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A ROADMAP TO AUTONOMY: CREATING AND APPRAISING AN EDUCATIONAL BOOKLET FOR SELF-DIRECTED LEARNING IN NURSING

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Abstract
Contemporary educational trends emphasize a shift from artificial to deep learning, from passive to active learning, and from teacher-dependent instruction to self-directed learning (SDL). In the context of nursing education, this transformation is paramount for preparing students to deliver comprehensive care to diverse patient populations. SDL equips students with the individual capabilities to plan their learning, identify suitable approaches, and discern the necessary resources and tools. SDL is underpinned by intrinsic motivation, veracity, conscientiousness, persistence, and diligence, all of which foster the development of nursing professionals. This article delves into the critical role of SDL in nursing education, shedding light on its capacity to enhance students' knowledge, skills, and professional values, ultimately enabling them to provide holistic patient care.
Keywords: Self-directed learning, nursing education, intrinsic motivation, lifelong learning, student development.

Introduction

Trends of education drifts from artificial to deep learning, from passive to active learning as well from teacher-dependent learning to SDL. Nursing education is well designed to help student's preparation in providing the holistic care to various patients' populations by increasing students' knowledge, and improving their skills in the clinical areas that help them in developing their values professionally and this can be achieved by SDL **(Gagne, 2017).**

SDL is the individual capability of making a plan and recognize the approaches, resources and tools necessary for an individual's learning. The behaviors and characteristics associated with SDL are correlated to intrinsic motivation, veracity, conscientiousness, persistence and diligence **(Caruso, 2018).** There are a lot of terminologies that have been regarded for describing SDL such as autonomous learning, self-initiated learning, self-teaching, lifelong learning, self-plan learning, independent learning and self-direction in learning **(Chang, 2012).**

SDL is different from one person to another as well there are different degrees of learner SDL readiness in higher education. Readiness for SDL also differs significantly among learners in different higher education programs so specific attitudes, capabilities, and personality characteristics are required for SDL **(Alotaibi, 2016).**SDL readiness is defined as to what extent the learners have many characteristics such as their aptitude as well individuality that are essential for SDL **(Fisher & King, 2010).** The self-directed learners control as well are independent to choose what to learn and what is considered to be most important for themselves. In other words, all learners are able to learn but personality differences can affect their educational level including enthusiasm, worth, and honesty for learning (**Heacox, 2012).**

Self-directed learners are critical thinkers who contemplate their learning, personally evaluate their mastery of educational materials and their progress toward goal achievement and are talented to solve

problems effectively by successfully using their supra-cognitive capabilities. Self-directed learners are concentrated on the future, they are ready and active contributors in learning chances, and they are innovative and inspired. Furthermore, they are responsible for their own learning automatically through setting distinct learning goals and through the development and use of necessary study skills and self-interest and reassurance to successfully achieve their personal goals **(De Bruin & De Bruin, 2011).**

The educator in SDL is not just an authority figure for learners. He / she is sort of provider, mentor, expert, role model, reference and co-learner. The educator is not only a content carrier, but also the manager of the learning process, which aims to enhance learners' learning. Adult educators are alert about their position of strength and know that this strength is dynamic in the relationship with the learners, and that it depends on learning attitudes as well the learners needs **(Nagara, 2020).**

SDL may be affected by some factors such as culture and education, environment oflearning,learners' learning characteristics and the meaning-making learning process **(Merriam, 2018).**SDL can lead to more active learning if planned effectively. SDL can help learners to achieve complete understanding instead of duplication of their learning materials as well attain more thoughtful points of view regarding the subjects instead of having a superficial attitude. Furthermore, self-regulating learning allows the learners to be responsible for their learning as well actively participate in the process of learning. Furthermore, improves the learners' positive motivation as well enhances the sense of belonging to learning **(Shirazi, Sharif, Molazem&Alborzi, 2017).**

Significance of the study

Modern educational institutions are constantly facing different challenges as a result of evolving new health problems so it is necessary to use new knowledge and cost-effective interventions that are based on research **(Ahmed, Alostaz& AL-Lateef Sammouri, 2016).** Therefore, it is essential for all health-care professionals to taking the initiative to cope with these changes **(Fujino-Oyama, Maeda, Maru& Inoue, 2016).** Preparing and maintaining a future workforce able to deal with rapid changes is the aim of higher educational institutions **(Slater & Cusick, 2017)** and this can be accomplished through helping learners to be self-directed learners **(Glass, 2014)**. Specifically, in the discipline of nursing, importance of assessing SDL is increased as a result of the increased evidence available in addition to the difficulty of patients' problems as well the time dedicated to education lasting from three to four years around the world is limited. So, this study aims to design and validate educational booklet about self-directed learning for nursing students.

Aim of the study

This study aims to design and validate educational booklet about self-directed learning for nursing students.

Research Questions:

1: What is nursing students' perception about self-directed learning?
2: What is the level of nursing students' readiness for self-directed learning?
3: What is nursing students' preference for strategies to facilitate self-directed learning?
4: What is the experts' opinion (feedback) about the designed educational booklet?

Subjects and Methods

Research design:

Cross sectional research design was utilized.

Setting:

The present study was done at Faculty of Nursing, Mansoura University. It consists of eight academic nursing departments namely; Nursing Administration Department, Community Health Nursing

Department, Critical Care Nursing Department, Psychiatric and Mental Health Nursing Department, Medical-Surgical Nursing Department, Maternity and Gynecological Nursing Department, Pediatric Nursing Department, and Gerontological Nursing Department.

Study participants:

The participants of the study included two groups namely; Jury experts and nursing students.

Group 1: Jury experts (15) from different academic Faculty of Nursing Departments. Eight experts from Mansoura Faculty of Nursing, one expert from Damanhur Faculty of Nursing, two experts from Tanta Faculty of Nursing, four experts from Port Said Faculty of Nursing.

Group 2: Nursing students (300) from four levels choose by sample size from Faculty of Nursing, Mansoura University.

Tools of Data Collection:

Four tools were utilized for data collection.

Tool I: Students' perception about Self-Directed Learning Questionnaire: This tool was developed by the researchers. It involved two parts as follows:

Part I: Personal characteristics of nursing students: It covered items as gender, age, and academic year**.**

Part II: **Students' Perception about Self-Directed Learning:** This part was developed by researchers based on literature review **(Payne, Rocks, & Schaffner, 2014; Falk, Falk &Ung, 2016).** It aimed to assess nursing students' perception about self-directed learning. It consisted of 57 items categorized into six areas as follow: Selfdirected learning concept: 9 items, benefits of self-directed learning: 12 items, instructors' roles: 5 items, selfdirected learning skills for instructor: 11 items, students' roles: 6 items and self-directed learning skills for students: 14 items. Their responses were measured by three-point likert scale as follow (1=disagree, 2= uncertain and 3=agree).

Scoring system:

The total scores of students' perception about self-directed learning ranged from 57-171. It was categorized into three levels based on cut of point 60% as: - Low perception < 60% (57-125)

- Moderate perception 60% -75% (126-142)
- High perception > 75% (143-171)

Tool II: Self-Directed Learning Readiness Scale (SDLRS): This tool adopted from **Fisher, King & Teague, (2001).** This tool aimed to assess nursing students' readiness for SDL. It consisted of 40 items categorized into three areas as follow: Self-management: 15 items, desire for learning: 12 items and self-control: 13 items. Their responses were measured by five-point likert scale as follow (1=strongly disagree, 2=disagree, 3=unsure, 4= agree and 5= strongly agree).

Scoring system:

Total score on the scale ranged from 40-200. Above 150 score means high degree of SDLR while score below or equal to 150 means low level of SDLR **(Fisher, King &Tague, 2001).**

Tool III: Students' Preferences for Strategies to Facilitate Self-Directed Learning Questionnaire: This tool adopted from **(Tsay, 1999).** It aimed to assess nursing students' preferences for strategies to facilitate their SDL ability. It consisted of 39 items categorized into four areas as follow: Institutional support services: 11 items, instructional styles: 10 items, interpersonal interactions: 7 items and course design adaptations: 11 items. Their responses were measured by 6-point likert scale ranged from (1=very unimportant to 6=very important).

Scoring system:

The total scores of students' preferences for strategies to facilitate their SDL ranged from 39-234. It was categorized into three levels based on cut of point 60%:

- Low preferences< 60% (39-156)
- Moderate preferences 60% -75% (157-185)
- High preferences > 75% (186-234)

Tool IV: Educational Booklet Evaluation Checklist:

Evaluation checklist was developed by the researchers to evaluate educational booklet for its content and face validity. It consisted of 32 items. The first six items measure face validity as (the booklet is clear, correct, and scientific). The other 26 items measure content validity as (the topic is presented in sufficient detail, the objectives are specifically described, names of the developers of the booklet are stated), modification done based on their opinion. The academic experts and nursing students' responses were on 3-point likert scale ranged from (1-3) as (disagree =1, agree =2, strongly agree =3).

Scoring system:

When sub-items agreement is 60% or higher, it will be considered to be valid as well agreed upon **Jecklin, 2004).**

Validity and reliability:

First: Tools of data collection (I, II and III)was established for face and content validity via a panel of fifteen experts from different academic Faculty of Nursing departments. Eight experts from Mansoura Faculty of Nursing,one expert from Damanhur Faculty of Nursing, two experts from Tanta Faculty of Nursing, four experts from Port Said Faculty of Nursing who reviewed the tools for clarity, understanding, comprehensiveness, relevancy, ease for implementation and applicability and according to their opinions modifications were done. **Second:** Proposed educational booklet was established for face and content validity from the academic experts and nursing students with responses were on 3-point likert scale ranged from (1-3) as (disagree =1, agree =2, strongly agree =3). The first six items measure face validity as (the booklet is clear, correct, and scientific). The other 26 items measure content validity as (the topic is presented in sufficient detail, the objectives are specifically described, names of the developers of the booklet are stated), modification done based on their opinion. when sub-items agreement is 60% or higher, it will be considered to be valid as well agreed upon **(Jecklin, 2004).**

The study tools were tested to assess reliability via using Cronbach alpha test in Statistical Package for Social Science (SPSS) version 22. Cronbach's Alpha was (0.894- 0.855 and 0.918) for students' perception about SDL questionnaire, SDL readiness scale and students' preferences for strategies to facilitate SDL questionnaire respectively.

Pilot study:

It was carried on randomly selected (10%) of nursing students (30) to test the clarity, feasibility of the questions and the time needed to fill-in questions is from 20-30 minutes. Participants who shared in the pilot study were excluded from the total study sample. Based on the pilot study, necessary modification done by clarification and rewording.

Data collection: Through five phases:

First phase: It included developing the questionnaire (I, II and III) and tasting for face and content validity by academic jury experts in their work setting. Preliminary statistical analysis was done to obtain valid standards items.

Second phase: Assessing the reliability of the study tools using Cronbach alpha test in Statistical Package for Social Science (SPSS) version 22. It was (0.894, 0.855 and 0.918) for students' perception about SDL questionnaire, SDL scale and students' preferences for strategies to facilitate SDL questionnaire respectively. **Third phase:** The questionnaire was handled and filled by the nursing students to elicit their opinion. Collecting data from students by explaining to each student the aim of

the study and take his or her acceptance. Filling the questionnaire sheet took from 20–30 minutes. Data collection for nursing students was carried out through distribution of the questionnaire sheet to the participants and handed back to the researcher upon completion. **Fourth phase:** Developing educational booklet based upon the obtained data from the nursing students' responses about questionnaires (I, II and III).

Fifth phase: The developed booklet was distributed to (15) jury experts from different academic Faculty of Nursing departments for testing its face and content validity. Nursing students' perspectives (30) were investigated regarding the designed educational booklet. Any specific instructions and comments from the experts as well nursing students regarding evaluation of the booklet were documented and consideration in the formulation of the final booklet.

Ethical Considerations:

Ethical approval was attained from the Research Ethics Committee of the Faculty of Nursing – Mansoura University. A formal permission to conduct the study was attained from the Faculty of Nursing – Mansoura University after explanation of the aim of the study. An informed consent was attained from the participants after providing them with complete information about the study. Participants were informed that participation in research is voluntary and they were capable of withdraw from the study without responsibility at any phase. The collected data confidentiality was maintained as well the study sample privacy was guaranteed.

Statistical design:

The collected data were ordered, presented as well statistically evaluated via SPSS software (Statistical Package for the Social Sciences, version 22, SPSS Inc. Chicago, IL, USA). Quantitative data, the range, mean and standard deviation were calculated. Qualitative data, which describe a categorical set of data by frequency, percentage or proportion of each category, comparison between two groups and more was done via Chi-square test (☐2). For comparison between means of two groups of parametric data of independent samples, student t-test was utilized.

For comparison between more than two means of parametric data, F value of ANOVA test was calculated. Correlation between variables was evaluated via Pearson's correlation coefficient (r). Significance was adopted at $p<0.05$ for interpretation of results of tests of significance.

Results:

Table (1) Illustrated personal characteristics of the studied nursing students. This table shows that more than half of nursing students (67.3%) were female, with more than half of them (53.3%) aged from 18-19 years with mean±SD (19.63±1.37). Concerning academic years, a percentage of (29.7%) were in the first academic year, while (21.0%) of them in the third academic year.

Figure (1) Demonstrated total self-directed learning mean scores and ranks of the studied nursing student's perception. This figure shows that self-directed learning skills for student ranked (1) with mean±SD (2.55±0.46), while self-directed learning skills for instructor ranked (5) with mean±SD (2.42±0.52).

Figure (2) Demonstrated total perception level about self-directed learning among the studied nursing students. This figure shows that (55.7%) of them were high perception, while (17.0%) of them were low perception. **Figure (3)** Demonstrated total self-directed learning readiness mean scores and ranks among the studied nursing students. This figure shows that desire for learning ranked (1) with mean±SD (4.02±0.68), while self-management and self-control ranked (2) with mean±SD (3.96±0.71-3.96±0.67) respectively.

Figure (4) Demonstrated total self-directed learning readiness level among the studied nursing students. This figure shows that (70.0%) of nursing students were high readiness, while (30.0%) of them were low readiness for SDL.

Figure (5) Demonstrated preferences for strategies to facilitate self-directed learning mean scores and ranks among the studied nursing students. This figure shows that interpersonal interactions ranked (1) withmean ±SD (5.19±0.86), while institutional support services and instructional styles ranked (3) with mean ±SD (5.15±0.82- 5.15±0.81) respectively.

Figure (6) Demonstrated total preferences level for strategies to facilitate self-directed learning among the studied nursing students. This figure shows that (77.7%) of nursing students were high preference, while (5.7%) of them were low preference.

Table (2) Illustrated face and content validity of educational booklet about self-directed learning. The table shows that (76.7%) of nursing students strongly agree upon face validity of the educational booklet while, (23.3%) of them agree about it. Regarding content validity (73.3%) of nursing students strongly agree upon the educational booklet while, (26.7%) of them agree about it. The table shows that (80.0%) of jury experts strongly agree upon face validity of the educational booklet while, (20.0%) of them agree about it. Regarding content validity (73.3%) of jury experts strongly agree upon the educational booklet while, (26.7%) of them agree about it.

Table (1): Personal characteristics of the studied nursing students (No=300).

Personal characteristics	**The studied nursing students No= 300**	
	No	**%**
Gender:		
Male	98	32.7
Female	202	67.3
Age years:		
18-19	160	53.3
20-21	111	37.0
22-23	29	9.7
Range Mean±SD	18-23 1 9.63±1.37	
Academic year:		
First level	89	29.7
Second level	73	24.3
Third level	63	21.0
Fourth level	75	25.0

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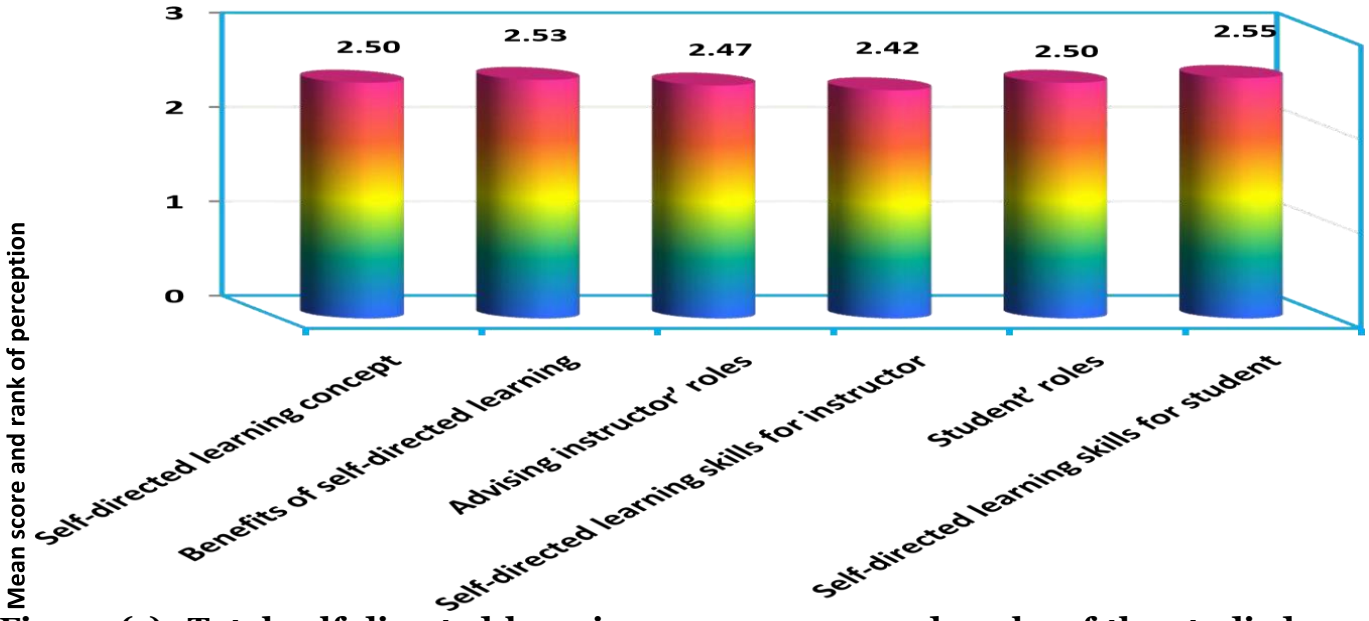
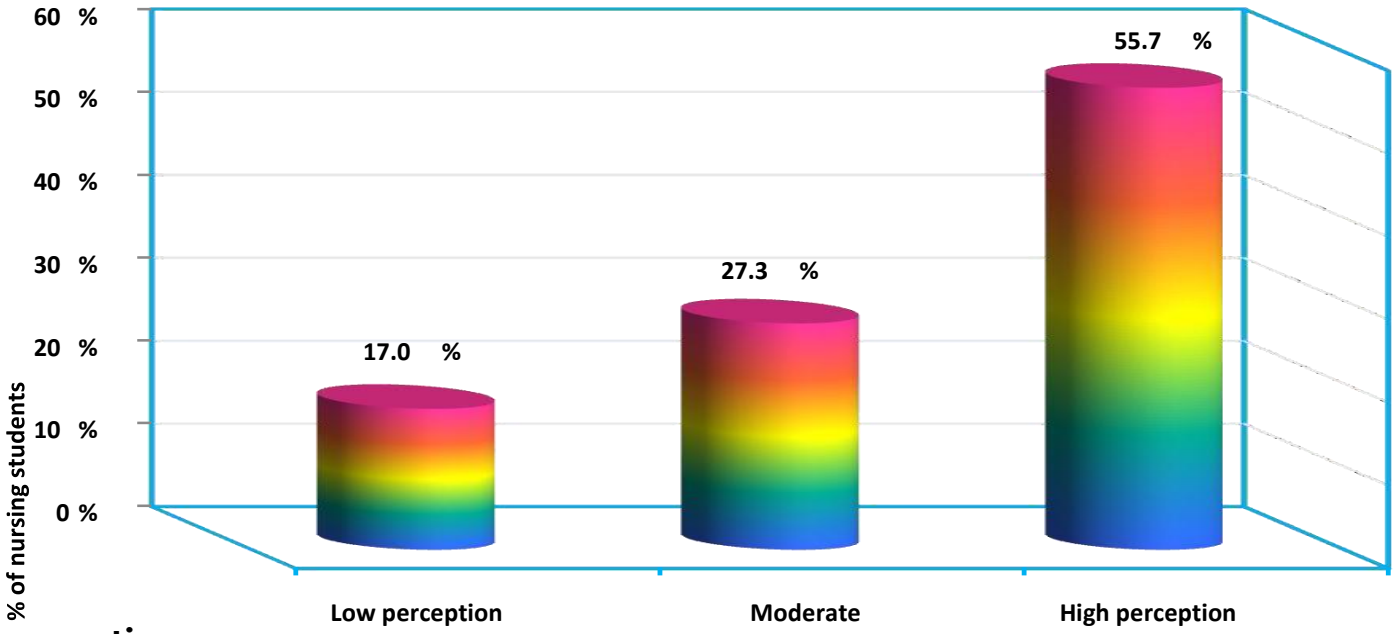


Figure (1): Total self-directed learning mean scores and ranks of the studied nursing student's perception (No=300).



perception

Figure (2): Total perception level about self-directed learning among the studied nursing students (No=300).

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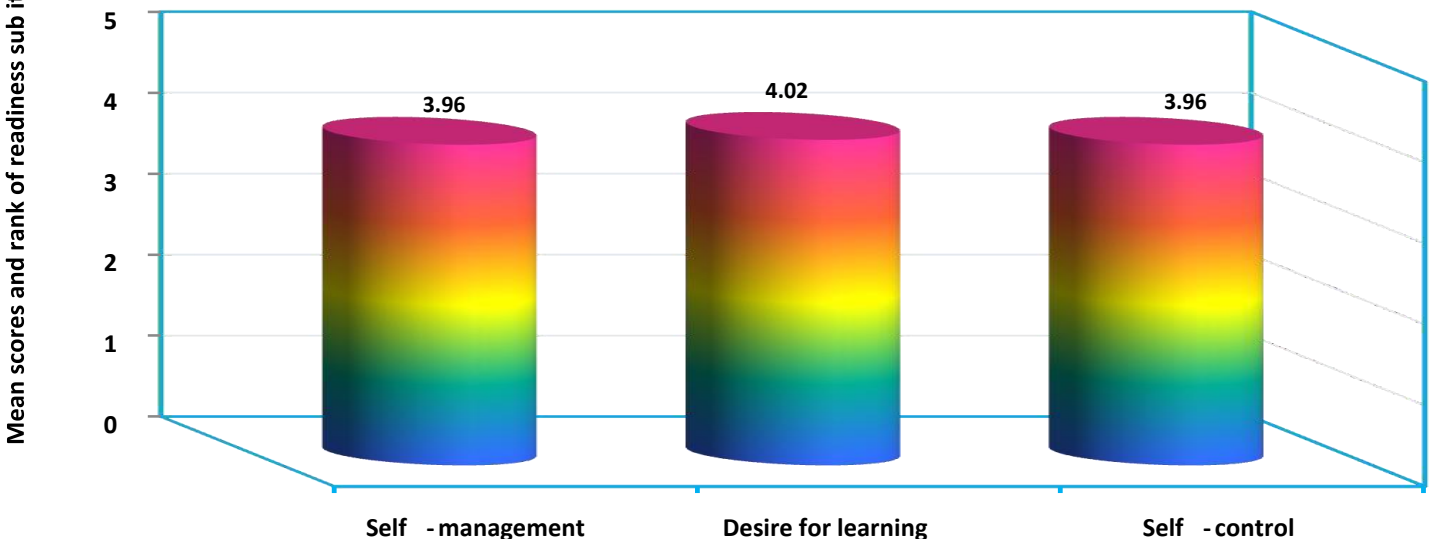

Figure (3): Total self-directed learning readiness mean scores and ranks among the studied nursing students (No=300).

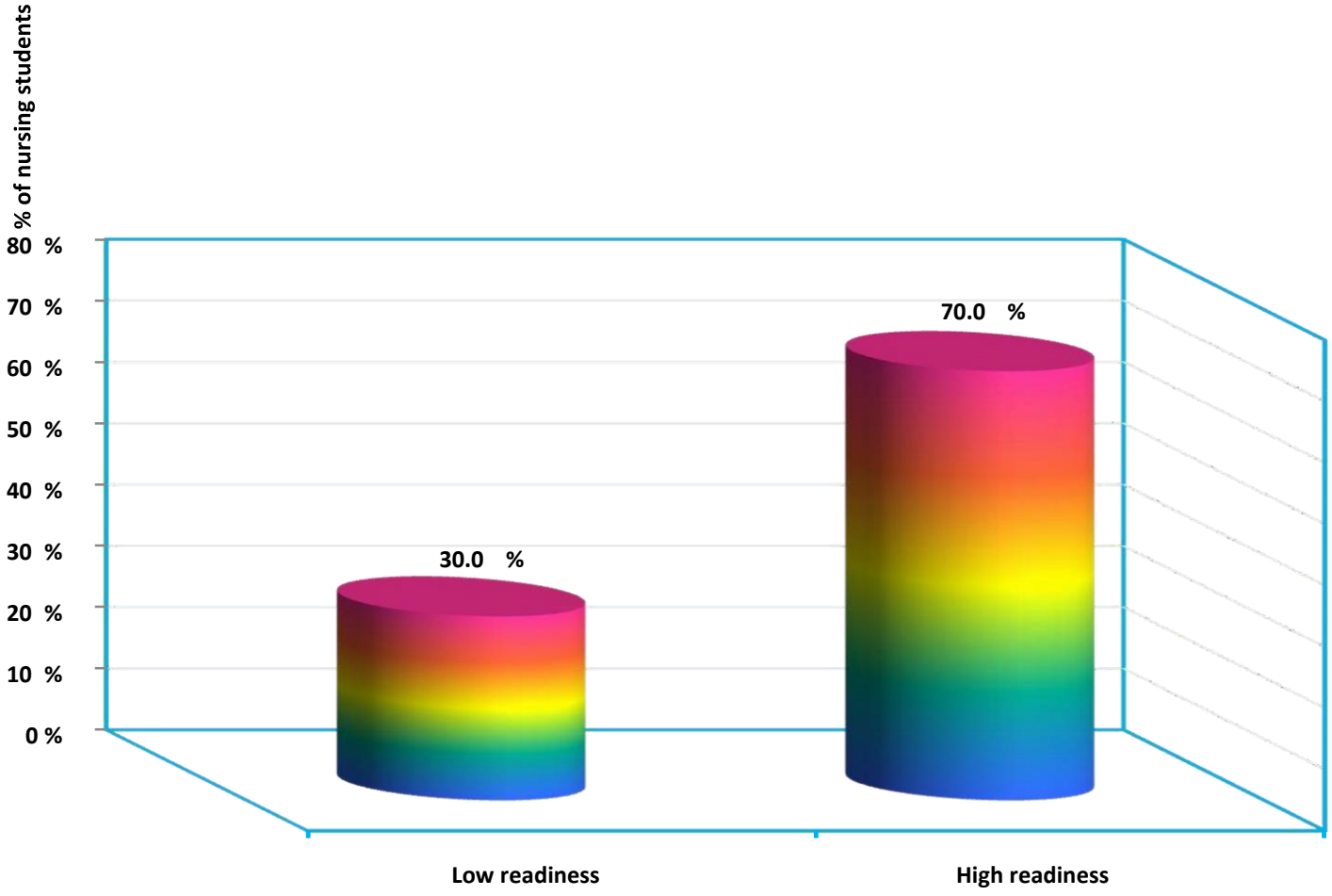

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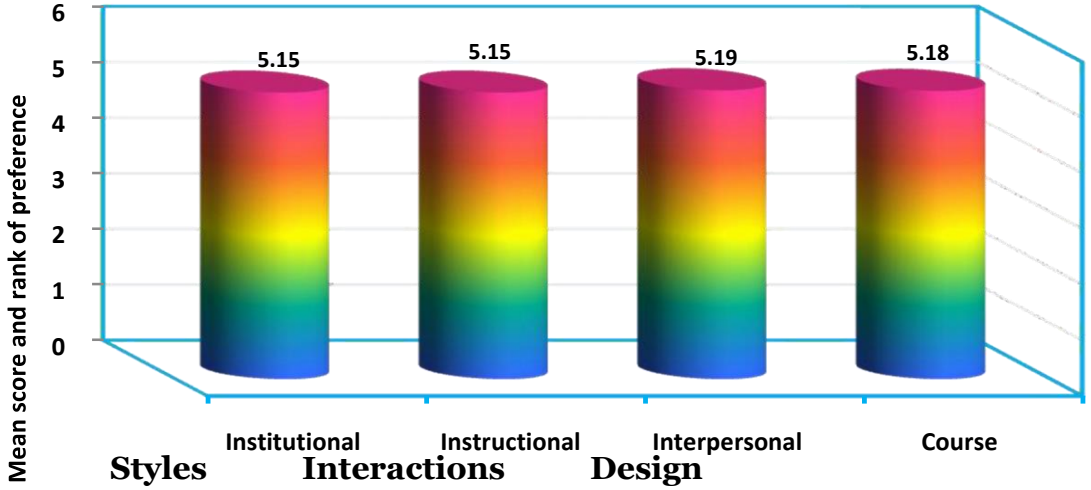
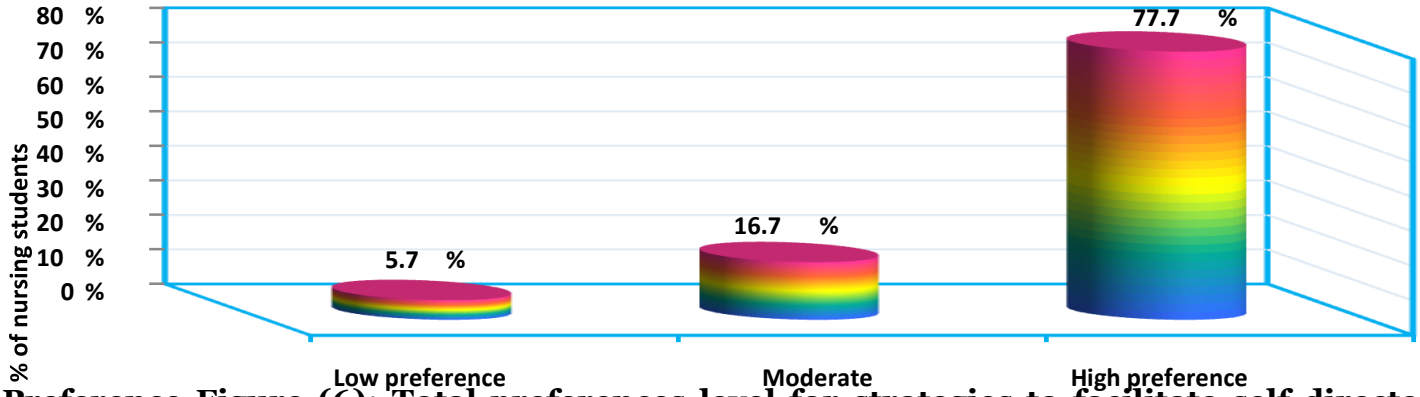
Figure (4): Total self-directed learning readiness level among the studied nursing students (No=300).



Support Styles Interactions Design Services Adaptations

Figure (5): Preferences for strategies to facilitate self-directed learning mean scores and ranks among the studied nursing students (No=300).



Preference Figure (6): Total preferences level for strategies to facilitate self-directed learning among the studied nursing students (No=300).

Table (2): Face and content validity of educational booklet about self-directed learning.

Nursing students' opinion							J		ury experts' opinion			
	Disagree		Agree		Strongly agree		Disagree		Agree		Strongly agree	
	No	%	No	%	No	%	No	%	No	%	No	%
Total face validity (Mean frequency of items)	0	0	7	23.3	23	76.7	0	0	3	20.0	12	80.0

Total content validity (Mean frequency of items)	**0**	**0**	**8**	**26.7**	**22**	**73.3**	**0**	**0**	**4**	**26.7**	**11**	**73.3**

Discussion

Nowadays, teachers are preparing learners for a world we cannot even forecast, and SDL has become a crucial foundation for 21st century learners(**Jaleel& OM, 2017).**This approach of learning increases the learners' motivation to learn, as they are the responsible for making their own knowledge, they experience a sense of independence while learning. Process of SDL keeps them engaged as they have to obtain knowledge by themselves as well apply it along with their skills to discover solutions to their problems related to learning and be encouraged to continue life-long learning**(Hill, Peters, Salvaggio, Vinnedge & Darden, 2020).**

The present study revealed that more than half of nursing students had high perception about SDL. Selfdirected learning skills for student item was found the highest and ranked (1), whereas self-directed learning skills for instructor item was the lowest perception and ranked (5). This may be due to students need various skills and attitudes for successful independent learning. Also, some students felt unable to approach some instructors and also students are reluctant to approach instructors due to some instructors show little respect for or not caring about students.

The present study agrees with result done by **Tekkol & Demirel, (2018)** who reported that students' SDL skills means were generally high in the university. Also, **Şenyuva & Kaya, (2014)** mentioned that selflearning skill is considered a very valuable talent in the environment of education necessary for SDL. Moreover, **Nantz&Klaf, (2012)** argued that skills required for SDL are crucial to attain significant and lifelong learning outcomes. In the same line, **English &Kitsantas, (2013)** emphasized the role of students' responsibility as a skill required for SDL.

In contrast, **Alotaibi, (2016**) suggested that nursing educators must pay attention to learners' independence, particularly during times of knowledge exploration and the technology evolution. Also, **Pezeshkirad, Golshiri & Chizari, (2009)** stated that educators must understand the extent to which students as well adult learners are satisfied with their previous educational experiencesto provide better learning experiences for learners in the future.

Regarding the nursing student's readiness for SDL, the present study revealed that less than three quarter of nursing students had high readiness for SDL. This may be due to nursing students encounter with different problems and struggles during their clinical practice and they need developing their knowledge and skill to be more autonomous and confident in selecting their decisions.

The present study consistent with the study of **Yuan, Williams, Fang & Pang, (2012)** who found that 60% of the baccalaureate-nursing student in China reported high level of SDLR. Moreover, **El Seesy, Sofar, Ali & Al-battawi, (2017)** found that the nursing students' overall readiness of SDL was considerably high., Also, **Klunklin, Viseskul, Sripusanapan & Turale, (2010),** and **El-Gilany & Abusaad, (2013)** whom stated that nursing student have high level of overall SDL mean score. Moreover, **Safavi, Shooshtari, Mahmoodi & Yarmohammadian, (2010)** declared that the majority of Jordanian and Iranian nursing students had high level of SDLR. Furthermore, pharmacy students showed a high degree of SDL readiness in the University of Maryland in the United State **(Huynh, Haines, Plaza, Sturpe, Williams, De Bittner, et al., 2009).** Additionally, **Örs, (2018)** found that the nursing students had high SDLR.

In opposite side, **Lestari & Widjajakusumah, (2009)** showed that only 50% of the students in Indonesia had high scores for SDLR. Moreover, about 23% of nursing students in Pakistan were above average on the SDL readiness, whereas 18% were below average and over 50% being just average scorers. **(Bruce, Lack, Bomvana & Qamata-Mtshali, 2018).**

The present study revealed that desire for learning was found the highest and ranked (1) followed by selfmanagement and self-control. This may be due to nursing students have a will to learn, they are open to sustained learning as they are working in changing and complex environment. The present study support study done by **Örs, (2018)** who found that the highest mean score percentage of readiness was for students' response to desire for learning followed by self-management, while self-control was the lowest. Also, **Yang & Jiang, (2014)** found that the desire for learning was the highest mean score, and the self-management was the lowest mean score.

In contrast, **El Seesy,Sofar, Ali & Al-battawi, (2017)** found that the highest mean score percentage of readiness was for self-control dimension followed by desire for learning dimension whereas self-management dimension was the lowest. Moreover, **Soliman & alshaikh, (2015)** found that students in King Saud University had high score for self-control domain whereas the least score was for self-management domain. In the same line, **Alkorashy & Assi, (2016) and El Seesy, Sofar, Ali & Al-battawi, (2017)**reported that the high score in student was for self-control domain whereas the least score was for self-management domain.

Regarding strategies to facilitate SDL mean score, the present study revealed that interpersonal interactions was found the highest strategy to facilitate self-directed learning and ranked (1) followed by course design adaptation whereas institutional support services and instructional styles were the lowest and ranked last. This was agreed with **Kaulback, (2020)** who reported that interpersonal interaction was the most important strategy to facilitate SDL. As well, **Liu, (2020)** mentioned importance of interpersonal interactions and asserted that SDL is about far more than learning on one's own, and it also includes learning from team members and peers.

The present study indicated that the proposed educational booklet about SDL as agreed upon their face and content validity by all of academic jury experts and nursing students. This result agreed with the study result of **Castellani, Girlanda, & Barbui, (2015)** who reported that validating booklet quality as the confidence that the potential biases of booklet development have been addressed adequately and that the recommendations are valid, and are feasible for practice".Also, **Australian Skills Quality Authority (2015)** focused on importance of validation to understand the capacity of the tools they utilize and adjust these tools to meet their requirements. Furthermore, ensures confidence in the quality of assessment. It also ensures that the assessment is valid, reliable, flexible and fair.

In Addition, **Rana, Ardichvili & Polesello, (2016)** suggested that booklets about new trends in teaching should be developed, or existing booklets should be adapted and contextualized. Additionally, intervention studies could be undertaken to implement and assess the developed or adapted booklets, to evaluate the effectiveness of these booklets on the transition of the nursing students from traditional methods of teaching to be self-directed learners as well as their confidence, sense of responsibility and accountability. **Also, Hardy (2019)** stated that its vital to assess the validity of the created booklet, through utilizing evaluation team evaluated the booklet for validity.

Conclusion

The findings of the present study concluded that, more than half of nursing students were high perception about SDL. More than half of nursing students were high level of perception regarding SDL skills for student followed by SDL benefits and SDL concept. Three quarter of nursing students were high readiness for SDL. Nursing students strongly agree regarding desire for learning followed by self-

management and self-control. More than three quarter of nursing students were high preference for strategies to facilitate SDL, interpersonal interactions was the most important strategies followed by institutional support services and instructional styles. As well, the proposed educational booklet about SDL was agreed upon its content and face validity by all of academic jury experts and nursing students.

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