



Self-Directed Learning, Self-Efficacy in Learning, and Academic Motivation of Public Senior High School Students

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Authors' contributions

This work was carried out in collaboration between both authors. Author JDC contributed substantially on the study's conception, literature review, acquisition of data, analysis and interpretation, and on the derivation of conclusions and relevant recommendations. Author DVM contributed substantially on the study's conception, design, provided critical revisions on each part of the article as well as the final approval of the version to publish. Both authors read and approved the final manuscript.

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ABSTRACT

Aims: The absence of data complementing independent learning, which is vital in the pandemic-induced distance learning, propelled the conduct of study. The study aimed to assess Self-Directed Learning, Self-Efficacy in Learning, and Academic Motivation of Public Senior High School Students, and investigated what demographic variable may influence each. It also sought to determine the correlation between the constructs.

Methodology: The study utilized descriptive and correlational design. Respondents were the 332 Grade-12 students from the Schools Division of Cadiz City, School Year 2020-2021, determined using multi-stage random sampling. Data were generated using the Self-Directed Learning Inventory, Self-Efficacy in Learning Form, and Academic Motivation Scale – High School Version. Data were analyzed using mean, standard deviation, chi-square test of association, and Spearman rho rank correlation.

Results: There was no significant relationship between demographics and Self-Directed Learning, likewise with Academic Motivation. There was no significant relationship between sex and Self-Efficacy in Learning, however the latter had a significant relationship with family income ($P=.05$) and track ($P=.03$). There was a significant relationship between self-directed learning and self-efficacy in learning ($P=.000$), and between self-directed learning and academic motivation ($P=.000$).

Conclusion: Student demographics do not influence their disposition to engage in learning activities and with their perceived reasons to participate in it. Family income, together with the track where they belong, may influence their belief in their innate capabilities. Students who are internally driven to learn, and who have strong belief in their capabilities, will find all means to master competence on academics, even without the help of other people.

Keywords: Self-directed; self-efficacy; motivation; high school students; pandemic; learning; education.

1. INTRODUCTION

A recent survey to 20,000 students from grades 5 through 12, conducted by Youth Truth (a US-based non-profit research organization), showed that self-directed learning is the key to the success of distance learning amidst the pandemic [1]. Though self-directed learning is not investigated directly in K-12 education, studies relating to its constructs, such as self-efficacy in learning and academic motivation, contribute to better understand it [2]. Self-efficacy in learning and academic motivation are considered necessary learner-characteristics toward becoming self-directed [3,4].

The curriculum principles and standards of the Enhanced Basic Education Act of 2013, which intends to equip every learner in the country with essential competencies, skills, and values for lifelong learning [5], entails that self-directed learning is in the system yet remains dormant in research. On the brighter side, self-efficacy in learning and academic motivation are taking recognition in the academe. Self-efficacy in learning was found as vital teacher-characteristic in promoting the learners' academic involvement and performance [6]. Filipino students' academic motivation is mainly rooted in their families, with their positive relationship with peers and teachers as contributing factors [7,8].

Though constructs associated to self-directed learning have been scholarly investigated in the local context, self-directed learning itself remains dormant and unexplored. Self-efficacy studies are limited to teachers' characteristics, learners' subject-specific performance, and college readiness [6,9,10]. While a correlation between self-efficacy in learning and academic motivation has been empirically established in the local

context [11], the empirical correlation of these constructs to self-directed learning remains uninvestigated. Also, studies on academic motivation in the country mainly focus on its roots and tertiary education [7,8]. It is imperative to realize that scholars have acknowledged self-directed learning as central to lifelong learning [12], where lifelong learning is the ultimate goal of the present education system worldwide [13].

The dearth literature on self-directed learning in the local and basic education context, the demographics influencing it, and its empirical correlation to self-efficacy in learning and academic motivation called for a need of research, which in one way or another expound every Filipino educators' knowledge, understanding, and application for practice on these. Data generated by the study served as the basis in the development of Learning Support System Proposal (LSSP), envisioned to improve public senior high school students' learning characteristics, propelling the quality of education in the Schools Division, and meeting the United Nation's goal to promote lifelong learning.

1.1 Statement of the Problem

The absence of data that complements with developing independent learner necessary for distance learning in basic education [14], primarily propelled the conduct of the study. Accordingly, the study aimed to assess the degree of self-directed learning, degree of self-efficacy in learning, and extent of academic motivation of public senior high school students in the Schools Division of Cadiz City, School-Year 2020-2021, when they are taken as a whole and when they are grouped according to demographics (sex, family-income, and track). Also, it sought to determine their degree of self-

efficacy in learning in the areas of reading, studying, test preparation, note-taking, and writing. Furthermore, the study sought to assess the extent of their academic motivation in the domains of intrinsic motivation, extrinsic motivation, and amotivation.

1.2 Research Questions

Specifically, this study aimed to answer the following questions:

- 1.2.1 Is there a significant relationship between demographics and self-directed learning?
- 1.2.2 Is there a significant relationship between demographics and self-efficacy in learning?
- 1.2.3 Is there a significant relationship between demographics and academic motivation?
- 1.2.4 Is there a significant relationship between self-directed learning and self-efficacy in learning?
- 1.2.5 Is there a significant relationship between self-directed learning and academic motivation?

1.3 Hypotheses

- 1.3.1 There is a significant relationship between demographics and self-directed learning.
- 1.3.2 There is a significant relationship between demographics and self-efficacy in learning.
- 1.3.3 There is a significant relationship between demographics and academic motivation.
- 1.3.4 There is a significant relationship between self-directed learning and self-efficacy in learning.
- 1.3.5 There is a significant relationship between self-directed learning and academic motivation.

1.4 Review of Related Literature

1.4.1 Self-directed learning

Self-directed learning emerged as a concept following the early researchers' quest to better understand and guide adults in the learning process [15,16]. Knowles [17] definition of self-directed learning is most popularly used to this date, which goes:

“a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes.” (p. 18)

Self-directed learning may be viewed as an instructional process or personality trait [18]. The integration of self-directed learning as a process and personality trait is illustrated by the theoretical framework of Brockett and Hiemstra [19], also known as the Personal Responsibility Orientation (PRO) Model. Garrison [20] introduced another theoretical model of self-directed learning and named it the Self-Directed Learning Model. It differs from PRO since it removes the confusion of self-directed learning as a self-management for learning [21].

According to Lounsbury et al. [22], self-directed learning as a personality trait cannot be observed directly; however, it can manifest the following tendencies: academic achievement, self-efficacy, conscientiousness, epistemological beliefs, and internal control beliefs. For this reason, self-directed learning is considered intangible and ambiguous [19].

1.4.2 Self-efficacy in learning

In general, self-efficacy is defined as “the belief in one’s capabilities to organize and execute the courses of action required to manage prospective situations” [23, p.2]. According to Bandura [24], students' self-efficacy is informed by four sources, which are performance accomplishments, vicarious experience, social persuasion, and physiological indexes. Self-efficacy in learning pertain to student’s “personal cognitive appraisal” of his or her innate abilities and capacities whether or not he or she can succeed or achieve competence in a prospective academic task [25].

Studies show that self-efficacy in learning influences academic motivation, consequently influencing students' academic achievement [9,26]. This is supported by a local study made by Campos and Madrigal [11], who investigated the relationship between academic self-efficacy and academic motivation of high school students. More so, studies show that self-efficacy does influence the perceived college readiness and

success [10; KR Rymer, Unpublished doctoral dissertation].

1.4.3 Self-directed learning and self-efficacy in learning

The demonstration of Self-Efficacy in Learning is cited as one of the manifestations of self-directed learning [3,4,27]. Studies investigating the correlation between self-directed learning and self-efficacy in learning generally affirm a significant relationship between self-directed learning and self-efficacy in learning [28,29].

1.4.4 Academic motivation

Motivation, in general, is described as the driving force behind human actions [30]. In 1985, Self-Determination Theory (SDT), a macro theory integrating what needs are sought to be filled by human action, how motivation occurs, and how motivation levels may be altered, emerged. Authored by Edward Deci and Richard Ryan, the theory states that people are active organisms, therefore have the general tendency since birth towards psychological growth and development, "even in the absence of rewards" [31, p. 70]. Intrinsic motivation, therefore, is innate for all individuals, which, however, is curtailed by social pressures and responsibilities, especially after early childhood [31].

Recognizing what motivates students is of great importance to teachers for it brings about consequence to student's achievements [31,32]. Hence it must be every educational organization's priority [32]. In the Philippines, studies have found that academic motivation is mainly rooted in the families facilitated by peers and teachers [7,8] and influenced by academic self-efficacy [11].

1.4.5 Self-directed learning and academic motivation

According to Lounsbury et al. [27], self-directedness is associated with academic achievement. Studies show that such a correlation exists and is positive [33,34,35]. Predicating from studies that found the academic motivation to be positively correlated with academic achievement [36,37], a positive correlation between self-directed learning and academic motivation can be drawn.

Findings of Saeid and Eslaminejad [38], Heo and Han [39], and Adib et al. [40] revealed that a positive correlation exists between self-directed learning and academic motivation.

1.5 Theoretical Framework

This study theorizes that public senior high school students' demographics (sex, family income, and track) influence the degree of their self-directed learning [41-43], degree of their self-efficacy in learning [44-50], and extent of their academic motivation [37,51-54]. Also, the study theorizes that self-directed learning is influenced by self-efficacy in learning [28,29] and academic motivation [38-40].

The theoretical underpinning of the study is Garrison's [20] Self-Directed Learning Theory. It integrates three dimensions of learning, innumerable motivational dimension, self-monitoring dimension, and self-management. According to the theory, self-directed learning begins with the learner's inner drive to learn about something (motivational dimension). When the interest to learn is already present, the learner personally formulates learning goals and monitors his progress (self-monitoring dimension). Also, the learner makes personal adjustments necessary to achieve the learning goal (self-management dimension). The theory puts forth that the self-monitoring dimension and self-management dimension influence one another. Together, integration and manifestation of these dimensions entail that the learner is self-directed.

The Self-Directed Learning Theory's proposition that self-directed learning initially begins with intrinsic motivation supports the study's theory that public senior high school students' disposition to engage in learning activities is influenced by their perceived reasons to engage in learning activities. Also, the theory's premise that there is an interplay between learner's progress monitoring and adjustments for learning support the study's theory that public senior high school students' disposition to engage in learning activities is influenced by their belief in their capabilities to achieve competence in the academic task.

2. METHODOLOGY

2.1 Research Design

The study employed a descriptive and correlational design. These designs were found suitable for the study since it sought to describe the respondents' degree of self-directed learning, degree of self-efficacy in learning, and extent of academic motivation and if these constructs are

correlated to demographics and with one another.

2.2 Respondents

The respondents of the study were the 332 Grade 12 Senior High School (SHS) Students in

the Schools Division of Cadiz City during the School Year 2020 – 2021. To determine the sample size, Taro Yamane formula was employed. Arrival to sample size is illustrated below:

$$n = \frac{N}{1 + Ne^2} = \frac{1948}{1 + 1,948(0.05)^2} = \frac{1948}{1 + 1,948 (0.0025)} = \frac{1948}{1 + 1,948 (0.0025)} = \frac{1948}{5.87} = 332$$

To identify the respondents of the study, multi-stage random sampling was used. Multi-stage random sampling was employed to make the sampling procedure more practical, wherein a large population was divided into stages. In the study, three stages were employed and arranged in order as stratified sampling, cluster random sampling, and simple random sampling.

2.3 Research Instrument

The instrument consisted four parts, the respondent's profile, the assessment of self-directed learning, self-efficacy in learning, and academic motivation. Respondents' profile included their name (optional), sex, family income, and track.

To assess respondents' degree of self-directed learning, the study utilized the 10-item Self-Directed Learning Inventory (SDLI) developed by Lounsbury and Gibson [22], which measures self-directed learning as a personality trait in adolescents and adults [18]. It is a five-level rating scale with the following descriptions and interpretations based on the literature [22,27]:

Self-Directed Learning Scale

Scale	Mean Range	Verbal Description	Verbal Interpretation
5	4.21 - 5.00	Very High	The learner possesses an excellent disposition to engage in learning activities.
4	3.41 - 4.20	High	The learner possesses a good disposition to engage in learning activities.
3	2.61 - 3.40	Average	The learner possesses a fair disposition to engage in learning activities.
2	1.81 - 2.60	Low	The learner possesses a poor disposition to engage in learning activities.
1	1.00 - 1.80	Very Low	The learner possesses a very poor disposition to engage in learning activities.

To assess respondents' degree of self-efficacy in learning, the 57-item Self-Efficacy for Learning Form (SELF) developed by Zimmerman and Kitsantas [55] was utilized. SELF measures students' belief in themselves, that they can cope in adversity, remain composed, and stay focused on the academic goal or task in various phases of learning processes such as reading, studying, test-taking, note-taking, and writing [56]. In the instrument, respondents are to rate themselves from zero (0) to one-hundred (100), at intervals of 10. Therefore, there are eleven (11) alternatives, that is 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100. Using the literature [23,24,55], the following descriptions and interpretations were used in the study:

Self-Efficacy for Learning Scale

Scale	Mean Range	Verbal Description	Verbal Interpretation
	80.01%-100.00%	Very High	The learner personally believes that with his/her innate abilities and capacities, he/she can definitely achieve academic goals or competence in a particular academic task.
	60.01%-80.00%	High	The learner personally believes that with his/her innate abilities and capacities, he/she can probably achieve academic goals or competence in a particular academic task.
	40.01%-60.00%	Average	The learner personally believes that with his/her innate abilities and capacities, he/she may achieve academic goals or competence in a particular academic task.
	20.01%-40.00%	Low	The learner personally believes that with his/her innate abilities and capacities, he/she probably cannot achieve academic goals or competence in a particular academic task.
	0.00%-20.00%	Very Low	The learner personally believes that with his/her innate abilities and capacities, he/she definitely cannot achieve academic goals or competence in a particular academic task.

To assess respondents' extent of academic motivation, the 28-item Academic Motivation Scale – High School version (AMS-HS) developed by Vallerand et al. [57] was utilized. The instrument contained items on intrinsic motivation, extrinsic motivation, and amotivation. The respondents had seven alternatives to choose from, with the following descriptions and interpretations based on the literature [31,56]:

Academic Motivation Scale

Scale	Mean Range	Verbal Description	Verbal Interpretation
5	5.81 - 7.00	Very Great	The learner has extremely extensive perceived reasons to engage in academic activities.
4	4.61 - 5.80	Great	The learner has extensive perceived reasons to engage in academic activities.
3	3.41 - 4.60	Average	The learner has moderate perceived reasons to engage in academic activities.
2	2.21 - 3.40	Low	The learner has few perceived reasons to engage in academic activities.
1	1.00 - 2.20	Very Low	The learner does not have perceived reasons to engage in academic activities.

2.3.1 Reliability of the instrument

To determine the reliability of SDLI in the local norm, a trial - run was conducted on 30 Senior High School (SHS) students from the Schools Division of Cadiz City. The instrument was found reliable at Cronbach's alpha coefficient value of 0.82. The reliability of Self-Efficacy in Learning Form (SELF) and Academic Motivation Scale – High School version (AMS-HS) has already been established on the local norm by Campos and

Madrigal [9], with Cronbach's alpha coefficient value 0.855 and 0.804, respectively.

2.4 Data Collection Procedure

For respondents with access to the internet, google forms were used. For respondents who have no access to the internet, a hard copy was provided following the schedule of releasing and retrieval of Self-Learning Modules. After all the data were collected, it was tabulated and

analyzed by using the appropriate statistical tools.

2.5 Data Analysis Procedure

For the respondents' demographic profile, frequency count and percentage distribution were used.

For descriptive problems, mean was utilized. In addition, the standard deviation was employed to examine the magnitude of scatteredness of the respondents' responses.

For inferential problems, non-parametric statistical tools were employed since normality test results showed that the data were not normally distributed. Kolmogorov-Smirnov and Shapiro Wilk Test was used to determine normality distribution of data, which showed that data on self-directed learning [KS=0.108, $P=0.000$; SW=0.965, $P=0.000$], self-efficacy in learning [KS=0.051, $P=0.035$; SW=0.982, $P=0.000$], and academic motivation [KS=0.094, $P=0.000$; SW=0.940, $P=0.000$] were not normally distributed. Considering these premises, chi-square test of association was utilized to determine the significant relationship between demographics and the constructs and Spearman rank correlation was utilized to determine the significant relationship between self-directed learning and self-efficacy in learning and self-directed learning and academic motivation.

3. RESULTS AND DISCUSSION

3.1 Profile of Respondents

Table 1 shows the demographic profile of respondents. In total, there were 332 Public

Senior High School Students who participated in the study. The figures imply that as one step into a Public Senior High School, it is most likely that majority of students they will meet are female (%=56.6) and come from low family income (%=66.3). Since the demographic profile in track emerged as a result of cluster sampling, it can be said that the offered strands in majority of the schools are under the TVL track (%=53.3).

3.2 Degree of Self-Directed Learning

Table 2 displays the degree of respondents' self-directed learning when taken as a whole and grouped according to demographics. As a whole, the degree of respondents' self-directed learning ($M=3.59$, $SD=0.65$) is "High". More so, it is noteworthy that regardless of their demographics, the degree of their self-directed learning belongs to the same area of the spectrum, which is "High".

Relative to literature, the findings show that public senior high school students possess adequate inquiry skills necessary to facilitate independent learning [2,57,58]. In addition, it is less likely that they experience anxiety and frustrations when facing challenging academic tasks [17].

By close examination of mean scores, the lower value was shown by respondents who are female ($M=3.58$, $SD=0.62$), from low family income ($M=3.56$, $SD=0.65$), and from TVL track ($M=3.53$, $SD=0.66$) compared to their counterparts. It suggests that, apparently, these groups of students are less likely to formulate their own goals and formulate steps to attain competence in a particular skill all by themselves, compared to their counterpart [17,19,27].

Table 1. Demographic profile of the respondents

Variable	frequency	%
Sex		
Male	144	43.4
Female	188	56.6
Income		
Low	220	66.3
High	112	33.7
Track		
Academic	155	46.7
TVL	177	53.3
Total	332	100.0

Table 2. Degree of self-directed learning

Variable	M	SD	Interpretation
Sex			
Male	3.60	0.69	High
Female	3.58	0.62	High
Income			
Low	3.56	0.65	High
High	3.64	0.66	High
Track			
Academic	3.66	0.64	High
TVL	3.53	0.66	High
As a Whole	3.59	0.65	High

Overall, while self-directed learning mean scores show relative differences between demographics, all of them fall on the mean range described as “High”. It suggests that irrespective of Public Senior High School Student’s demographics, they generally possess a good disposition to engage in learning activities. It is reasonable to assume that public senior high school students generally possess the characteristics necessary for independent learning.

3.3 Degree of Self-Efficacy in Learning

Table 3 shows the degree of respondents’ self-efficacy in learning when taken as a whole and when grouped according to demographics. The degree of respondents’ self-efficacy in learning when taken as a whole (M=66.45, SD=15.41) is “High”. It can be said that, generally, public senior high school students are willing to participate in difficult academic tasks and are willing to exert extra effort and resources to succeed in it [26]. Also, they take failures as an opportunity to better their selves, not negatively [23].

The findings further suggests that public senior high school students are generally motivated to engage in academic activities [11,26]. Subsequently, they will most likely exhibit good academic performance and high academic achievement in their subjects [9,26]. It also implies that they personally believe that they possess the necessary skills, attitude, and characteristics that could help them in college, and that they generally look forward into pursuing higher education [10].

Notably, male respondents, from low-family income, and from TVL track, consistently showed lower mean score in all areas of self-efficacy in

learning. Correspondingly, they have low self-efficacy in learning when taken as a whole (Male: M=65.73, SD=15.44; Low-Family Income: M=65.37, SD=16.32; TVL: M=63.78, SD=15.68). It is important to recognize however even if differences in mean scores may be displayed by public senior high school students relative to their demographics, they generally personally believe that they probably can achieve competence in a prospective academic task.

3.4 Extent of Academic Motivation

Table 4 shows the extent of academic motivation of respondents when taken as a whole and when grouped according to demographics. As a whole, respondents’ academic motivation is “Great” (M=5.53, SD=0.91). It indicates that public senior high school students generally have extensive perceived reasons to engage in academic activities characterized by high interest to learn, high value for learning, and high engagement in the learning process.

As to demographics, the lowest mean score is exhibited by males (M=5.47, SD=0.92), from low-income (M=5.51, SD=0.91), and from TVL track (M=5.42, SD=0.95). These indicate that they generally have relatively lesser perceived reasons to participate in academic activities compared to their counterpart.

Among the types of motivation, extrinsic motivation showed the highest degree (M=5.85, SD=1.06), interpreted as “Very Great”. It can be said that public senior high school students’ external rewards extremely contribute to their engagement in academic activities [31,56]. The findings do cohere with findings of Galang [7], that the main source of Filipino students’ motivation is their parents and their family.

Table 3. Degree of self-efficacy in learning

Variable	Reading			Studying			Test Preparation			Note-Taking			Writing			Self-Efficacy in Learning		
	M	SD	Int	M	SD	Int	M	SD	Int	M	SD	Int	M	SD	Int	M	SD	Int
Sex																		
Male	64.84	15.60	H	65.44	15.30	H	67.56	15.56	H	65.18	16.39	H	66.69	17.09	H	65.73	15.44	H
Female	66.66	14.97	H	66.59	14.84	H	67.66	16.49	H	67.12	16.82	H	67.12	17.43	H	67.01	15.40	H
Income																		
Low	64.40	15.85	H	65.16	15.66	H	66.58	17.17	H	65.41	17.49	H	65.98	18.58	H	65.37	16.32	H
High	68.76	13.59	H	67.91	13.59	H	69.66	13.50	H	68.00	14.75	H	68.80	14.20	H	68.59	13.25	H
Track																		
Academic	68.96	14.09	H	68.92	14.68	H	71.02	14.69	H	69.12	16.15	H	70.53	15.59	H	69.51	14.55	H
TVL	63.16	15.74	H	63.61	14.94	H	64.64	16.67	H	63.79	16.71	H	63.78	18.05	H	63.78	15.68	H
As a Whole	65.87	15.25	H	66.09	15.03	H	67.62	16.07	H	66.28	16.64	H	66.93	17.26	H	66.45	15.41	H

Note: H=High

Though results in amotivation (M=4.64, SD=1.66) showed the lowest mean value compared to other areas, it is worth noting that it still belongs to the spectrum of scale interpreted as “Great”. It indicates that there remain extensive doubts, confusions, and a sense of having no perceived reasons to participate in academic tasks [56].

3.5 Relationship between Demographics and Self-Directed Learning

Table 5 shows the relationship between self-directed learning and demographics. Results show that there was no significant relationship between self-directed learning and sex [$\chi^2(4)=4.108, P=0.39$], family income [$\chi^2(4)=3.160, P=0.53$], track [$\chi^2(4)=5.991, P=0.20$]. Hence, the hypothesis relative to the demographics and construct investigated is rejected.

The results show that academic activities that lead to the enhancement of self-directed learning of public senior high school students shall be crafted without prejudice to sex [59]. The proposition of Gladwell [42] that family income may influence students' self-directed learning does not hold true for public senior high school students. The present study's findings that there is no interplay between track and self-directed learning do not as well cohere with the findings of Slater et al. [43].

3.6 Relationship between Demographics and Self - Efficacy in Learning

Table 6 shows the relationship between self-efficacy in learning and demographics. Results show no significant relationship between self-efficacy in learning and sex [$\chi^2(4)=0.945, P=0.92$]. Hence, hypothesis relative to sex is rejected. There was, however, a significant relationship between self-efficacy in learning and family income [$\chi^2(4)=9.556, P=0.05$], and between self-efficacy in learning and track [$\chi^2(4)=10.786, P=0.03$]. Hence, the hypothesis relative to family income and track is accepted.

The study supports the findings of earlier studies that sex does not influence students' self-efficacy in learning [60-63]. The findings agree with studies investigating family income and self-efficacy in learning [45-48]. It implies that students from low family income, aside from generally having inferior socio-economic status than their counterpart, may also generally have less social capital (peer support, kinship support, and support from general others), lower social self-efficacy, and lower assertiveness. As to self-efficacy in learning and track, the present findings are consistent with that of Villas [49], that belonging to a specific track does influence Filipino senior high school students' self-efficacy. The findings do cohere with the results of Chu et al. [64] that students from regular classes have significantly higher self-efficacy than those who are on a vocational track.

Table 4. Extent of academic motivation

Variable	Amotivation			Extrinsic			Intrinsic			Academic Motivation		
	M	SD	Int	M	SD	Int	M	SD	Int	M	SD	Int
Sex												
Male	4.40	1.67	A	5.80	1.09	G	5.50	1.11	G	5.47	0.92	G
Female	4.83	1.62	G	5.89	1.04	VG	5.51	1.05	G	5.58	0.90	G
Income												
Low	4.42	1.62	A	5.86	1.10	VG	5.54	1.07	G	5.51	0.91	G
High	5.07	1.64	G	5.85	0.98	VG	5.44	1.08	G	5.57	0.89	G
Track												
Academic	4.98	1.58	G	5.94	0.93	VG	5.60	1.04	G	5.66	0.84	G
TVL	4.34	1.67	A	5.78	1.16	G	5.42	1.10	G	5.42	0.95	G
As a Whole	4.64	1.66	G	5.85	1.06	VG	5.51	1.07	G	5.53	0.91	G

Note: A=Average, G=Great, VG=Very Great

Table 5. Relationship between Demographics and Self-Directed Learning

Variable	χ^2	df	P
Sex	4.108	4	0.39
Income	3.160	4	0.53
Track	5.991	4	0.20

Note: the relationship is significant when $p \leq 0.05$

Table 6. Relationship between demographics and self-efficacy in learning

Variable	χ^2	df	P
Sex	0.945	4	0.92
Income	9.556*	4	0.05
Track	10.786*	4	0.03

Note: *the relationship is significant when $p \leq 0.05$

3.7 Relationship between Demographics and Academic Motivation

Table 7 shows the relationship between academic motivation and demographics. Results indicate that there was no significant relationship between academic motivation and sex [$\chi^2(4)=2.415$, $P=0.66$], family income [$\chi^2(4)=0.783$, $P=0.94$], and track [$\chi^2(4)=8.720$, $P=0.07$]. In this regard, hypotheses relative to the correlation between these variables and construct are rejected.

The findings of the present study cohere with non-significance in academic motivation levels in both sexes with others [53,65]. The findings are inconsistent with literatures when it comes to the correlation between family income and academic motivation since they show that there is a weak positive correlation to a significant positive correlation between academic motivation and family income [37,66]. Perhaps, context and culture created this difference relative to what is known globally [7,8]. As to track, the findings cohere with the position of Schaffner et al. [54], that relativity of motivation to context must always be considered.

3.8 Relationship between Self-Directed Learning and Self-Efficacy in Learning

Table 8 shows the relationship between self-directed learning and self-efficacy in learning. Results show a significant relationship between self-directed learning and self-efficacy in learning

[$\rho(330)=0.481$, $P=0.000$]. Hence hypothesis on the correlation between self-directed learning and self-efficacy in learning is accepted.

The results support the findings of all studies investigating the correlation between self-directed learning and self-efficacy in learning, that a significant relationship exists between self-directed learning and self-efficacy in learning [28,29]. Hence, to improve public senior high school students' self-directed learning, educators should foster their self-efficacy in learning.

3.9 Relationship between Self-Directed Learning and Academic Motivation

Table 9 shows the relationship between self-directed learning and academic motivation. Results indicate a significant relationship between self-directed learning and academic motivation [$\rho(330)=0.359$, $P=0.000$]. Hence, hypothesis on the correlation between self-directed learning and academic motivation is accepted.

The findings are consistent with the premise that self-directedness is positively associated with academic achievement [33-35] and that academic motivation positively correlates with academic achievement [36,37]. The present study's findings put forth that if public senior high school students love what they are learning, they will take all means to learn it with no one else accountable in their progression other than themselves.

Table 7. Relationship between demographics and academic motivation

Variable	χ^2	df	P
Sex	2.415	4	0.66
Income	0.783	4	0.94
Track	8.720	4	0.07

Note: the relationship is significant when $p \leq 0.05$

Table 8. Relationship between self-directed learning and self-efficacy in learning

Variable	ρ	df	P
Self-Directed Learning x Self-Efficacy in Learning	0.481*	330	0.000

Note: *the relationship is significant when $p \leq 0.05$

Table 9. Relationship between self-directed learning and academic motivation

Variable	ρ	df	P
Self-Directed Learning x Academic Motivation	0.359*	330	0.000

Note: *the relationship is significant when $p \leq 0.05$

Anchored on Self-Directed Learning Theory of Garrison [20], the study claims that to significantly improve learners' self-directed learning, it shall be at the cost of improving self-efficacy in learning and academic motivation. It entails that when the learner acquires a strong belief in his innate abilities and capacities, he will have a good disposition when engaged in learning activities. Moreover, when the engagement to learn is driven by the learner's inner drive, his disposition in learning becomes formidable.

As to theoretical assumptions between demographics and the constructs, only the correlation between family income and track to self-efficacy in learning was confirmed. Apparently, there is an interplay between public senior high school students' family income, choice of track, and degree of self-efficacy in learning [45-50]. Interestingly, the findings confirmed the study's theory that public senior high school students' self-directed learning is influenced by their self-efficacy in learning and academic motivation. To be explicit, when the learner's cognitive appraisal of their capabilities is poor, they will not be capable of organizing and executing the course of actions that leads to the attainment of learning goals [28,29]. Moreover, if the interest to learn is not to satisfy oneself, learning remains as other- or environment-directed [38-40].

4. SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS

4.1 Summary of Findings

There was no significant relationship between demographics and self-directed learning. It indicates that whether the student is a male or female, from a high-income family or low-income family, from academic or TVL track, it does not significantly influence his or her disposition to engage in learning activities.

There was no significant relationship between sex and self-efficacy in learning, but there was a significant relationship between family income

and track to self-efficacy in learning. It entails that students' personal belief in their innate abilities and capacities to achieve academic goals or competence in a particular academic task is influenced by their financial status or concern and by the track where they belong.

There was no significant relationship between demographics and academic motivation. The findings suggest whether a respondent is a male or female, from a high-income family or low-income family, from academic or TVL track, it does not significantly influence the extent of his or her perceived reasons to participate in educational activities.

There was a significant relationship between self-directed learning and self-efficacy in learning and self-directed learning and academic motivation. This suggests that the disposition of respondents to engage in learning activities is influenced by the degree of their personal beliefs in their innate abilities and capacities to achieve academic goals or competence in a particular academic task and is also influenced by the extent of their perceived reasons to participate in educational activities.

4.2 Conclusion

Public senior high school students' disposition to engage in learning activities, together with their perceived reasons to engage in an academic activities cannot be attributed to their demographics. Their belief in their innate capacities and capabilities, however, is influenced by their family income and track. It implies that public senior high school students' family income, as well as the track where they belong, may boost or weaken their belief in their innate capacities and capabilities. Since the study empirically established that a correlation exists between self-directed learning and self-efficacy in learning, it follows that a student who has a strong belief in his capabilities is capable of mastering competence on a particular skill, subject, or activity with or without the help of other people. Since the study empirically established that a correlation exists between self-directed learning and academic motivation, it follows that a student who is internally driven to

learn something will find all means to master competence on it, even without the help of other people.

4.3 Recommendations

Given the findings and conclusions of the study, the following recommendations are suggested:

For school administrators, recognizing that self-directed learning influence self-efficacy in learning and academic motivation, and vice versa, shall integrate topics that emphasize these interplay in their academic meetings. Also, school administrators shall create programs that continually assist students' self-efficacy in learning relative to family income and track, consequently relieving their uncertainties as to their belief in their capabilities to achieve academic goals.

The teachers, as the forefront of instruction shall remain considerate on the possibilities as well as give due understanding on why students from a certain bracket of income and track may exhibit reluctance in apparently challenging academic tasks. Also, teachers shall recognize the interplay of self-directed learning, self-efficacy in learning, and academic motivation in the course of their instruction, which any action made to strengthen or weaken one construct will impact the other.

Future researchers, the influence of family income and track to self-efficacy in learning, though empirically found not influential self-directed learning and academic motivation in the context of the present study, still stirs an interest worthy of investigation. This is due to the fact that self-efficacy in learning was found to correlate with self-directed learning and that self-directed learning was found to be correlated with academic motivation. Perhaps, additional studies with these variables need to be conducted. This is to saturate the data whether the influence of family income and the track is limited to self-efficacy in learning, or that its influence may change according to context, or perhaps the volume of studies confirm that it does, or it does not, influence self-directed learning and academic motivation.

Since the study was limited to public senior high school students, future researchers may seek to investigate these constructs in junior high school students, private educational institutions, college

students, and even graduate school students, together with relevant demographic variables.

CONSENT

Due to COVID-19 protocols, parental consent form, orientation to respondents regarding the purpose and scope of the study, the nature and parts of the questionnaire, and most especially, the affirmation of their willingness to engage in the study were included in the introductory part of the instrument.

ETHICAL APPROVAL

The researcher primarily adhered to the ethical guidelines in the conduct of research set by the University of Negros Occidental – Recoletos, to where the researcher was enrolled to a Doctor of Philosophy Program during the course of the study's conduct. Furthermore, the researcher sought for the approval of panel of evaluators prior to study's implementation.

Upon approval of the panel of evaluators, the approval of the Schools Division of Cadiz City, through the Schools Division Superintendent and the Principal of the respective schools, was obtained. Then, the researcher coordinated with the school's Grade-Level-in-Charge also referred to as the enumerator, who assisted the researcher during data collection.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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