

## The Investigation of First Year University Students' Online Self-Directed Readiness Level

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**ABSTRACT:** There is an abrupt transition from traditional physical learning to online learning at universities and this has become a norm. Online self-directed learning readiness is a skill for the 21st century which should be possessed by all first-year university students for them to succeed with their online learning. Despite the attempts by various universities to adopt various Learning Management systems for online teaching and learning, first year university students are experiencing challenges with self-directed learning. Therefore, this study aims to investigate the online learning readiness of first year students at the University of Mpumalanga in South Africa. This university uses Moodle as its online Learning Management System. This is a quantitative, non-experimental study within a positivism paradigm. 150 students were randomly sampled and were enrolled for a Diploma in Agriculture programmed. A Self-Directed Learning Readiness Scale (SDLRS) questionnaire was used to measure the readiness level for students' SDL. The results reveal that more than two-thirds of the students have a medium self-directed readiness level with a total mean for all the questions of 2.91, a standard deviation of 0.79, and a variance of 0.77. This shows that first-year students are therefore not self-directed learners, which makes the transition to tertiary education difficult. This study is useful because assessing the level of readiness towards SDL among first year university students could help to introduce the modern method of student-centered teaching approach. The results of this study could assist universities to develop intervention strategies that will encourage self-directed learning.

**Keywords:** Moodle, self-control, self-directed learning, self-management.

**ABSTRAK:** Ada transisi mendadak dari pembelajaran fisik tradisional ke pembelajaran daring di universitas dan ini telah menjadi norma. Kesiapan belajar mandiri secara daring adalah keterampilan abad ke-21 yang harus dimiliki oleh semua mahasiswa tahun pertama agar mereka berhasil dalam pembelajaran daring mereka. Meskipun berbagai universitas telah berupaya mengadopsi berbagai sistem Manajemen Pembelajaran untuk pengajaran dan pembelajaran daring, mahasiswa tahun pertama universitas mengalami tantangan dengan pembelajaran mandiri. Oleh karena itu, penelitian ini bertujuan untuk menyelidiki kesiapan pembelajaran daring mahasiswa tahun pertama di Universitas Mpumalanga di Afrika Selatan. Universitas ini menggunakan Moodle sebagai Sistem Manajemen Pembelajaran daringnya. Ini adalah penelitian kuantitatif, non-eksperimental dalam paradigma positivisme. Sebanyak 150 mahasiswa yang diambil secara acak dan terdaftar dalam program Diploma di bidang Pertanian. Skala Kesiapan Belajar Mandiri (SDLRS) digunakan untuk mengukur tingkat kesiapan belajar mandiri mahasiswa. Hasilnya mengungkapkan bahwa lebih dari dua pertiga mahasiswa memiliki tingkat kesiapan belajar mandiri sedang dengan total rata-rata untuk semua pertanyaan sebesar 2.91, standar deviasi sebesar 0.79, dan varians sebesar 0.77. Ini menunjukkan bahwa mahasiswa tahun pertama bukanlah pembelajar mandiri, yang membuat transisi ke pendidikan tinggi menjadi sulit. Penelitian ini berguna karena menilai tingkat kesiapan terhadap belajar mandiri di kalangan mahasiswa tahun pertama dapat membantu memperkenalkan metode modern pendekatan pengajaran yang berpusat pada mahasiswa. Hasil

*penelitian ini dapat membantu universitas dalam mengembangkan strategi intervensi yang akan mendorong pembelajaran mandiri.*

**Kata kunci:** manajemen diri, Moodle, pengendalian diri, pembelajaran mandiri.

## INTRODUCTION

Most institutions of higher learning have adopted various Learning Management Systems to promote self-directed and active learning. Research indicates that most students admitted at universities are underprepared in terms of self-directed learning (Justus, Rusticus, & Stobbe, 2022). This is a problem because students who are not self-directed learners have a greater risk of failure when placed in the rich but complex environment of online learning. The advances in modern technology have provided a large amount of learning resources and information for university students and the rising demand for these students to be self-directed, independent, autonomous, and responsible for their own learning process (Du Toit-Brits, 2018). This is alluded to by Alharbi (2018) who argues that the 21<sup>st</sup> century in which we are living has brought and demanded modern learning approaches which require self-directed learning (SDL). Many universities have therefore changed the traditional lecture-based learning environments where teaching is lecturer-directed, and where there is no self-directed learning (Sibanda & Donnelly, 2014). With the adoption of Information and Communications Technology (ICT), lecture rooms are now being transformed to encourage students to decide how to study in such a way that they increasingly become less dependent on their lecturers. According to Makonye (2016) this promotes self-directed learning which in turn will help students to prepare for survival when they are out there on their own.

Many first-year university students from disadvantaged communities come from an environment where teachers provided them with summaries, handouts, and notes that they had to study for their tests and examinations. These students expect lecturers to provide them with all the teaching and learning resources. Studies indicate these students struggle to adjust to university learning environments where they are being increasingly encouraged to undertake self-directed learning (Alharbi, 2018). Concerns had also been raised about the ability of higher education to foster students' self-directed learning (Zainuddin & Perera, 2018).

The aim of this study was therefore to investigate the first-year university students' SDL readiness level. The university where this study was conducted has adopted Moodle as its Learning Management System (LMS). All the university courses and modules are offered through Moodle. The name Moodle is an acronym for Modular Object-Oriented Dynamic Learning Environment. Moodle was developed as a Learning Management system and Course Management System (CMS) software package to enable teachers to create online courses that encourage interaction and collaborative construction of learning content (Richards, 2015). This study sought to shed light on the experiences of students to get a broader picture of the nature of their self-directed learning practices at this university. In particular, the study sought to gain insight into the following main

research question: To what extent do students perceive themselves to have the necessary skills for self-directed learning?

This study is useful because assessing the level of readiness towards SDL among first year university students will help to introduce the modern method of student-centered teaching approach. This study has the potential to contribute to the theory and literature on Moodle self-directed and active learning at institutions of higher learning. The findings will hopefully enhance lecturers' instructional practices by providing actionable skills that will eventually help to promote and develop students' self-directed learning. The results of this study will assist universities to develop a student-centered curriculum that will encourage self-directed learning. Additionally, it may assist or motivate students who are not yet prepared or who lack confidence in SDL to develop their lifelong learning abilities throughout their time in universities and beyond.

## METHOD

This was a quantitative, non-experimental study within a positivism paradigm. The target population for this study was the first year Diploma in Agriculture students at a South African university (n = 250). 150 participants were randomly sampled. A Likert scale questionnaire was used to measure the readiness level for students' SDL. It contained 12 items which assess two variables, namely self-management (6 items), and self-control (6 items). Respondents provided their opinions about statements related to the SDLRS, ranging from '1 = strongly disagree' to '5 = strongly agree'. To ensure the content validity, the questionnaire was piloted and validated before being used in the actual study. To ensure the reliability of the questionnaire, the average Cronbach alpha was calculated for the questionnaire and was found to be above 0.74 (see table 1). Given that 0.7 is deemed as an acceptable reliability coefficient, the coefficient for this study suggests that the data gathering instrument had a measure of reliability.

**Table 1.** Cronbach's alpha for reliability of the SDLRS

Item No.	Item Subscale	Cronbach's Alfa
1 - 6	Self-Management	0,92
7 - 12	Desire for Mathematical Learning	0,92
12 - 18	Self-Control	0,93

All the data collected were analyzed using the Statistical Package for the Social Sciences (SPSS) version 21. Descriptive statistical analyses were employed to describe the normality distribution of the scores of the sample under investigation.

## RESULTS AND DISCUSSION

The analysis and discussion of data were done based on the rating criteria as suggested and recommended by Klunklin et al. (2010) as well as El Seesya, Sofar and Al-Battawi (2017).

**Table 2.** Percentage SDL rating (El Seesya, Sofar and Al-Battawi, 2017)

Percentage Score	Rating
< 50%	Low SDL
≥50% <75%	Moderate SDL
≥ 75%	High SDL

**Table 3.** Mean SDL rating (Klunklin *et al.*, 2010)

Mean score	Rating
Average score of from 1.00 - 1.50	extremely low degree of SDL
Average score of from 1.51 - 2.50	low degree of SDL
Average score of from 2.51 - 3.50	medium degree of SDL
Average score of from 3.51 - 4.50	high degree of SDL
Average score of from 4.51 - 5.00	extremely high degree of SDL

Table 4 displays the SDLRS visual statistical data of the respondents. This includes the number valid (N valid), number missing (N missing), mean, mode, standard deviation, and variance.

**Table 4.** SDLRS visual Statistical Data

Factor	Code	Sub factor	N valid	N missing	Mean	Mode	Std. deviation	Variance
Self-Management	SM1	I am self-disciplined	146	4	3.0342	3.00	.85027	.723
	SM2	I have good management skills	144	6	2.8819	3.00	.78888	.622
	SM3	I set time frames for my study	146	4	2.8151	3.00	.86306	.745
	SM4	I can be trusted to pursue my own learning	144	6	2.8611	3.00	.84134	.708
	SM5	I prefer to plan my own learning	145	5	2.9310	3.00	.85517	.731
	SM6	I am confident in my ability to search out information	141	9	2.9007	3.00	.88886	.709
Self-Control	SC1	I prefer to set my own learning goals	147	3	3.0136	3.00	.85196	.726
	SC2	I like to make decisions for myself	146	4	2.9452	3.00	.82863	.687
	SC3	I always set high personal standards	146	4	2.9041	3.00	.99189	.984
	SC4	I evaluate my own performance	145	5	2.8828	3.00	1.02404	1.049
	SC5	I can find out information for myself	146	4	2.8904	3.00	.84790	.719
	SC6	I prefer to set my own criteria on which to evaluate my performance	145	5	2.8138	3.00	.91277	.833

The overall data analysis as displayed in table 4 shows that the total mean for all the questions is 2.91, the mode is 3, the standard deviation is 0.79, and the variance is 0.77. In terms of the mean analysis criteria as provided by Klunklin *et al.* (2010), the data show that students have low self-management skills and display low self-concept skills in their learning. Students' modal choices show that most of them are undecided in terms of their self-management skills, and self-concept.

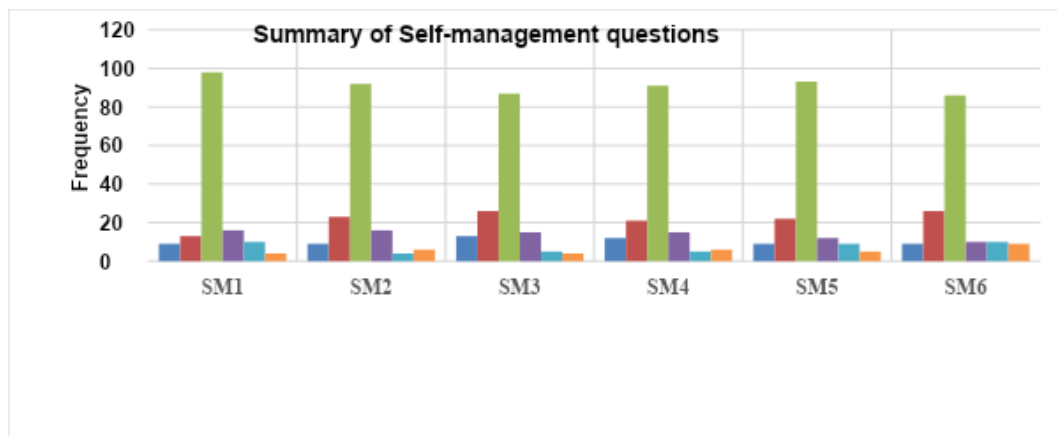
*“FINDINGS EMERGING FROM THE SUBSCALES OF THE QUESTIONNAIRE PER QUESTION”*

The questionnaire comprised two sub factors, which evaluated the self-directed learning readiness in students. These sub factors had six questions each.

The analysis below presents the data obtained from each question of the sub factor.

### Sub Factor 1: Self-Management

In this item students were asked to give their rank of opinions towards self-management skills. The subscale of self-management addresses the ability of students in the implementation of their set goals for learning, and the effective management of the appropriate resources for learning that are within the availability of students (Klunklin et al., 2010, p. 177). In this sub factor, students were asked to indicate how they manage themselves, with respect to self-discipline, management skills, time frames setting, the pursuit of own learning, own learning planning and confidence in the ability to search out information. The summary of their responses to all the questions in this sub factor are displayed in the bar graph (see Figure 1).



**Figure 1.** The summary of students’ responses of the “Self-Management” sub factor

The bar graph (Figure 1) displays the average responses for the whole self-management sub factor. Upon analyzing the data, it was revealed that on average, 10 students (6.7%) strongly disagreed that they have good self-management skills. 22(14.7%) disagreed, 91(60.6%) were undecided, 14 (9.3%) agreed and 7(4.7%) strongly agreed. The average missing value is 6 (4%).

According to the criteria provided by El Seesya, Sofar and Al-Battawi (2017) scores below 50 % show low SDL readiness, scores from 50% to less than 75% show moderate SDL readiness while scores from 75% show high SDL readiness. In the self-management sub factor only 21 students (14%) have good management skills. Many students therefore do not have the necessary self-management skills needed for self-directed learning.

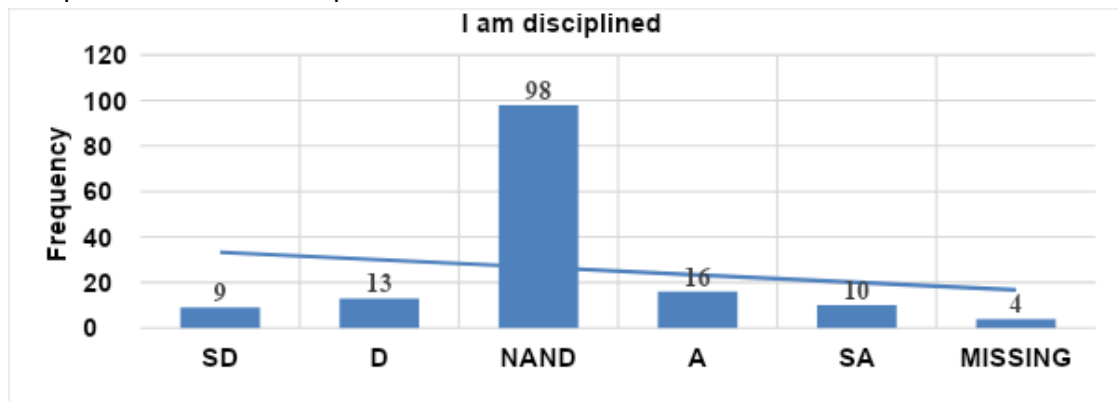
The mean score of the participants for self-management was 2.904, the standard deviation was 0.8479 and the variance was 0.7063 and the mode was 3. In terms of the mean analysis criteria as provided by Klunklin et al. (2010), the data also show that students have low self-management skills. Students’ modal choices show that most of them are undecided in terms of their self-management skills.

The mean data analysis also shows a relative standard deviation (RSD) of  $2.9 \pm 29.3\%$ . The 29.3% show a low relative standard deviation which means the participants' choices are closer to the mean.

Klunklin et al. (2010) recommended that mean scores of higher than 3.50 show high SDL readiness while scores less than 2.50 reflect low SDL readiness. The mean score for self-management was 2.904. Accordingly, the students who completed the questionnaire show inadequate level for self-management skills needed for self-directed learning. Low self-management skills are an indication that students have a negative attitude towards SDL (Singh & Paudel, 2020). These results are consistent with the findings of the study conducted by Örs, (2018). Örs, (2018) also found that students whose level of self-management skills is low, usually lack self-instruction strategies. According to Cho, Kim, and Choi, (2017), Self-instruction strategy is a self-regulation strategy that students can use to manage themselves as learners and direct their own behavior while learning. Mak and Wong (2018) define self-instruction as the ability of one to cognitively plan, organize, direct, reinforce, and evaluate one's own independent learning without the lecturer's prompting. It is therefore a self-management strategy that contributes to an individual's self-determination skills. Students need to manage themselves as learners and direct their own behavior to independently complete tasks.

*Self-management factor analysis: students' responses per question*  
*Question SM1: I am self-disciplined.*

The bar chart (Figure 2) provides a visual depiction of the "I am self-disciplined" distribution question.



**Figure 2.** The summary of students' responses of the "I am self-disciplined" sub factor

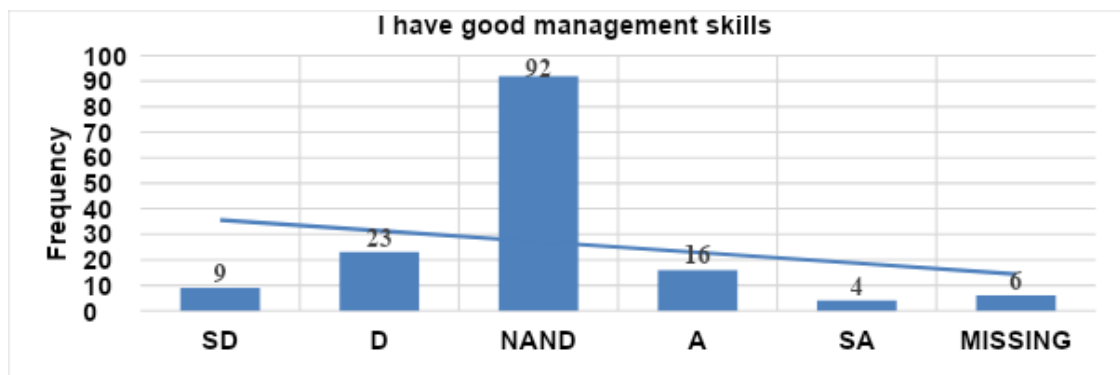
This question tested the students' ability to control themselves and to make themselves work hard or behave in a particular way without needing anyone else to tell them what to do. The data shows that the most frequent choice is NAND ( $n = 98$ ; 65%). El Seesya, Sofar and Al-Battawi (2017), provided a percentage criterion for analyzing SDL (see table 2). The analysis in terms of this criteria show that most students have a low level of good self-discipline skills needed for self-directed learning.

Research indicates that low levels of self-discipline lead to different problems in students' educational, social and personal life (de Ridder et al., 2012). Hofmann et al. (2013) on the other hand, argues that strong confidence and high level of self-discipline facilitates success, better achievements and reaching the goals which, in turn, improve the mood and makes students happier and gladder. In this regard, the researchers therefore argue that students with high levels of self-discipline much better are able to control their daily and routine academic activities, and as a result, usually avoid problems, cope with the tasks and overcome possible difficulties. Such students always try to find the most suitable solution to solve a problem, and their resistance in unfavorable conditions remains longer than those without self-discipline (Hofmann et al., 2013). In this regard, Sasson (2016) argues that students' achievements in university might be better predicted based on their self-discipline level rather than their marks. The possession of self-discipline leads to self-confidence and self-esteem, and consequently, to happiness and satisfaction. On the other hand, lack of self-discipline can lead to low academic performance and high failure rate.

The possession of self-discipline is an indication of self-control, which is a sign of inner strength and control of students' academic learning, their actions, and their reactions. Self-discipline gives students the power to stick to their decisions and follow them through, without changing their minds, and is therefore, one of the important requirements for achieving goals. Students who are self-disciplined have the ability to control themselves and to make themselves work hard or behave in a particular way without needing anyone else to tell them what to do.

*Question SM2: I have good management skills*

The bar chart (Figure 3) provides a visual depiction of the "I have good management skills" distribution question.



**Figure 3.** The summary of students' responses of the "I have good management skills" sub factor

This question tested the students' competency in managing their own learning in the process of self-directed learning. The data analysis of the "I have

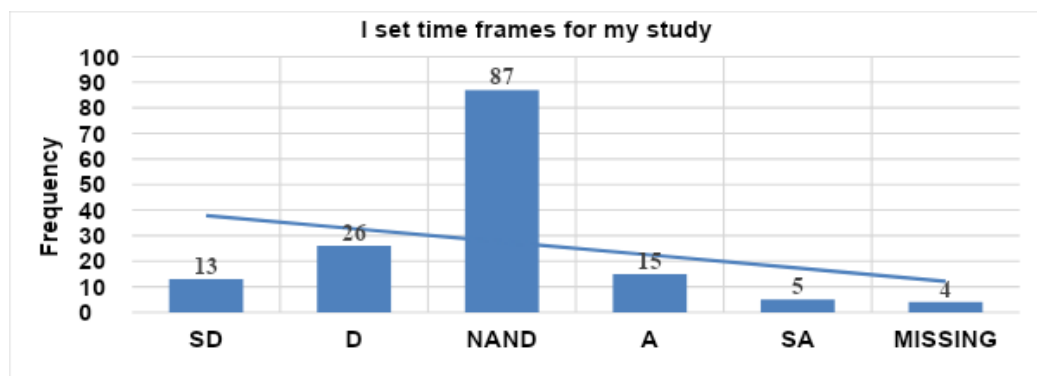
good management skills” sub factor shows that the most frequent choice is NAND (n = 92; 61.3%), and the least was “Strongly Agree” (n = 4, 2.7 %). The interpretation of the results in terms of the criteria as provided by El Seesya, Sofar and Al-Battawi (2017), show that only few students have good management skills needed for SDL. The trend line on the graph (see figure 3) shows that data is positively skewed towards the “agree and the strongly agree” options. This shows that students have a low level of good management skills needed for self-directed learning.

These findings are similar to the findings of the study conducted by Du Toit-Brits and van Zyl, (2017). Their study also found that first year university students have limited self-directed management skills. Most first year university students therefore often find the transition from school to university a difficult task. This is because high school is a teaching environment in which students acquire facts and skills. University is a learning environment in which students take responsibility for thinking through and applying what they have learned. Understanding the difference between high school and university is a big step towards making a successful transition into university learning which requires self-management skills.

Management of own learning helps students to become proactive, goal directed, and perpetual learners. It involves students taking responsibility for their own learning. Students’ responsibility occurs when students take an active role in their learning by recognizing, and they are accountable for their academic success. Students’ responsibility is demonstrated when students make choices and take actions which lead them towards their educational goals. Taking responsibility for their own learning boosts students’ self-esteem and self-worth. This is important because students learn more when they are active participants in their own learning.

*Question SM3: I set time frames for my study*

The bar chart (Figure 4) provides a visual depiction of the “I set time frames for my study” distribution question.



**Figure 4.** The summary of students’ responses of the “I set time frames for my study” sub factor

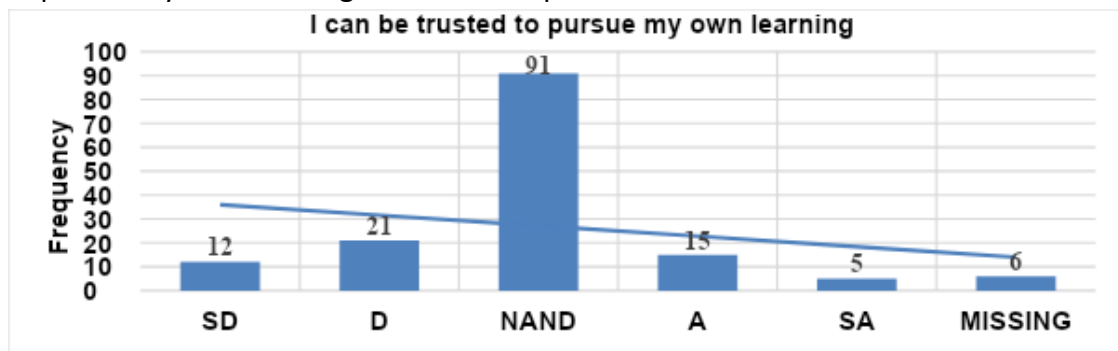


This question assessed the students' abilities Self-management focuses on the abilities to set strict time frames to be engaging adequately. The data analysis clearly shows that the most frequent choice on the Likert scale is NAND (N=87; 58%), followed by Disagree (N=26, 17.3%). In terms of the criteria provided by El Seesya, Sofar and Al-Battawi (2017), this analysis shows that most students do not consider setting time frames for their studies as important. The trend line on the graph (see figure 4) shows that data is positively skewed towards the "agree and the strongly agree" options. This is also an indication that students do not like setting time frames for their studies.

According to Faisal, Miqdadi, Mohammad and Nabil, (2014), time management is the coordination of tasks and activities to maximize the effectiveness of students' efforts when learning. Time management is therefore very important, and it may affect an individual's overall performance and achievements. Time management involves the process of organizing and planning how to divide your time between specific activities. Good time management is vital for students to succeed. Time management helps students to prioritize tasks and accurately judge the amount of time needed to complete them. Time management allows students to take control of their lives rather than follow the flow of others. This helps them to accomplish more, to make better decisions and study more efficiently.

*Question SM4: I can be trusted to pursue my own learning*

The bar chart (Figure 5) provides a visual depiction of the "I can be trusted to pursue my own learning" distribution question.



**Figure 5.** The summary of students' responses of the "I can be trusted to pursue my own learning" sub factor

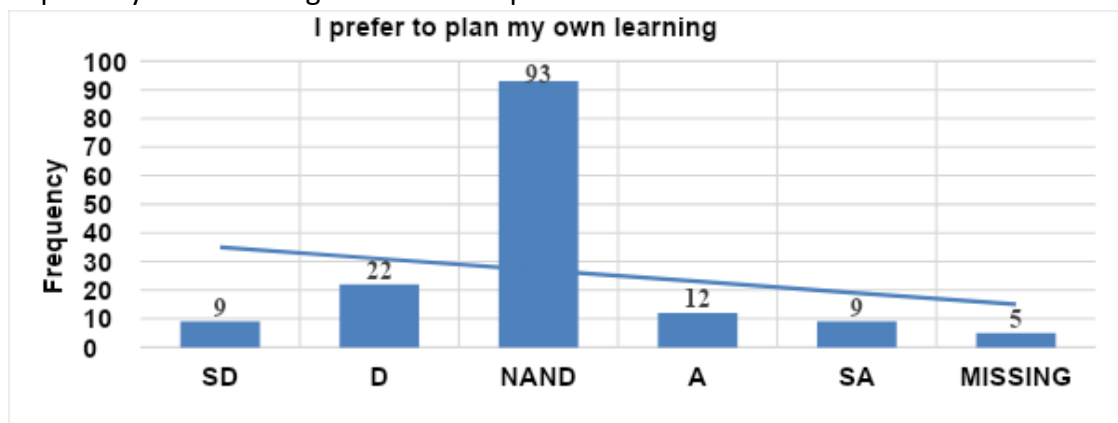
This question tested the students' confidence in pursuing their own learning. This includes taking the initiative when learning. Students' responses to this question show an inability to pursue their own learning. A glance at this graph clearly shows that the most frequent choice on the Likert scale is NAND (N=91; 60.7%), followed by Disagree (N=21, 14%). The least choice was "Strongly Agree" (N= 5; 3.3%). The trend line on the graph (see figure 7) shows that data is positively skewed towards the "Agree and the Strongly Agree" options. This is an indication

that most students do not prefer pursuing their own learning. The skill to pursue one's own learning is one of the prerequisites for self-directed learning.

The pursuit of one's own learning involves the notion of individual learning style. A learning style is an individual approach to learning based on strengths, weaknesses, and preferences. The researchers argue that knowing yourself as a learner is important if you want to achieve to the best of your ability. Consequently, if students know their learning styles, then they can study smarter, not harder.

*Question SM5: I prefer to plan my own learning*

The bar (Figure 6) chart below provides a visual depiction of the "I prefer to plan my own learning" distribution question.



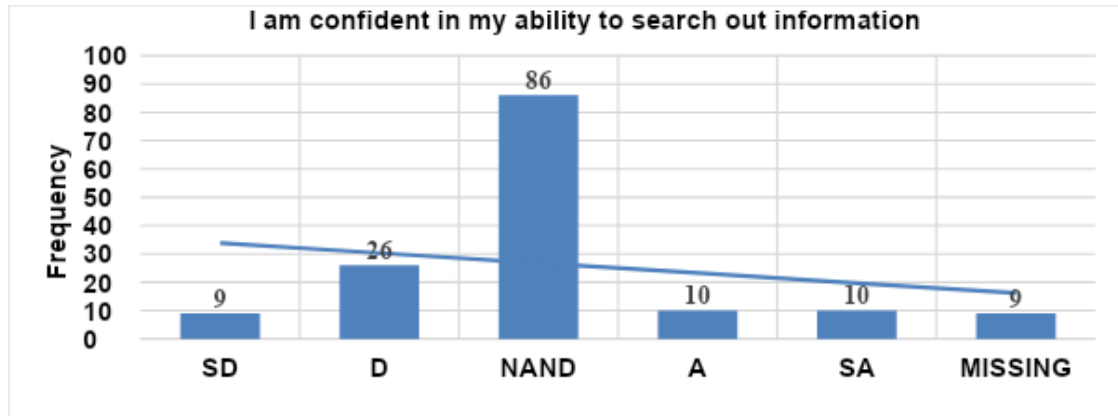
**Figure 6.** The summary of students' responses of the "I prefer to plan my own learning" sub factor

This question tested the students' ability in taking the initiative to set learning goals within a guided and supportive learning environment. Data analysis on this question clearly shows that the most frequent choice on the Likert scale is NAND (N=93; 62%), followed by "Disagree" (N=22, 14.7%). The least choice was "Strongly Disagree" (N= 9; 6%) and "Strongly Agree" (N= 9; 6%). The trend line on the graph (see figure 8) shows that data is positively skewed towards the "Agree and the Strongly Agree" options. This clearly shows that students do not prefer to plan their own learning as required of university students for self-directed learning.

Students who can plan their own learning are more metacognitively aware and are therefore successful learners. Metacognition, commonly referred to as 'learning about one's learning', includes two main areas, metacognitive knowledge, and metacognitive regulation (Machera, 2017). Metacognitive knowledge refers to the learners' knowledge of their own cognition and the strategies they have available to them. According to Machera (2017), metacognitive regulation comprises three important skills: planning, monitoring and evaluation. This will assist students in becoming self-regulated learners.

*Question SM6: I am confident in my ability to search out information*

The bar chart (Figure 7) provides a visual depiction of the “I am confident in my ability to search out information” distribution question.



**Figure 7.** The summary of students’ responses of the “I am confident in my ability to search out information” sub factor

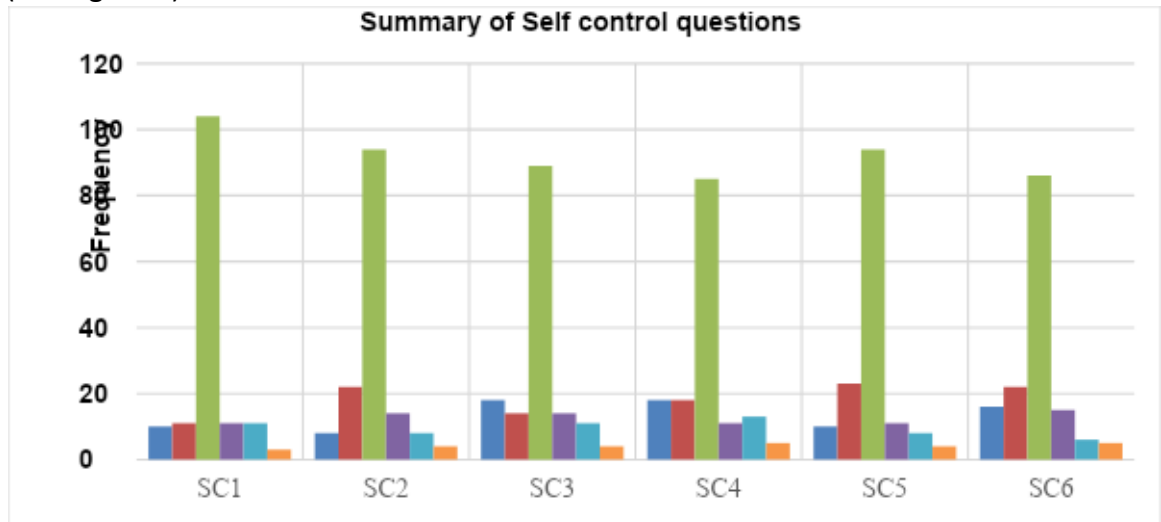
This question tested the students’ confidence in their ability to search for information on their own. By analyzing the data, it was revealed that most students are not confident to search information on their own. The highest number of selections was NAND (N=86; 57.3%). The trend line on the graph (see figure 9) shows that data is positively skewed towards the “Agree and Strongly Agree” options. This is also confirmation that most students are not confident in their ability to search out information. Self-directed learning requires students to be confident in their own ability to search for information.

The ability to search for information is linked to the notion of information literacy. Information literacy is the set of skills needed to find, retrieve, locate, analyze, and use information. Durodolu and Mojapelo (2020) argue that Information literacy is important for 21<sup>st</sup> century learners because it promotes problem solving approaches and thinking skills. Information literacy skills empower students with a set of abilities and critical thinking skills, which will assist them in becoming independent lifelong learners.

*Sub Factor 3: Self-Control (SC1-6)*

In this item students were asked to give their rank of opinions towards self-control skills. Self-control determines the ability of the students for self-monitoring and evaluation the achievement of set learning goals and outcome’s ability to self-evaluate and as a result determine their own learning goals and outcomes (Williams *et al.*, 2013, p. 104). In this sub factor, students were asked, on a 5-point Likert-scale, to indicate their preference to set their own learning goals, own decision making, setting of personal standards, own performance evaluation, finding information and setting their own criteria. The summary of

their responses to all the questions in this sub factor are displayed in the bar chart (see Figure 8).



**Figure 8.** The summary of students' responses of the "Self-Control" sub factor

The bar graph (Figure 8) above displays the average response for the whole "self-control" sub factor. Upon analysing the data, it was revealed that on average, 9 students (6%) strongly agreed that they have good self-control skills needed for self-directed learning. 12 students (8%) agreed, 14 students (9.3%) strongly disagreed, 18 students (12%) disagreed, and 92 students (61.3%) were undecided. The average missing values for the "self-control" sub factor is 5 (3.3%). The percentage of those who agreed is far below the moderate level as recommended by El Seesya, Sofar and Al-Battawi (2017). According to El Seesya, Sofar and Al-Battawi (2017) scores below 50 % show low SDL readiness, scores from 50% to less than 75% show moderate SDL readiness while scores from 75% show high SDL readiness.

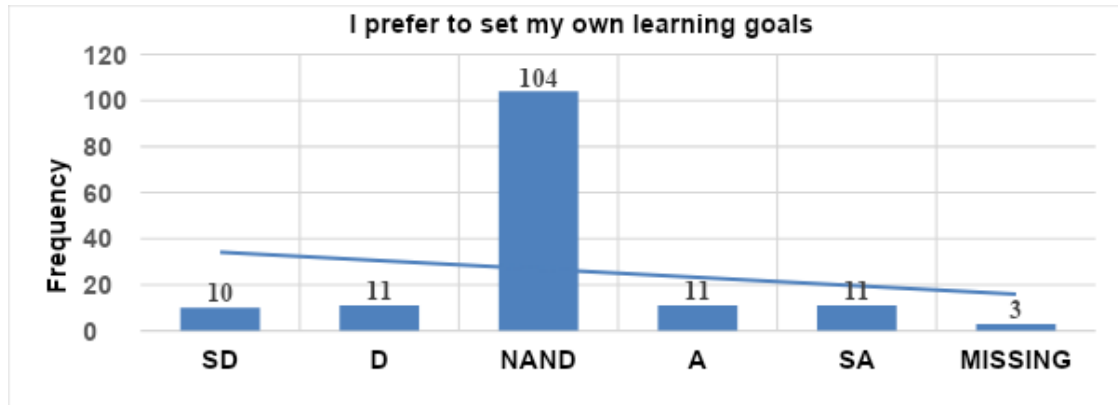
The mean score of the participants for "self-control" sub factor was 2.9083, the standard deviation was 0.9095 and the variance was 0.833 and the modal score was 3. The mean is less than the mode. In terms of the mean analysis criteria as provided by Klunklin et al. (2010), the data show that students have low self-concept skills in their learning. Students' modal choice shows that most of them are undecided in terms of their self-concept. The mean data analysis also shows a relative standard deviation (RSD) of  $2.9 \pm 31.03\%$ . The 31.03% show a low relative standard deviation which means the participants' choices are closer to the mean.

Klunklin et al. (2010) recommended that the mean scores of higher than 3.50 show high SDL readiness while scores less than 2.50 reflect low SDL readiness. As indicated in the previous paragraph, the mean score for self-control was 2.9083. Accordingly, the students who completed the questionnaire show inadequate level for the self-concept needed for self-directed learning. These results are consistent with other studies from other that first-year university students are not self-directed (Paul, Macedo-Rouet, Rouet & Stadler, 2017).

#### *Self-control factor analysis: students' responses per question*

*Question SC1: I prefer to set my own learning goals*

The bar chart (Figure 9) provides a visual depiction of the “I prefer to set my own learning goals” distribution question.



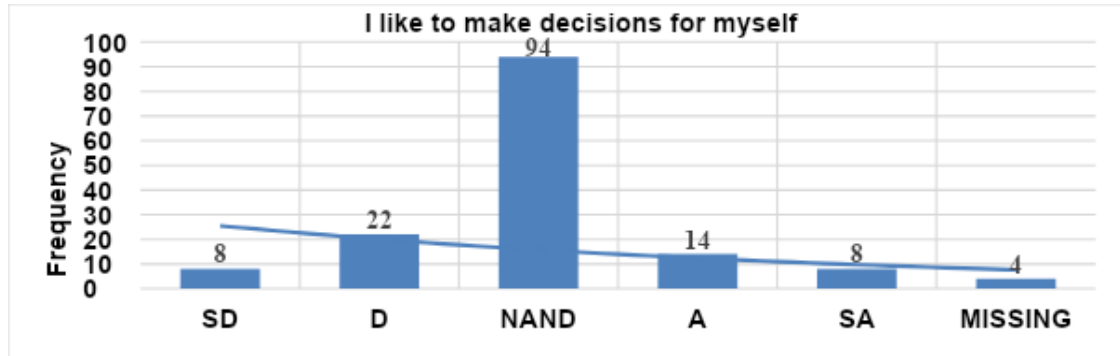
**Figure 9.** The summary of students’ responses of the “I prefer to set my own learning goals” sub factor

This question tested the students’ abilities to set their own learning goals. SDL needs students to set their own learning goals. Data analysis of this sub factor clearly shows that the most frequent choice on the Likert scale is NAND (N=104; 69.3%). The least choice was Strongly Disagree (N= 10; 6.7%). This means that most students do not prefer to set their own learning goals. University students whose teaching and learning is based on self-directed learning should be able to set their own learning goals.

Schippers et al., (2020) argue that students’ personal learning goals are the behaviors, knowledge, or understandings that students identify as important to their own learning. Previous research into the motivation and efficiency of students has indicated that students who set their own working goals tend to achieve more than when working on goals set for them by the teacher (Schippers et al., 2020). Students who set their own learning goals have more confidence to take on more challenging tasks, regardless of their ability. Their motivation to improve and master a task is improved and their self-esteem remains strong, even in the case of failure.

*Question SC2: I like to make decisions for myself*

The bar chart (figure 10) provides a visual depiction of the “I like to make decisions for myself” distribution question.



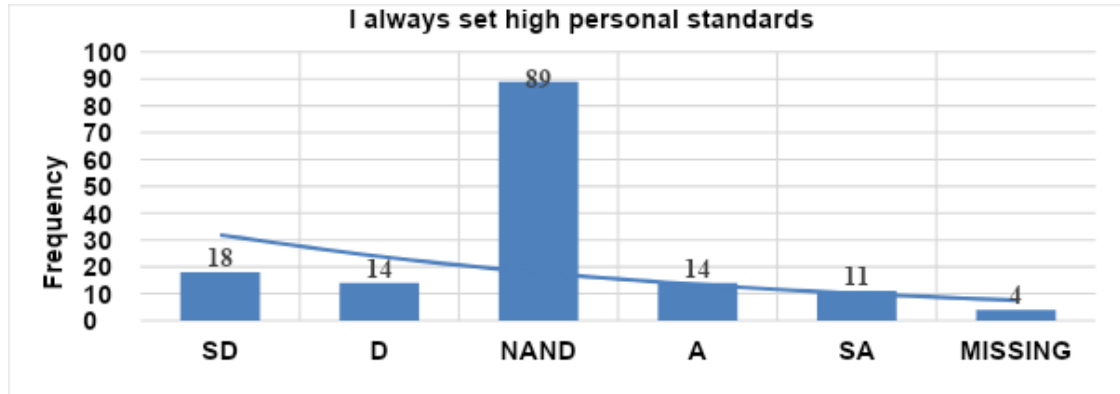
**Figure 10.** The summary of students’ responses of the “I like to make decisions for myself” sub factor

This question tested the students’ ability to make their own decisions. Self-directed students are expected to make independent decisions. Data-analyzed, it was revealed that the most frequent choice on the Likert scale is NAND (N=94; 62.7%), followed by “Disagree” (N=22, 14.7%). The least choice was Strongly Agree (N= 8; 5.3%). The bar graph trendline (see figure 19) shows that data is positively skewed towards the “Agree and the Strongly Agree” options. This means many students do not have the ability to make their own decisions.

According to Garrecht, Bruckermann and Harms (2018), decision-making is one of the central cognitive processes of human beings constituting a key component in formal teaching and learning. As such, decision-making in education is described as students’ ability to discuss issues from multiple viewpoints, whilst considering data as well as underlying personal and societal values of each option, and to conclude informed decisions. Universities are facing unprecedented challenges driven by accelerating globalization and a faster rate of technological developments. To navigate through such uncertainty, students will need to develop curiosity, imagination, resilience, and self-regulation so as to be able to make decisions for themselves. Hassel and Ridout (2017) argue that making personal decisions increases self-accountability skills. Personal decision making allows students to make their own mistakes and learn from them. Mistakes are viewed as springboards for learning. Students should therefore possess the knowledge and ability needed to make informed decisions. There is a tremendous need for good students to be decision makers for SDL to take place.

*Question SC3: I always set high personal standards*

The bar chart (Figure 11) provides a visual depiction of the “I always set high personal standards” distribution question.



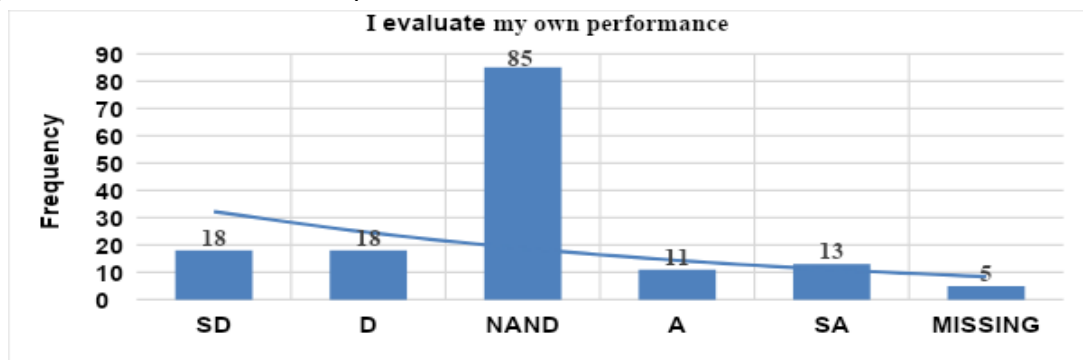
**Figure 11.** The summary of students’ responses of the “I always set high personal standards” sub factor

This question tested the students’ the ability to set their own high personal standards. In SDL, students are expected to be self-motivated to set their own high standards. Data analysis in this question reveals the most frequent choice on the Likert scale is NAND (N=89; 59.3%), followed by “Strongly Disagree” (N=18, 12%). The least choice was Strongly Agree (N= 11; 7.3%). The trendline on the graph (see figure 20) shows that data is positively skewed towards the “Agree and the Strongly Agree” options. This means many students do not always set high personal standards.

According to Machera (2017) standards define what students should know and be able to do. Standards therefore help students set targets and monitor their own achievement. Standards define the knowledge and skills students should possess at a critical point in their educational career. Standards serve as goals for student learning, guideposts for learning and a framework for self-evaluation and self-assessment. University students should therefore have the ability to develop their own personal standards. Students who set their own learning standards have more confidence to take on more challenging tasks, regardless of their ability. Their motivation to improve and master a task is improved and their self-esteem remains strong, even in the case of failure.

*Question SC4: I evaluate my own performance*

The bar chart (Figure 12) provides a visual depiction of the “I evaluate my own performance” distribution question.



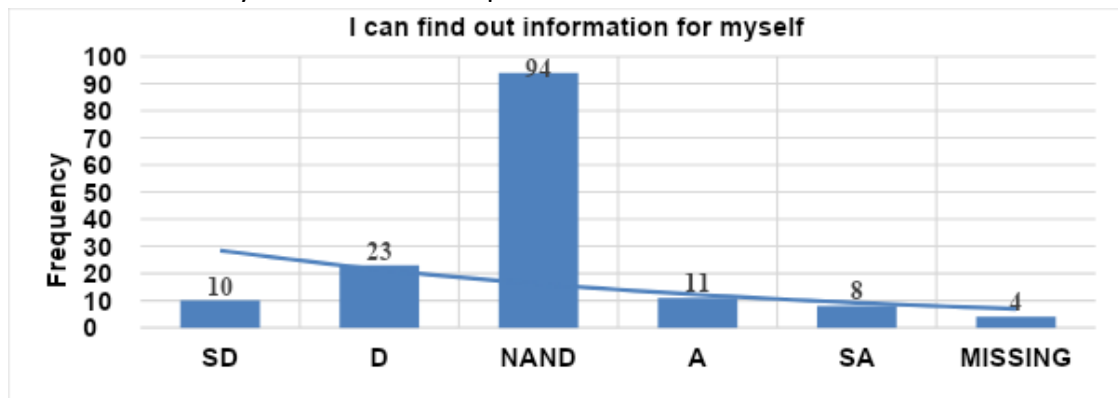
**Figure 12.** The summary of students’ responses of the “I evaluate my own performance” sub factor

This question tested the students' the ability evaluate own experience. In SDL, students are expected to evaluate their own performance. Like in the previous question, data analysis reveals that the most selected option was NAND (N=85; 56.7%). The bar graph trendline (see figure 21) shows that data is positively skewed towards the "Agree and the Strongly Agree" option. This means many students do not always evaluate their own performance.

Williamson and Seewoodhary (2017) argue that student evaluation is an essential element used by Higher Education Institutions. Student self-evaluation is a process to enable students to take responsibility for their own learning and prioritise what they think is important for them to be independent learners. Self-evaluation offers students a realistic chance of looking at their own self, without any claims of prejudice or bias. It may provide them with some new information about themselves and acquaint them with some facts that they were unaware of earlier. Self-evaluation also helps in changing the role of students from a passive observer to an active participant. In order to become lifelong learners, students need to learn the importance of self-evaluation. When students evaluate themselves, they are assessing what they know, do not know, and what they would like to know. They begin to recognize their own strengths and weaknesses. After they self-evaluate, they will be able to set goals that they feel they can attain with the new knowledge they have about themselves.

*Question SC5: I can find out information for myself*

The bar chart (F13) provides a visual depiction of the "I can find out information for myself" distribution question.



**Figure 13.** The summary of students' responses of the "I can find out information for myself" sub factor

This question tested the students' the ability to find out information for themselves. Information seeking is one of the SDL skills. Data analysis clearly shows that the most frequent choice on the Likert scale is NAND (N=94; 62.7%), followed by "Disagree" (N=23, 15.3%). The least choice was Strongly Agree (N=8; 5.3%). The trendline on the graph (see figure 22) shows that data is positively

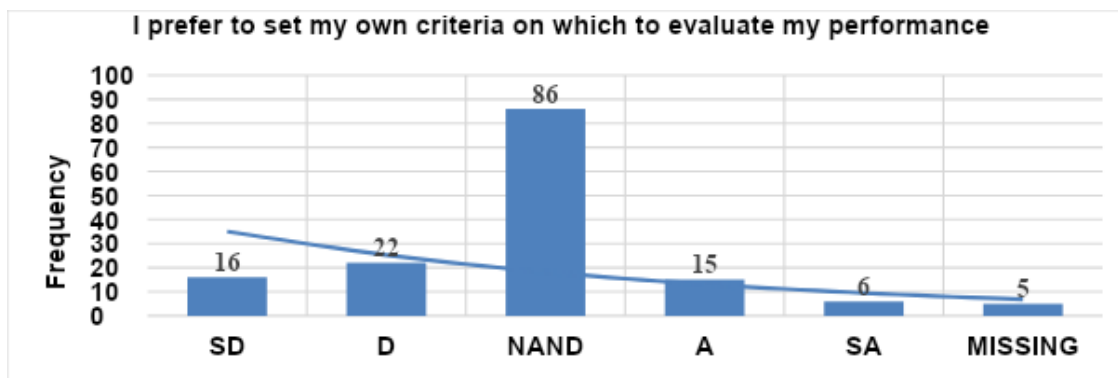


skewed towards the “Agree and the Strongly Agree” option. This means many students find it difficult to find information on their own.

Russell and Berry (2014) define self-study as a learning method where students direct their own studying - outside the classroom and without direct supervision. Since students can take control of what (and how) they are learning, self-study can be a very valuable way for many students to learn. The best strategy that university students can use to find information for themselves and to enhance their learning experience, is therefore through self-study. Using self-study, students can go beyond simply learning what their class textbooks and instructors teach them. By practicing self-study, they are encouraged to further explore topics they are interested in, developing stronger study skills as a result. Self-study also helps students build study skills that can boost their self-esteem. As students do more self-study, many become more confident learners. They can see themselves as an independent person who is able to learn new things without anyone helping them.

*Question SC6: I prefer to set my own criteria on which to evaluate my performance*

The bar chart (Figure 14) provides a visual depiction of the “I prefer to set my own criteria on which to evaluate my performance” distribution question.



**Figure 14.** The summary of students’ responses of the “I prefer to set my own criteria on which to evaluate my performance” sub factor

This question tested the students’ the ability to set their own criteria on which to evaluate their performance. Upon analysing the data in this question, it was revealed that the most frequent choice on the Likert scale is NAND (N=86; 57.3%), followed by “Strongly Disagree” (N=16, 10.7%). The least choice was Strongly Agree (N= 6; 4%). The bar graph trendline (see figure 23) clearly shows that data is positively skewed towards the “Agree and the Strongly Agree” options. This means many students do not have the competency to set their own criteria on which to evaluate their performance.

By setting their own criteria, students can identify their own skill gaps, where their knowledge is weak. These students are able to see where to focus their attention on learning. They are able to set realistic goals, revise their work,

and track their own progress. This process will help students stay involved and motivated and encourages self-reflection and responsibility for their learning. If students are able to set their own criteria on which to evaluate their performance, they will be provided with feedback which will serve as a basis for modifying or changing behavior towards more effective learning or studying habits.

## CONCLUSION

Data analysis for the whole questionnaire reveals that all the two sub factors had a mean of 2.91. Klunklin *et al.* (2010) recommended that the mean scores of higher than 3.50 show high SDL readiness while scores less than 2.50 reflect low SDL readiness. The mean degree in terms of the criteria provided by Klunklin *et al.* (2010) show that most students have a medium level of self-management and self-control skills. An inadequate or medium level of these skills will definitely have a negative impact on their learning (Russo & Russo, 2019).

The findings reveal that data is skewed towards the strongly agree option. This suggests an inadequate or low level of readiness for self-directed learning. These findings indicate a need to prepare students for their academic life and to be oriented in the approaches used in the teaching and learning process at university level and to engage them to make a shift from lecturer dependency to student-centered learning and to learning with understanding.

To be successful as university learners, first year students need to develop skills in self-directed learning. First-year students starting their education programs need to possess a range of cognitive and meta-cognitive skills to enable them to define their own learning goals, follow effective approaches to solve problems and evaluate whether learning goals were achieved. Unfortunately, many students do not have these skills. Studies indicate that many first-year students are not self-directed learners, and this makes the transition to tertiary education difficult (Du Toit-Brits & van Zyl, 2017).

During this transition phase, most students find it difficult to take control of their own learning. These students require skills that enable them to conduct and evaluate their own learning. This is self-directed learning. Morris (2019) is of the opinion that the development of SDL skills is an important objective of higher education, particularly in the first year. This is no easy task, however, as the adjustment to university life requires that first-year students deal with the academic and emotional shock of moving to an unfamiliar university environment (Maila & Ross, 2018).

University study requires students to take responsibility for their own learning, to be more self-directed, to make decisions about what they will focus on and how much time they will spend on learning both inside and outside the classroom (Hill *et al.*, 2020). The teaching and learning approach at the universities call for students to take initiative, responsibility, ownership of their own learning and become independent learners. The findings of this study clearly indicates that most of the students are dependent on lecturers and do not take responsibility for their own learning. This study therefore recommends a comprehensive

orientation programme on Moodle online learning modalities for first year university students.

Furthermore, it is recommended that classroom atmosphere, culture and conditions for SDL must be created to promote students' self-directedness regarding learning.

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