupid and discouraged, but when they found out that a friend was experiencing the same thing, the feeling was lost and excited again. Self-directed learning is learning that is flexible, but still oriented to planning, monitoring, and evaluating depending on the ability of students to manage learning according to their autonomy. Self-directed learning requires students to be able to manage existing learning resources in accordance with the needs and context of learning (Weeks, 2000; Dunne, 2007; and Rusman, 2018:356).

METHODS

Through this quantitative approach, the research data will be obtained in the form of scores (figures), which will later be processed through statistical data, then described to obtain an overview of the academic self-concept of high school students. This research is an experimental research, and this research has independent variables and dependent variables (Williams, 2007; Creswell, 2012; and Daniel, 2016).

J.W. Creswell (2012), and other scholars, argued that experiments are carried out when wanting to find out the cause and effect between the independent variable and the dependent variable (Williams, 2007; Creswell, 2012:295; and McLeod, 2019). The independent variable in this study is a model of self-directed learning; while the dependent variable is the student's academic self-concept. The design used, according to J.W. Creswell (2012:310), as follows:

E	O ₁	X	O ₂
K	O ₃		O ₄

Information:

E = Experimental Group; K = Control Group;
X = Intervention (Treatment) of Self-Directed Learning Model; O₁ = Pre-Test; O₂ = Post-Test;
O₃ = Pre-Test; and O₄ = Post-Test.

Population and Sample. The population in this study were all students of class XI at the SMAN (*Sekolah Menengah Atas Negeri*)

Table 1:
Determination of Experiment Class and Control Class

Number	Class	Total of Score	Average	Total of Student
1	XI MIPA 1	3671	114.71	32 Persons
2	XI MIPA 2	3416	117.79	29 Persons
3	XI MIPA 3	3523	113.64	31 Persons
4	XI MIPA 4	3663	118.16	31 Persons
5	XI MIPA 5	3754	113.75	33 Persons
6	XI MIPA 6	3467	119.55	29 Persons
7	XI MIPA 7	3566	115.03	31 Persons
8	XI IIS 1	3051	117.34	26 Persons
9	XI IIS 2	2951	118.04	25 Persons
10	XI IIS 3	3197	118.40	27 Persons
11	XI IIS 4	3202	123.15	26 Persons

Notes: MIPA = *Matematika dan Ilmu Pengetahuan Alam* or Mathematics and Natural Sciences; and IIS = *Ilmu-ilmu Sosial* or Social Sciences.

Table 2:
Academic Self-Concept Profile of Class XI Students at the SMAN 4 Bandung in Academic Year 2019/2020

Category	Frequency	Percentage (%)
Positive academic self-concept.	178 Students	56
Negative academic self-concept.	142 Students	44
The average value of students' academic self-concepts.		117

or Public Senior High School) 4 Bandung, West Java, Indonesia, in the academic year 2019/2020, with 320 students divided into two majors, namely MIPA (*Matematika dan Ilmu Pengetahuan Alam* or Mathematics and Natural Sciences) and IIS (*Ilmu-ilmu Sosial* or Social Sciences), in which MIPA with 7 classes, while IIS with 4 classes.

The method of sampling in this study is a way of opportunity or probability sampling, that is providing equal opportunities for all populations to be sampled, with class sampling techniques or cluster random sampling (Williams, 2007; Creswell, 2012; and Alvi, 2016). Based on the explanation above, the researcher chooses two classes that will be used as research samples, with details in the table 1.

The sample that has been determined must have the same characteristics, as in the case of the students' initial abilities before being treated. To see the students' initial abilities before being given treatment the researchers used a number of scores and averages (Williams, 2007; Creswell, 2012; and Alvi, 2016). Both classes have nearly the same number of scores and averages, so the

initial ability of the two classes is considered to be the same, Class XI MIPA (*Matematika dan Ilmu Pengetahuan Alam* or Mathematics and Natural Sciences) 2 with 29 students as a control class; and Class XI MIPA 6 with 29 students as an experimental class.

RESULTS AND DISCUSSION

General description of students' self-concept of students of class XI at the SMAN (*Sekolah Menengah Atas Negeri* or Public Senior High School) 4 Bandung, West Java, Indonesia, in 2019/2020 school year, students who have positive academic self-concept categories 178 students (56%) and students who are in the negative academic self-concept category 142 students (44%). The average score of academic self-concept of class XI students at the SMAN 4 Bandung in 2019/2020 Academic Year is 117. The score is in the category of positive academic self-concept. This shows that most of the XI grade students at the SMAN 4 Bandung in 2019/2020 Academic Year had a positive academic self-concept. See table 2.

The success of students in following the process of education and learning in schools

Table 3:
Difference Test Results of the Effects of Academic Self-Concepts on Experimental Classes and Control Class

		Levene's Test for Equality of Variances		t-Test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Academic Self- Concepts:	Equal variances assumed.	8.556	.006	-4.685	56	.000	-5.241	1.119	-7.482	-3.000
	Equal variances not assumed.	-	-	-4.685	42.855	.000	-5.241	1.119	-7.498	-2.985

is greatly influenced by their academic self-concept. If the academic self-concept is positive, the learning activities will be influenced in a positive direction. Conversely, if the academic self-concept is negative, it will be influenced in the negative direction, then the learning behavior will be influenced in the negative direction (Flowers, Raynor, Jr. & White, 2013:1; Apriyanti, 2016; and Yeung, Craven & Kaur, 2018).

This is reinforced by the opinion of H.W. Marsh, J.D. Relich & I.D. Smith (1983), and other scholars, that academic self-concept can make individuals become more confident and feel confident about their abilities, because the academic self-concept itself includes how individuals behave, feel, and evaluate their abilities (Marsh, Relich & Smith, 1983; Aryana, 2010; and Bauman, 2012).

A student is said to have a positive academic self-concept, then, will be challenged to maintain or improve the learning outcomes that have been achieved from the previous semester; and the student is more daring to show his/her ability in front of others, able to motivate other students to do work or assignments assigned to him/her, so that the results obtained are more optimal (Bauman, 2012; Sultra, Usodo & Pramudya, 2018; and Jepri *et al.*, 2019).

Conversely, if a student has a negative academic self-concept, sees him/her-self as a useless person, is lazy, does not want to be regulated, does not want to communicate with his/her classmates, and he/she does not have a high willingness to learn. The more negative the student's academic self-concept, the higher the cheating behavior. This shows that the

student has a distrust of his/her-own abilities and does not utilize his/her abilities optimally instead relying on others when in fact he/she is capable (Samiroh & Zidni, 2015; Arifah, 2016; and Jepri *et al.*, 2019).

From the example of negative academic self-concept behavior above shows that not all students use all their potentials and abilities optimally. When a student's academic self-concept is said to be positive, it will have an impact on educational settings; be more efficient in overcoming problems; diligent and more able to control study time; and more successful in learning activities (Green *et al.*, 2006:535; Jen & Chien, 2008:1; and Goldberg, 2014:22).

The Effectiveness of the Self-Directed Learning Model in Developing Student Academic Self-Concepts. The study was conducted to examine the effectiveness of the model of self-directed learning to develop academic self-concepts. This test by comparing the post-test and N-gain values in the two study classes. Testing is done by testing the average t-test of one party. The results of tests conducted with one-party t-test (independent sample t test) with the help of SPSS (Statistical Package for the Social Sciences) version 20. See table 3.

In testing to look for differences in the influence of academic self-concept with the model of self-directed learning in the experimental class with conventional learning in the control class used gain score data. The test is carried out using two test stages, namely: the variance similarity test and the average test. The variance similarity test refers to the statistical lavene test; while the average test uses a one-party t-test.

Test conditions if based on the results of the variance similarity test between the two sample groups are not the same, then the next step for the t-test refers to the values listed in the assumption that the variance column rows are the same, whereas if based on the results of the variance test, the two groups of samples are different; then, for the t-test refers to the values listed in the column assumptions that the variance is not the same.

Testing is done by comparing the probability value (sig.) obtained with α 0.05. If the probability value (sig.) $> \alpha$ 0.05, then, there is no significant difference; while the probability value (sig.) $< \alpha$ 0.05, then, there is a significant difference.

Based on the above table, it can be seen that the value of fcount is 8.556 with a probability (sig.) of 0.06. Probability (sig.) $0.06 > 0.05$ means that there is no difference in variance between the two sample groups. Thus, the average test (t-test) is done by referring to the numbers or values listed in the same assumption variance column line.

In the same variance assumption column row, it is known that the t-value is 4.685 with a probability value (sig.) of 0.000. Probability $0.000 < 0.05$, which means that there are significant differences between students who use the model of self-directed learning compared with students who use conventional learning. This shows that the academic self-concept with the model of self-directed learning in the experimental class is better than the conventional model in the control class. This means that the self-directed learning model is better than the conventional model.

This shows that the model of self-directed learning can have a great influence on students' academic self-concepts, because students have adequate self-direction characterized by students having initiative, independence, flexibility, and responsibility in learning, so as to have the ability to achieve better learning outcomes than before, and always felt confident in his/her academic abilities. This has an impact on social skills, where adolescents have good academic mastery can provide fame and self-esteem in their peers (Hurlock, 2004:220; Silen & Uhlin,

2008; and Jossberger *et al.*, 2018).

In addition, friends in the process of self-directed learning model are very important, because as partners in learning together and discussing, friends can be used as a tool to measure their abilities, because students who feel their abilities are less than their friends will try to study harder (Khvilon, 2002; Silen & Uhlin, 2008; and Jossberger *et al.*, 2018).

This is reinforced by research conducted by Suharnan & N. Hairina (2013), and other scholars, regarding Self-Concept Adversity Quotient and Student Learning Independence. The results showed that effective self-concept of learning independence was 59.90%. Thus, it can be concluded that the higher the self-concept possessed by students, the higher the student's learning independence. Through independence, students learn responsibly to achieve success in learning; while with positive self-concepts, students can increase their confidence in themselves, so that they can motivate students to become even better (Prihadi & Chua, 2012; Suharnan & Hairina, 2013; and Paolini, 2015).

Besides that students who have positive academic self-concepts will make students able to use all their potentials and abilities optimally by following the learning process well. This is reinforced by research conducted by Dian P. Permatasari *et al.* (2018), and other scholars, concerning the Relationship of Academic Self-Concepts and Achievement Motivation. The results show that there is a relationship between academic self-concept and achievement motivation (Sari, Taufik & Sukmawati, 2016; Permatasari, 2017; Permatasari *et al.*, 2018; and Lesmana, 2019).

This means that the better of academic self-concept of students, the higher the motivation for achievement. The research findings show that in general students have a good academic self-concept, because as many as 37.33% of students already have a view, but there are still students who feel their academic concept is not as good as 36%.

With students having positive self-concepts, they will avoid cheating behavior. This means that the more positive the student's academic self-concept, the lower the cheating behavior. Conversely, the more negative the student's

academic self-concept, the higher the cheating behavior. This shows that the student has a distrust of his/her own abilities and does not utilize his/her abilities optimally instead relying on others, when in fact he/she is capable (Rinn & Boazman, 2014; Samiroh & Zidni, 2015; and Lesmana, 2019).

In addition, Dian P. Permatasari *et al.* (2018), and other scholars, with someone having an academic self-concept will avoid feelings of anxiety facing the exam. Where through this self-directed learning model, students can identify their sources and learning strategies, so that they have the ability to achieve better learning outcomes than before, and always feel confident in their academic abilities (Sari, Taufik & Sukmawati, 2016; Permatasari, 2017; Permatasari *et al.*, 2018; and Lesmana, 2019).

This is confirmed by C.A. Wedemeyer (1971), as cited in Rusman (2018), self-directed learning needs to be given to students, so that they have the responsibility in organizing and disciplining themselves and in developing learning abilities of their own volition. This attitude needs to be owned by students, because it is a maturity characteristic of a student (Wedemeyer, 1971; Rusman, 2018:354; and Gresham, 2019).

Self-directed learning does not mean self-learning by alienating one-self from their study partners or teachers, but rather the learning process to improve abilities and skills that do not depend on the teacher, friends, or others in learning. Self-directed learning, students will first try to understand the content of the lesson that is read or viewed through the media view of listening (Silen & Uhlin, 2008; Rusman, 2018:355; and Gresham, 2019).

Even, if you get into trouble, then, students will ask questions or discuss them with friends or teachers. The task of the teacher in this model of self-directed learning is to become a facilitator, that is people are ready to provide the assistance needed by students, especially assistance in determining learning goals, choosing learning materials and media, and helping to solve difficulties that cannot be solved by students in the learning process (Timperley *et al.*, 2007; Thornton, 2010; and

Hossain, 2015).

If students have a negative academic self-concept, it will have an impact on social skills, where adolescents who have good academic mastery can provide fame and self-esteem within their peers. When the results of learning do not meet expectations will arise a sense of dissatisfaction with his/her-self and self-rejecting behavior, such as ignoring the lesson, working under the ability, especially on subjects that are not liked, and low achievers (Hurlock, 2004:220-221; García-Bacete *et al.*, 2014; and Gresham, 2019).

These students do not consider school as something fun, but as an experience that does not wear. Based on this, through the self-directed learning model can develop academic self-concepts in a positive direction by knowing the sources and learning strategies that are appropriate to their needs, so that they show an attitude of responsibility in learning and have the ability to achieve better learning outcomes than before. This has an impact on behavior in the learning process will always feel confident about their academic abilities, so that they show courage and confidence in front of their peers without being influenced by negative thoughts, so they can have an attitude of academic self-concept (Bucholz & Sheffler, 2009; Hossain, 2015; and Darling-Hammond *et al.*, 2020).

The results showed that the control class showed a significant effect of conventional learning on students' academic self-concepts, but the difference was not as great as in the experimental class with the model of self-directed learning. This is because students tend to be passive, that is students only listen, accept, store, and carry out activities that are in accordance with the information provided by the teacher (*cf* Rezaee & Mosalanejad, 2015; Sari, Taufik & Sukmawati, 2016; and Santosa, 2017).

The conventional approach is a teacher centered learning or the teacher is more dominant in learning activities. Learning methods conducted in the form of lecture, assignment, and question and answer. In the conventional model, the teacher plays a major role in determining the contents and sequence of steps in delivering the material

to students. While students listen carefully and note important points raised by the teacher, so that in this learning process, the teaching and learning is dominated by the teacher. This results in students being passive, because learning is dominated by teachers and do not get much feedback or tend to be unidirectional, consequently students are easily bored and lack initiative (Wibawa & Mukti, 1992:5; Mascolo, 2009; and Rütümman & Kipper, 2011).

A student is said to have a positive academic self-concept that will be challenged to maintain or improve learning outcomes that have been achieved from the previous semester, the student is more daring to show his/her ability in front of others and able to motivate other students to do work or assignments assigned to him/her, so that the results obtained are more optimal. Through the view of the teacher in the school, it will affect the academic self-concept of students in the school. The view given by the teacher is a very influential response to the formation of students' self concepts (Pudjiyogianti, 1995; Sultra, Usodo & Pramudya, 2018; and Fachmi *et al.*, 2019).

A positive response to students will affect student achievement. A teacher needs to develop a learning model that can improve student learning outcomes, especially related to the development towards positive academic self-concept. When viewed from the implementation of conventional learning, it is felt to be inappropriate because the teacher only provides unidirectional information to students and students are passive (Zumbrunn, Tadlock & Roberts, 2011; Hijriyah, Darmawan & Zamzami, 2018; and Fachmi *et al.*, 2019).

In addition, conventional learning can impact students lacking initiative and easily bored in learning, because in the learning process is dominated by the teacher; while the role of students is passive, because of the learning activities by listening to lectures, taking notes, and doing the tasks given by the teacher. Learning with a conventional approach puts the teacher as a single source (Subaryana, 2005:9; Lamb, 2007; and Yulia, 2013).

Conventional learning, according to A. Ahmadi (2005), and other scholars, is felt to

be less appropriate with the dynamics of the development of science and technology so rapidly, because in its application, learning is very teacher-centered, so that it feels less flexible in accommodating the development of competency material. This has an impact on the attitude of students who are sleepy or asleep in class, some are truant, because of the boring learning atmosphere (Ahmadi, 2005:53; Timperley *et al.*, 2007; and Lederman, 2020).

Based on the description above, students with a model of self-directed learning in the experimental class are better than students in the control class using conventional methods. So in developing students' academic self-concepts, the model of self-directed learning is superior compared to conventional learning models (*cf* Gibbons, 2002; Aziz *et al.*, 2014; and Putrayasa, 2017).

CONCLUSION ¹

Students who have positive academic self-concept categories are 178 students (56%) and students who are in the negative academic self-concept category are 142 students (44%). The average score of academic self-concept of class XI students at the SMAN (*Sekolah Menengah Atas Negeri* or Public Senior High School) 4 Bandung, West Java, Indonesia, in 2019/2020 Academic Year is 117. The score is in the category of positive academic self-concept. This shows that most of the XI grade students at the SMAN 4 Bandung, in 2019/2020 Academic Year, had a positive academic self-concept.

Students who have a positive academic self-concept means that students have perceptions about themselves and others about their ability to take part in lessons, achievements that individuals want to achieve in academia, both in class and at school; and

¹*An Acknowledgment:* I would like to express my gratitude and high appreciation to my Supervisors, namely: Dr. Nandang Budiman and Dr. Iding Tarsidi, both of them are the Lecturers at the Study Program of Psychology Education SPs UPI (School of Postgraduate, Indonesia University of Education) in Bandung, West Java, Indonesia. They have been patiently guiding and encouraging me to complete my studies and be able to write good scientific papers, in the form of theses. However, all the contents and interpretations in this article remain the responsibility of my own academic, and have nothing to do with the assistance that has been given by anyone to me.

how well their learning performance.

The model of self-directed learning can have a positive effect compared to conventional learning on the academic self-concept of class XI at the SMAN 4 Bandung in Academic Year 2019/2020. This can be seen in the difference in grades after pre-test and post-test in the experimental class with the model of self-directed learning with a value of 119.55 to 129.68; while in the control class with conventional learning in the pre-test and post-test 117.79 to 122.68. This shows that the model of self-directed learning can have a great influence on students' academic self-concepts, because students have adequate self-direction characterized by students having initiative, independence, flexibility, and responsibility in learning.

In the control class with conventional learning shows that there is a significant influence on the academic self-concept of students, but the difference is not as great as in the experimental class with a model of self-directed learning. This is because when viewed from the implementation of learning, it is considered not suitable to develop students' academic self-concepts are passive, because learning is dominated by teachers and does not get much feedback or tends to be unidirectional; consequently, students are easily bored, lack initiative.

In accordance with the conclusions above, it can be said that students with self-directed learning models in the experimental class are effective compared to students in the control class with conventional learning in developing the academic self-concept of class XI students at the SMAN 4 Bandung in Academic Year 2019/2020.

This research researching about the effectiveness of the model of self-directed learning to develop the academic self-concept of Class XI students at the SMAN 4 Bandung Academic Year 2019/2020. The implications of this model in the learning process of students are that students have adequate self-direction which is characterized by students having the initiative, independence, flexibility, and responsibility in learning, so that students have positive academic self-concepts shown by an attitude to continuously

improve learning outcomes achieved from previous semester, strong will and motivation in achieving academic goals reflected by their abilities, and involvement in participating in academic activities using various strategies in the learning process.

Based on the results of the study, there are a number of recommendations aimed at related parties, namely as follows:

For teacher: the design of the intervention program model of self-directed learning can be a reference as an effort to help students to develop academic self-concepts; when implementing the program the teacher needs to motivate students to want to participate in each stage of the activity optimally, especially in terms of filling out reflection sheets; and teachers can display positive academic self-concepts, so that students can imitate them and provide motivation for students to improve their academic self-concepts.

For next researcher: in carrying out intervention activities, it should be able to manage time to be more effective, use a special room so students can focus and follow activities more optimally, and be enthusiastic in filling out reflection sheets; for further researchers are expected to use more samples and are expected to be carried out at other levels of education such as elementary, junior high or vocational; and the next researcher can compare the general picture of academic self-concept based on gender, so that the result tends to be more dynamic and comprehensive.²

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²*Statement:* I, undersigned, certify that this article is my own scientific work. It is not the result of plagiarism, because the sources that I refer to and cite in the discussion, I include clearly and completely in the Bibliography or References. I have never submitted this article to be reviewed and published by other scientific journals. I am willing to be given an academic sanction, if what I have stated, later turns out, to be not in accordance with the applicable regulations.

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Students of SMAN 4 Bandung, West Java, Indonesia
(Source: <https://ask.fm/niisaa84/best>, 2/3/2020)

Education aims to develop the full potential of a person to become a complete human being. The most important thing is that actualization of potential can be obtained, if someone has a self-concept. The relationship between self-concept and current education can be seen in the purpose of education. The success of students in following the education and learning process in schools is greatly influenced by their academic self-concept. One method of learning that can be done by teachers in schools in developing students' academic self-concepts through the application of the SDL (Self-Directed Learning) model.