Self-directed learning readiness: its effect on nursing students critical thinking abilities

Nagwa Gouda Ahmed Abd-Elmoghith[1]⋆, Mohga Abd El-Aziz[2] and Taqwa Rashawn[3]

[1]*Lecturer, Nursing Administration Department, Faculty of Nursing, Kafrelsheikh University, E-mail: nagwa_gouda@yahoo.com*

[2]*Professor medical surgical nursing, Faculty of Nursing, Kafrelsheikh University*

[3]*Lecturer, Nursing Administration Department, Faculty of Nursing, Port Said University*

ABSTRACT

Background: Self-directed learning is our most basic, natural response to newness, problems, or challenges in our environment.

Objective the current study was carried out to measure the effect of self-directed learning readiness on critical thinking among fourth level students' nurses who are enrolled in nursing administration course in Faculty of Nursing, Kafrelsheikh University

Method: A descriptive analytic research design was conducted. The study sample was consisted of all students in fourth level of nursing administration course in Faculty of Nursing, Kafrelsheikh University (235) student at the time of data collection. Instruments: Data was collected through using four tools; (1) California critical thinking disposition inventory (CCTDI), (2) self-rating questionnaire of self-directed learning skills, (3) self-directed learning readiness scale (SDLRS), and (4) learning self-regulation questionnaires.

Results: The study revealed that mean and standard deviation of total critical thinking was (267.25 ±21.72); and the mean and standard deviation of self-directed learning was (199.68 ±19.78) statistically significant relation was found.

Conclusion: the study concluded that teaching with self-directed learning have a positive effect on critical thinking skills on students.

Tool I: The Arabic copy of California Critical Thinking Disposition Inventory was used to assess critical thinking dispositions.

Key words: Self-directed learning–Critical thinking–student's nurses

1 INTRODUCTION

As the world moves further into the 21st as century, there is a need for "this century skills" such as creation, and independence among technology learners; at the same time new digital, net- worked technologies offer unparalleled opportunities for creative and in- dependent learning P. et al. (2013).

Guglielmino (Guglielmino) explained that self-directed learning is an innate, basic, and natural personalities of human beings where it encountering challenges, as well these personalities varies on the continuum depending on situations they face. Thoroughly Cadorin, Bortoluzzi, and Palese (2013) pointed out that self-directed learning is ideological as self-instruction, in which personal control to instruct themselves the techniques, methods on specific subjects

In addition, Self-directed learning are the hallmark of a creative mind, and they take discipline breaking and put divergent thinking into the realm of the real world P. et al. (2013).

In the nursing profession, self-directed learning is not a new concept in education O'Shea (2003) Nolan & Nolan (1997b) Nolan & Nolan (1997a) However, Hewitt-Taylor (2001) Hewitt-Taylor (2002) investigated nurse educators'

and students' perceptions of the term 'SDL' using multiple qualitative methods including interview, field diary and observation.

According to Azer (2008) mentioned that the characteristics of self-directed learners are as follows:

- They are inclined to consider various facets that pertain to a novel notion.
- Draw upon separate resources to glean data.
- Do not have to compel to one special resource.
- Can recall prior knowledge; can give good reasons for their opinions and cope with ambiguity think.
- They can take control of their own learning process; are eager for their learning attainments.
- Utilize techniques to determine the objectives of learning.
- Execute a hypothesis-driven proceed to their erudition.
- Breech wrangle diverse opinions; and transform sophistication details.

Must be the graduated nurses have the ability to manage the urgent situations through develop critical thinking skills J.A. & J (J.A. & J) .

Numerous university teachers view critical thinking as

a leading sign of student learning quality. National report, (2005) the Association of American Colleges and Universities (AACU) elucidated that 93% of higher education faculty considered analytical and critical thinking to be a fundamental learning end result, where 87% of undergraduate students showed that college experiences enabled them to make use of innovative and analytical thinking. Furthermore; the AACU report showed that only 6% of undergraduate seniors indicated critical thinking competence in terms of educational testing services as a standardized evaluations from 2003 to 2004 O. & S (2012).

As Patterson & 2002 (Patterson & 2002), stated six competencies confined to enhance self-directed in the surround of problem based learning. These competencies are self-assessment from claiming taking in gaps, assessment of self-What is more, and other reflection, majority of the data management, basic Intuition and basic evaluation. The same writers likewise place forward the perfect for SDL as a Creating ability and depicted as those expected progression throughout education, inside cognitive psychology, students' autonomy for Taking in the place it might have been investigate also designated as self-regulated Taking in.

Therefore, the present study was carried out to measure the effect of self-directed learning readiness on critical thinking among fourth level nursing students who are enrolled in nursing administration course in Faculty of Nursing, Kafrelsheikh University

1.1 Research question:

(i) Which models of self- directed learning affects by critical thinking?

(ii) To what extend the students have readiness to self-learning.

(iii) Is there impact by critical thinking on self-directed learning?

1.2 Subjects and Methods

The subjects and methods of this study were portrayed under the following four main designs:

1.3 Technical Design

Research design: A quantitative correlational research design was used to measure the effect of self-directed learning readiness on critical thinking among 4th level students of nursing administration course

Study setting: Data were collected from students in 4th level of nursing administration course at Faculty of Nursing, Kafrelsheikh University

Study subjects: The subjects of this study is one group namely all students in 4th level of nursing administration course in Faculty of Nursing, Kafrelsheikh University (235) student.

Tools of data collection: Data was collected through using four tools; (1) California critical thinking disposition inventory (CCTDI), (2) self-rating questionnaire of self-directed learning skills, (3) self-directed learning readiness scale (SDLRS), and (4) learning self-regulation questionnaires.

Tool I: The Arabic version of California Critical Thinking Disposition Inventory translated into Arabic; Agwa & Elbana (2000) checked its validity & reliability. was used to assess critical thinking dispositions. Of the current study composed of 75 items grouped into seven dispositional characteristics namely; truth seeking; open mindedness; analyticity; systematicity; self-confidence; inquisitiveness; and maturity. The California Critical Thinking Disposition Inventory is a standardized international and valid, reliable tool. The reliability coefficient score for its seven characteristics was ranged between 0.69 and 0.75.

Scoring system: For each of the seven subscales a student's score on the CCTDI may range from a minimum of 10 points to a maximum of 60 points. Each of the 75 items includes a forced choice six point likert scale ranging from strongly agree (1) to strongly disagree (6). A reversed scoring allotted to negative statements.

Tool II: self-rating questionnaire of self-directed learning skills**:** developed by Sukseemuang (2009)**.** It used to measure the skill of self-learning. This tool consists of (10) questions that cover the area and involve the ability to manage learning tasks without having them directed by others. These skills are necessary for effective lifelong learning as scored by four-likert type as follows: DK: do not have or not able to use the skill listed, LO: have a low ability to use the listed skills, MD: have a medium ability to use the listed skills, and HI: developed experiences and activities to the listed skill. **Scoring system:** total scores' max=40, and min =10.

Tool III: self-directed learning readiness scale (SDLRS): designed to determine the extent to which individuals perceive themselves as possessing the skills and attitudes associated with self-directed learning. Guglielmino (Guglielmino)**.** This tool consists of 58 items, scored by five-likert scale as one = almost never true of me, I hardly ever feel this way. Two = Not often true of me; I feel this way less than half the time. Three= sometimes true of me; I feel this way about half the time. four = Usually true of me; I feel this way than half the time, to five = Almost always true of me; there are very few times when I don't feel this way, there is 41 items from the 58 items about self-directed learning characteristics and should be scaled positive. The 17 items should have reverse scored negative to show support for self-directed learning characteristics. **Scoring system:** ranges from 58-201 ranges indicates a low level of ability to direct one's own learning, 202-226 indicates an average level of ability to direct one's own learning, and 227-290 indicates a high level of ability to direct one's own learning.

Tool IV: learning self-regulation questionnaires: It test results of overall scores by 3 points likert scale as 1= not at all true, 2= somewhat true, and 3= very true. This question related to students reasons for participating in nursing classes. Different students have different reasons for participating in such class, it consists of 14 questions of three categories as participate actively in class (1-4 items), follow instructor's suggestions (5-10 items), and continue to broaden nursing knowledge (11-14 items). **Scoring system:** total score max=42 and total score min=14

1.4   Pilot study:

A pilot study was carried out on 10% of the total sample size (12 students), it was done to test the clarity of two tests of the questionnaire; as well as to estimate the time needed for data collection. Then, the necessary modifications was done. Those students who were included in the pilot study were excluded from the actual study sample.

1.5   Fieldwork:

The fieldwork of this study was accomplished through a two phases as the following:

(i) First phase: It was concerned with the preparation of the data collection

(ii) Second phase: it aimed at

Ethical Considerations: to proceed with study and collection of data an official permission was taken from the higher authority of Faculty of Nursing of Kafrelsheikh University, as well as, an official permission was taken from participants themselves. All participants were assured that all obtained information will be treated with confidentially, and will be used for the purpose of the research. **Statistical Design:**

Data entry done by using Epi-Info 6.04 computer software package, while statistical analyses were done using the statistical package for social sciences (SPSS), version 20.00. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables. Qualitative variables were compared using Chi-square test, whenever the expected values in one or more of the cells in a 2×2 tables were less than 5, Fisher exact test was used instead, in larger than 2×2 cross tables, and no test could be applied whenever the expected value in 10% or more of the cells was less than 5. Statistical significance was considered at p-value <0.05.

2   RESULTS

As can be seen in the Table 1 more than half of study sample (61.3%) aged 22 years old, with the mean and Std. Deviation 21.92±.88 years and most of them were females & single

As can be observed in Table 2 the highest mean of critical thinking characteristics was observed in relation inquisitiveness, followed by analyticity, and then followed by maturity. However, the lowest mean was related to open-mindedness.

Table 3 : Revealed that the level of the SDLRS total scores was found among more than have of students' sample (53.6%) had a low level of the SDLRS total scores, whereas, (9.8%) only of the sample had above average level of the SDLRS total; with a mean and SD± of 199.68± 19.78

Table 4 : clarifies that the students' mean scores and Std. Deviation of their subscale scores regarding learning self-regulation, total and the self-rating total among the sample. The table Shawn that the highest mean of subscale scores of learning self-regulation was instructor's suggestions.

As can be seen in Table 5 that there is a correlation between total CTD, total self-rating, total the learning self-regulation, and total self-directed learning readiness students. It was found that there was statistical significant correlation among the total CTD, total self-rating, and total self-directed learning readiness student, total self-rating, and total self-directed learning readiness student, total the learning self-regulation, and total self-directed learning readiness of students.

3   DISCUSSION

The present study was carried out to measure the effect of self-directed learning readiness on critical thinking among sample of nursing students fourth level students who enrolled in nursing administration course were studied Faculty of Nursing, Kafrelsheikh University. To achieve the aim of study. The study results showed about more than half of them were at age 22 years old, with the mean and Std. Deviation 21.92±.88 years. In addition, to most of them were female and single these results might be due to whenever; a student have a mature age can discover a new area and looking for an area not used or investigated ahead.

The current study shown that the nursing students mean scores were high in analyticity and inquisitiveness, compared to truth seeking and open-mindedness; these findings are incongruent with Ibrahim (2016) who indicated that nursing students the highest mean score was found on the open mindedness & lowest rated mean score on the truth seeking subscale. These results pointed out nursing students have capability to predict problem situation and use the evidence to solve it, as well as they have a personal curiosity to learn more.

Regarding mean of total self-directed learning readiness scale, the current study founded that the nursing students have low-level ability to direct one's own learning; these findings are in agreement with H (2013) . While, these results are contradicted with those obtained by Klunklin et al. (2010) who found that Thailand nursing students had a relatively high level of SDL readiness. These results might be due to the nursing students have not ability to work independently during their education, with limitation of time for creative thinking.

As regards, self-regulation the present study revealed that the maximum dimension of self-regulation was for instructor's suggestions, and these finding in the same line with El-askary (2013) who indicated that a significant difference was found between self-regulation and instructor's suggestions item. These findings might be due to allowing open discussion; and encourage the nursing students to discover new ways to ask the right questions.

The present study finding were maximum regarding total of learning self-regulation among study sample. The E. & R (2013) are in agreement with the present study as they found that the participants had higher self-regulation in learning these results might be due to acquiring of activities which help nursing students to self-regulated in learning.

On the other hand, a statistical significance correlation was found between critical thinking and self-rating of the study sample; where these results are supported by R. & F (2014) who studied the relationship between critical thinking and self-rating (p < 0.001). These may provide nursing

Table 1. Personal characteristics of nursing students in the study sample (no = 235)

Items	Frequency	Percent
Age (years):	20	8.5
20	30	12.8
21	144	61.3
22	30	12.8
23	11	4.7
24		
Range	20-24	
Mean ± SD	21.92±.88	
Marital	208	88.5
single	27	11.5
married		
Sex	35	14.9
male	200	85.1
female		

Table 2. Students' sample mean ±SD of their critical thinking disposition: (no = 235)

Critical thinking dispositions	Nursing students		
	Mean	SD	Rank order
Truth seeking	36.07	6.86	6
Open-mindedness	34.41	4.91	7
Analyticity	40.78	6.57	2
Systematicity	38.27	6.89	4
Self-confidence	36.46	7.39	5
Inquisitiveness	41.94	8.47	1
Maturity	39.29	7.32	3
Total CTD	267.25	21.72	———

CTD = Critical thinking Disposition

Table 3. Students' mean and Std. Deviation and Level of self-directed learning readiness scale total (SDLRS)

	a low level	%	an average	%	above average	%	Mean ±SD
(SDLRS	126	53.6	86	36.6	23	9.8	199.68 ±19.78

Table 4. mean and ±SD of subscale scores of the learning self-regulation total and the self-rating total among study sample

	Min.	Max	Mean	SD.
participate actively in class	5.00	12.0	8.57	1.56
Instructor's Suggestions	6.00	18.0	12.65	2.03
Continue to Broaden Nursing Knowledge	4.00	12.0	8.76	2.01
Learning Self-Regulation Total	20.0	40.0	30.00	4.07
The Self-Rating Total	13.0	30.0	21.91	4.01

Table 5. Correlation of CCTD total scores; self-rating, the learning self-regulation, and self-directed learning readiness total scores.

		total self-rating	total the learning self-regulation	total self-directed learning readiness
total CTD	r	.304**	.078	.137*
	p	.000	.232	.035
total self rating	r		.060	.146*
	p		.358	.025
total the learning self regulation	r			.347**
	p			.000

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level(2-tailed).
**Correlation is significant at the 0.01 level. * Correlation is significant at the 0.05 level.
A correlation coefficient near 0.00 indicates no relationship
R= .10 to .29 = Weak correlation/relationship
R= .30 to .49 = Moderate relationship/Medium correlation
R= .50 and above = Strong relationship/high correlation.

students more opportunities to use the judgment and communication skills in learning activities. Furthermore,

The present study found statistical significant relation between critical thinking, and self-directed readiness. Similarly, a study done by Hashemabadi et al. (2013) who found that a significant and positive relationship between critical thinking and self-directed readiness among nursing students. In this regard, study results concluded that learners should be encouraged for self-directed readiness where this will be effective for learning critical thinking techniques.

4 CONCLUSIONS

In conclusion, the study results might be provide a more comprehensive understanding of self-directed learning readiness and its effect on critical thinking. The findings demonstrate a maximum of nursing students regarding the total of learning self-regulation. In addition, the study revealed a statistical significance between critical thinking and self-rating of nursing students. In addition, relation between critical thinking and self-directed readiness; and this suggest that the self-directed learning readiness increased when critical thinking skills found.

5 RECOMMENDATIONS

(i) Critical thinking approach should be recommended and to be insert in higher education; particularly for these who will be graduated from universities with a degree programs of health care profession.

(ii) Curriculum should be developed in a form of utilization self-directed learning and curiosity to increase classroom-teaching performance.

(iii) Training sessions are recommended for course instructors for importance of using critical thinking skills.

REFERENCES

1. Guglielmino, L. M.(2008) Why self-directed learning? International Journal of Self-Directed Learning, (1) 5, 1-14. Retrieved from http://www.sdlglobal.com/IJSDL/IJSDL5.1-2008.pdf.
2. Mishra P., Chris Fahnoe, Henriksen D. & the Deep-Play Research Group, Michigan State University (2013): Creativity, Self-Directed Learning and the Architecture of Technology Rich Environments, Vol (57), Number 1
3. Nolan, J., & Nolan, M. (1997a). Self-directed and student-centred learning in nurse education: 1. British Journal of Nursing, 6(1), 51-55
4. Nolan, J., & Nolan, M. (1997b). Self-directed and student- centered learning in nurse education: 2. British Journal of Nursing, 6(2), 103-107.
5. O'Shea, E. (2003). Self-directed learning in nurse education: A review of the literature. Journal of Advanced Nursing, 43(1), 62-70.
6. Hewitt-Taylor, J. (2001). Self-directed learning: Views of teachers and students. Journal of Advanced Nursing, 36(4), 496-504.
7. Hewitt-Taylor, J. (2002). Teachers' and students' views on self-directed learning. Nursing Standard, 17(1), 33-38.
8. Azer, S.A. (2008). Navigating problem-based learning. London: Elsevier.
9. Tabatabaei O., & Parsafar S., (2012) The Effect of Self-Directed Learning on Critical Thinking of Iranian EFL Learners ISSN 2240-0524.Journal of Educational and Social Research. Vol. 2 (2) May 2012

10. Patterson, C., D. Crooks, and O. Lunyk-Child. 2002. A new perspective on competences for self-directed learning. Journal of Nursing Education41, no. 1: 25-31
11. Agwa, A. H. and Elbana, A. E. (2000): California Critical Thinking Disposition Inventory: the Arabic copy. Alexandria, Egypt: the Egyptian Library for Publications.2001/1598.
12. Hashemabadi, G., Garavand, H., Mohammadzadeh Ghasr, A., & Hosseini, S. (2013). A survey on relation between tendency to critical thinking and selfdirected in nursing and midwifery students and its role on their academic achievement. Journal of Medical Education and Development, 7(4), 15-27.
13. Ibrahim R. (2016). Critical thinking dispositions among student of mosul's nursing college. The malysian Journal of nursing, Vol. 7(2).
14. Shahin E. Tork H. (2013). Critical thinking and self-directed learning as an outcome of problem-based learning among nursing students in Egypt and Kingdom of Saudi Arabia. Journal of Nursing Education and Practice, 2013, Vol. 3, No. 12, P.p. 107,108
15. Klunklin A, Viseskul N, Sripusanapan A, & Turale S. Readiness for self-directed learning among nursing students in Thailand. Nursing and Health Sciences. 2010; 12: 177-81. http://dx.doi.org/10.1111/j.1442-2018.2010.00515.x
16. Fahim M. Bagherzadeh R. and Hosseini F (2014). The Relationship between Self-Directed Learning and Critical Thinking Ability of Iranian EFL Learners. International Journal of English Language, literature and Humanities. Vol (II), No. V, P.p. 565.
17. Jung E. and Brawley R. (2013). Concurrent Self-Regulatory Efficacy as a Health of the goal Exercise behavior Relationship. Journal of Health Psychol. Feb 26. Epub ahead of print.
18. Cadorin L. Bortoluzzi G. Palese A. (2013) The Self-Rating Scale of Self-Directed Learning (SRSSDL): A factor analysis of the Italian version. Nurse Education Today Journal. 33 (2013) 1511–1516
19. Worrell J.A. & Profetto-McGrath J. Critical thinking as an outcome of context-based learning among post RN students: a literature review. Nurse Education Today. 2007; 27: 420–426. PMid:16945453 http://dx.doi.org/10.1016/j.nedt.2006.07.004.
20. Sukseemuang P. (2009). Self-directedness and academic success of students enrolling in hybrid and traditional courses. Published Doctoral Dissertation: Faculty of the Graduate College of the Oklahoma State University. Thailand.
21. El-askary E. (2013). Effect of problem-Based learning on self-directed learning readiness among students in nursing administration. Thesis unpublished.