The Effect of Learning Contract Educational Strategy on Nursing Students' Motivation and Learning Outcomes

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Abstract

Learning contract is an active educational strategy that encourages and motivates learners to participate and share in their learning decisions and helps them to be systematic and focused to achieve the intended learning outcomes. **Aim of study:** Is to evaluate the effect of learning contract educational strategy on nursing students' motivation and learning outcomes. **Design:** Quasi-experimental research design. **Setting:** The study was conducted at the Faculty of Nursing, Damanhour University, El Beheira, Egypt. **Subjects:** all students enrolled in the second semester in Community Health Nursing course in the academic year 2017-2018 (n= 210). They were randomly assigned into study and control groups. The study group was instructed by learning contract. while control group left by a traditional educational strategy. **Tools:** Motivated Strategies for Learning Questionnaire (MSLQ), Perceived Benefits of Contract Learning, and Students' learning outcomes evaluation tools wereused for data collection. **Results:** There was a statistically significance difference in motivation scores between the study and control groups in favor of learning contract one. Moreover, students' scores in the selected parameters of students learning outcomes were significantly higher in excellent score at the study than control group in presentation, health class evaluation, and problem oriented recording parameters of students learning out comes. **Conclusion:** learning contract strategy is an effectual strategy in improvement of nursing students' motivation and learning outcomes. **Recommendations:** Implementation of learning contract strategy on first year students to prepare the nursing students for independent and lifelong learning. Conducting training workshops and constructing guidelines to prepare educators for their role as facilitators for learning.

Key words: Learning contract, learning motivation, learning outcome, educational strategy.

Introduction

The community health nurse or public health nurse is one category of the health workforce in the community. A community comprises people of various ages, health conditions, social status and cultures. The community health nurses are expected to focus their work on disease prevention and health promotion, including promotion of self-care. (**Ablah et al. 2014**). In addition, The framework of nursing education in community health is aimed to provide guidance to nurse educators on the key contents to be included in the community nursing teaching course. It includes the key role functions, and the work of community health nurses; the population targeted, core competencies, and the teaching and learning process. (**Clark et al. 2016**).

Confronted with changing health-care systems and needs, nursing educators must now visualize nursing and nursing education from a different perspective. Some nursing programmes have modified the design of educational strategies applied in community health nursing education in the baccalaureate curriculum. The focus of the change is to deliver a powerful form of pedagogy that integrates experiential learning and academic goals of an organized educational experience that formalize and release of learners resposibility and self direction. (**Sajadi et al. 2017**)

For decades, educators have tried a number of approaches for transitioning the learning process toward self-direction. (**Al-Harthy, and Christopher 2010**)As a result of these efforts, a process known as collaborative learning has evolved and is becoming more and more popular across the country. Collaborative learning seeks to match educational activities with the needs of individual learners. **Contract learning** fosters a collaborative learning environment. The spotlight shifts from the transmission of knowledge to the generation of knowledge in the collaborative approach. Thus, students can be evaluated on the development of individualized learning activities and attention is focused on the individual learner. Learning contract as used in higher education is a formal written agreement between the learner and a supervisor which details what is to be learnt, the resources and strategies available to assist in learning it, what will be produced as evidence of the learning having occurred, how that product will be assessed and within what timeframe the learning will take place.(**Frank, and Scharff 2013**)

Most advocates of the learning-contract method identify the benefits as individualization of the learning process, promotion of learner independence, development of lifelong learning behaviors in students, and active participation by learners. The overall goal of the learning contract is to allow the student to take responsibility for his/her own learning. The specific objectives of learning contracts include assisting the student to: a) gain a better understanding of his/her own strengths and limitations, and of the learning techniques which work best for him/her. b) obtain a better appreciation of the values and attitudes that he/she obtained from a particular fieldwork setting. c) develop increased commitment to the learning process in the fieldwork setting. Teacher has the resposibility in supporting and guiding the student through the learning experience. This includes facilitating any reasonable adjustments the student may need to get maximum benifit from the placement. Identifying relevent learning opportunities and creating development plans with the students. (**Nejad L. 2012**)

Student learning is complex and wide ranging, mainly when talking about instruction in nursing education. For more effectiveness and success in the learning process, one must be willing and motivated to learn. This is especially true for graduate students who should have the motivation to be ready and competent in problem solving, decision making, and using professional judgment. (**Nejad L. 2012**)

Learning outcomes are the new repertoire of knowledge, skills, and abilities acquired in the process of learning. These outcome features are fundamental to effective learning. People need to explicitly know what skills they are to acquire. They need to have multiple different opportunities (class and non class) to practice this specific skill. One needs to measure changes in skills in order to redesign how to learn this skill or to provide summative evaluations about the acquisition of this skill. All these features enhance motivation to learn, focus of attention on what to learn, and provide a feedback process to sustain learning. (**Adam 2004**)

Learning occurs under the umbrella of motivation as explained by educational psychology and learning theories. Rutherford

in 2017, and Swirski, in 2011 reported that behaviorism focuses on positive consequences that increasing the behavior's probability while negative consequences decrease it (**Skinner 1953; Han et al. 2016), and Swirski, (2011**). The educator has a key role in organizing the learning environment to ensure, correct and desired behaviors are likely to occur, and that when it does, students will be rewarded. Incorrect responses are either punished or ignored.(**Swirski et al. 2011**).

Therefore, educators should create a learning environment that motivates learners by using different strategies and encouraging their autonomy and selfawareness about their own learning. Researches highlight the importance of learning motivation as a predictor for academic success in higher education (**Han et al.2016 Roth et al. 2007**)

learning contracts could be motivational for reasons. **First,** learning contracts highlight to students that deliberately performing certain learning tasks under their control such as reading, seeking help from peers, etc. would be likely to lead to academic success, rather than luck or chance, a link which has been shown as crucial to developing selfefficacy (Bandura, 1977; Elbow, 2009 and Bandura, 1989; Pintrich, 1994). Self-efficacy is the most influential factor in ensuring a person's success in life (Ambrose, 2010), and the stronger the efficacy expectations, the higher the likelihood of success (Bandura, 1989; Pintrich, 1994). **Second,** motivation will be enhanced in a supportive environment, which the face-to-face learning contract meeting and personalized contract text help make explicit. Furthermore, peer group interaction and student-faculty interaction are the first and second most positive contributors to self-reported intellectual and personal growth in the college environment.(**Ambrose, 2010**).

The researchers have suggested various external factors that promote the students'

learning outcome like the educational inputs and processes to achieve a predetermined outcome. Additionally, a more emphasis should be put on the students' internal factors as motivation to learning. Those internal factors could be promoted or even corrected upon need. Moreover, course grades could be used as learning outcomes assessment if they are broken down into the components that are the indicators of learning outcomes. (**Hubball and Burt 2007, Raffe and David 2007, Wolf et al. 2014).**

As summarized above, the existing literature suggests that learning contracts can be a means to get students on a path towards self-direction and, thus, motivation and performance. In a sense, learning contracts can be a way to establish a type of guided structure as, educators' goals differ from their students, but by creating learning contracts, an educator can establish conditions to make both more likely. Thus, behaviors and outcomes would be mutually beneficial to the instructor and students. Aligned goals like these can lead to "powerful learning" (**Cheang, 2009,Fedel et al. 2013**).

Significance of the study:

Several researches examined the effect of educational strategies on either academic performance, or behaviors and certain dimensions of the motivated strategies of learning qustionnaire. Methods of those did not include the specific activities to be conducted that might improve both motivation and learning outcomes achievement. This study is an attempt to analyze the corelation between motivation scales and strategies of learning that are incorporated within the learning contract to provide a step by step guide for nursing educators to apply the learning contract to promote the student' motivation and learning outcomes. (**Fedel et al. 2013, Wolf et al. 2014, Sajadi et al. 2017**).

Aim of the Study:

The aim of the study is to evaluate the effect of learning contract educational strategy on nursing students' motivation and learning outcomes.

Operational definitions:

- **Learning contract:**An educational strategyits core is a plan to accomplish a learning outcomes via specific plan of actions based on students' needs.learning contract" include features of preference for the learner's choice of activity, learning objectives or learning plans, and usually a concurrence between the learner and educators.

- **Learning outcomes:**Learning outcomes are the most immediate measure of the effectiveness of the learning contract. The extent to which there are noticeable improvements in students' performance regarding the intended learning outcomes of the selected learning experience in community health nursing course.

Research Hypothesis:

Nursing students who have been instructed by learning contract will exhibit higher motivation scores and learning outcomes scores than those who have been instructed through the traditional strategies.
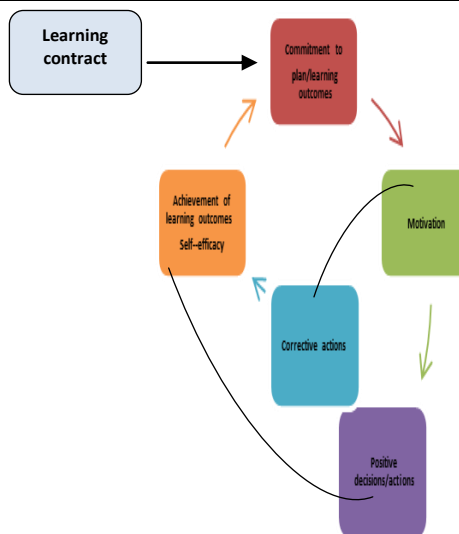

*Figure: 1 study frame work adopted from (**Frank, and Scharff 2013**)*

By using the contract students committed to plan to achieve the intended learning outcomes, students motivated to take more positive decisions and actions or to take corrective actions with belief in their abilities to achieve more learning outcomes.

Subject and methods:

Research Design:

This study used a quasi experimental design.

Setting:

The study was conducted at Community Health Nursing, Faculty of Nursing, Damanhour University.

Subjects:

The subjectsof the study comprised all students who were all enrolled in the second semester in Community Health Nursing course in the academic year 2017-2018(n=210). They were randomely assigned into study group (n=105) and control group

(n=105). Students were selected because they are senior students to prepare them for roles as independent and lifelong learners after their graduation. Another cause of the nature of the community health nursing curriculum that is broad and cored with previously studied specialties in the previous academis year.

Tools of Data collection:

Tool I: A personal and academic questionnaire sheet,which contains information about nursing students' age, gender, previous academic level.

Tool II: Motivated Strategies for Learning Questionnaire (MSLQ), which was developed by Pintrich et al., in 1993 to assess college students' learning motivational orientations during teaching-learning activities. This tool checked for applicability by GOK in 2012. It included eighty one items. Each item was followed by a five point Likert Scale ranging from not at all true (1) to very true (5).(Pintrich et al 1993, GOK 2012)

There are two sections of MSLQ: section 1; Examines learning motivation and section 2; Examines strategies of learning.

Section 1: Motivation scales value components;Included three general motivation constructs that consists of 31 items:

- Expectancy; refers to students' beliefs that they can accomplish a task. The two MSLQ scales that make up the expectancy component are the Control of Learning Beliefs Scale and the Self-Efficacy for Learning and Performance Scale.

- Value; focuses on the reasons why students engage in an academic task. Attributes that make up the value component cover Intrinsic Goal Orientation, Extrinsic Goal Orientation and Task Value.

- Affect; used in terms of responses to the Test Anxiety Scale, which taps into students' concern over taking examinations.

Section 2:Cognitive and metacognitive learning strategies; Itconsists of fifty items about about nine strategies, namely; rehearsal, elaboration, organization, critical thinking, and meta-cognitive self-regulation, time and study environment, effort regulation, peer learning, and help seeking.

Scoring system; Students rate themselves on a five point Likert Scale from "not at all true of me" to "very true of me."

Section 1scores are distributed according to the following levels;Lowest level (31 - 56), Low level (57 - 81),Average level (82 - 105), High level(106- 129), and Highest level (130- 155)

Section 2:scores are distributed according to the following levels;Lowest level (50 - 90), Low level (91 - 130), Average level (131- 170), High level(171 - 210), and Highest level (211 - 250).

Tool III. Perceived Benefits of Contract Learning; At the end of the placement, the effectiveness of contract learning was assessed using thequestionnaire: Perceived Benefits of Contract Learning, developed by Cheng (1997)to obtainstudents' views on the benefits of contract learning. The questionnaire consisted of 22 itemsdivided into four sub-scales:Ability to use the learning contractconstitutes 9 items, Effects on student autonomy in learningcomprises 6 items, Effects on student motivation in learning contains 2 items, andEffects on applying theory to practice constitutes 5 items.Students wereasked to rate each item in the questionnaire from 1 to

5 (1=strongly agree, 2=agree, 3=neutral,4=disagree, 5=strongly disagree). (Cheng 1997 inJones and Rye2008)

Scoring system:

The Overall perceived benefit score of this tool is distributed as follows; low (22 - 51), moderate (52 - 80), and high (81 - 110).

Tool IV:Students' Learning Outcomes Evaluation Tool; This tool was developed by the Community Health Nursing Department staff, Faculty of Nursing, Damanhour University 2016.It was utilized to measure nursing students' performance. It comprises five parameters namely; Case Presentation which constitutes 4 items, Health class evaluation comprises 5 items, problem-oriented record which constitutes 5 items, Behavior evaluation sheet contains 10 items and Written exam that constitutes 5 types of questions.

The students log book specifies the following parts of the learning outcomes evaluation tool;

1) Case Presentation: allotted marks 10;

- Assessment techniques: Data collection-2 marks

- Identification of needs and or problems and setting priorities-2 marks

- Implementation of nursing intervention according to identified needs-4 marks

- Oral presentation (Ability to communicate-Ability to defends her case)-2 marks.

2) Health Class Evaluation allotted marks 10;

- **Preparation: (4** marks**)**

a-Content (3 marks); Accurate (1 mark) -Complete and comprehensive (1 mark), and Appropriate to level of understanding (1mark).

b-Organization (1 mark).

- **Oral presentation:(6 marks)**

a-subject matter (4 marks); -Complete (1.5 marks) and -Accurate- (1.5 marks) and adopted to level of understanding (1 mark).

b-Use audiovisual material (1 mark).

c-Use communication technique (1 mark).

3) Problem Oriented Recording allotted marks 10

1-Assessment (5 marks).

a-Data base: (3 marks); Complete (1.5 marks) and Accurate (1.5 marks).

b - Listing the need according to priority (2 marks).

2-Management (4 marks).
a-Nursing care(2 marks).
b-Health teaching **2**
3-Plan for follow up 1

4) Behavior Evaluation Sheet allotted marks 10; on a three-point Likert Scale ranged from one to threeto evaluate professional attitude, behavior and responsibility.

5) Written exam allotted marks 20 marks

- Case scenario (5 marks).

- Write short notes (3 marks).

- Multiple choice questions (5 marks).

- True false questions (5 marks).

- Matching (2 marks).

The scoring system of the five parameters of Students' learning outcomes evaluation tool:

- Fail (<60%)
- Pass (60 – <65%)
- Good (65 - <75%)
- Very good (75- <85%)
- Excellent (≥85%)

Field work:

- **Administrative design;**An official approval was obtained from responsible authorities and participants after explaining its purpose.

- Tool II, and III were translated into Arabic.

- Content validity of the tools was tested by a jury of 5 experts in Nursing Education and Community Health Nursing fields and consequently, few modifications were done.

- Reliability of tools II, III, and IV was checked by Cronbach's Alpha test. Its resultwere 0.869,0.878,and 0.789 respectively, which indicates an accepted reliability.

- Pilot study was conducted by the researchers to test the clarity and applicability of the tools on 30 undergraduate nursing students from the first semester enrolled in Community Health Nursing course (out of the sample). According to the results of the pilot study, the tools were put in its final form.

- This study introduced contract learning in the clinical placement of community health Health Nursing, which is one of the major subjects of the Bachelor of Nursing degree programme. The researchers participated in planning and co-ordinating the clinical placement, and developing the learning contract.

- Then, they evaluate the effectiveness of this learning strategy on learning motivation and outcomes as follows;

Operational design:

I. Preparation phase;Tool IIMotivated Strategies for Learning Questionnaire (MSLQ) was used as pre-test.

- Content preparation; the intended learning outcomes of the practice rotations were revised.

- Educational materials preparation; Instructional materials as handouts of learning materials power point presentations, flipcharts were prepared.

- **Staff preparation:** The researchers conducted three meetings with the clinical instructors to apply the learning contract. A teaching manual was prepared by the researchers to guide the staff; the manual includes the following: 1) General information about the community health nursing the academic semester, type of the course, course duration hours, number of students studying the course.2) Purposes the learning contract. 3) Intended learning outcomes of the practice rotations. 4) Phases of learning contract that include; preparation, conduction, and evaluation phases. 5) Forms and templates of learning contract. 6) Expected outcomes of learning contract.

II. Conduction phase; the formal clinical sessions started from 8:30 AM to 1:00 PM 2 days/week for 3 weeks. Orientation to the practice environment addressed in the first day:Implementation of the learning contractthe practice learning contract is comprised of three component parts;

Preliminary Interview – this needs to take place within the first 2 days of the practice experience; Student, outline learning objectives-needs for this practice experience.Instructor, record comments on this student learning objectives-needs, and suggested practice opportunities, goals and expectations. Then the Student, list the negotiated learning objectives-needs and list of requirements to fulfill these needs.

The negotiated map to fulfill the intended learning outcomes;

Intended learning outcomes	Teaching and learning methods	Learning activities and resources	Evaluation methods	Evidence
Knowledge and Understanding	Lecturing Discussion	Internet search Assignment	objective test Scenario	Written assignment Written exam paper Rubric for oral
Intellectual Skills	Brain storming Discussion Case study Role play Care Study Concept map	Cooperative group work Case study Assignment Internet search	Written exam Short answer questions Essay questions	Written Report Written assignment Quiz Written exam paper
Practical and Professional Skills	Case study Care study (direct patient contact Video Simulation	Case study Care study (direct patient contact Role play	Case study Practical exam	Observational checklist Portfolio Nursing care plan
General and Transferable Skills	Discussions	Assignment Cooperative group work Role play	Case study Practical exam	Observational checklist Portfolio Nursing care plan

Student's name ....Student's Signature..........
Instructor'name ....Instructor's Signature .... Date......../...../......

b. Intermediate interview – it takes place mid-way through practice experience. Student use the contract form to comment on what had been learnt/achieved during this practice experience, areas of strength, areas to develop/improve. Moreover, instructor comment on what the student has learnt/achieved during this practice experience, areas of strength, areas to develop and improve (and areas of concern if applicableStudent is making satisfactory progress at this stage of the practice experience so intended learning outcomes are achieved, if no, an action plan must be completed, and the link lecturer informed within 2 working days.

c. Action plan meeting; during this meeting both the studet and the instructor put a corrective action plan to over come the student weak points. This plan is reviewed and signed by the link lecturer supervising the clinical instructors. In addition, meetings with the students during office hours and academic advising hours were appointed upon students' needs.

Corrective action plan

Area of concern	Suggested Activities	Criteria for success-Evidence	Time frame	Achievement status
not able to demonstrate an adequate knowledge base regarding e.g. growth monitoring	-Plan for meeting with the lectuerer during office hrs. -Plan for online support sessions for low achievers -Plan for online peer learning -use concept maps and summarize content.	Verbal feedback from fieldwork instructor regarding the progress (oral exam) Personal reflection from the student	2 days	Completely Achieved / Partially achieved / Not achieved
Does not demonstrate (name of the procedure) performance at the foundation/advanced level of practice. Activities are not managed in a competent manner and the student	-Provide videos -Plan for peer learning -Alow the student to observe the instructor repeating the performance of the skill.	Observe the student Perform the skill (feedback of instructor regarding the progress)	2 days	Completely Achieved / Partially achieved / Not achieved
Unable to develop rapport with adult Clients	Role play with collegues Observe instructor Provide ethical conduct code or rules	Feedback from team members. feedback of instructor regarding the progress) Personal reflection from the student	At the third quarter of the rotation	Completely Achieved / Partially achieved / Not achieved

Student's name ....Student's Signature..........Instructor's name ....Instructor's Signature ....
Link lecturer's name .... link lecturer's Signature .... Date......../...../......

III: Evaluation phase: Tool IIMotivated Strategies for Learning Questionnaire (MSLQ), and Tool III Perceived Benefits of Contract Learning, and IV:Students' Learning Outcomes Evaluation Tool; were used as a post test among the study group. Wheras, Tool II, and IVwere used as a post test among the control group.

Ethical considerations

The researchers obtained the official permissions to conduct the study from the Dean of the Faculty and the head of the Community Health Nursing Department, at the Faculty of Nursing, Damanhour University. An individual informed consent was obtained from each student after full explanation of the study objectives and procedures. Students were reassured that participation is totally voluntary, that refusals or withdrawals have no consequences, and that the information would be strictly confidential and does not affect the assessment of their academic achievement

Statistical analysis of the data

Data were fed to the computer and analyzed using IBM SPSS software package version 20.0.(Armonk, NY: IBM Corp)The level of significance (p-value) was set at $\leq$ 0.05. The following statistical tests were used:

- **Qualitative data** were described using number and percent.Quantitative data were described using range (minimum and maximum), mean, standard deviation and median. Significance of

the obtained results was judged at the 5% level.

- **Analysis of numeric data: Chi-square test;** for categorical variables, to compare between different groups.**Fisher's Exact or Monte Carlo correction;** Correction for chi-square when more than 20% of the cells have expected count less than 5.**Student t-test;** for normally distributed quantitative variables, to compare between two studied groups.**Paired t-test;** for normally distributed quantitative variables, to compare between two periods.(Kotz et al. 2006, Kirkpatrick et al. 2013)

Results:

- Table (1): Clarifies absence of any significant differences between the study and control groups in relation to their personal profile. Where, 34.3% of the study group were males, compared to 38.1% of the control group. Nearly two thirds (65.7%) of the study group were females, compared to 61.9% of the control group.

- Furthermore, more than half of both study and control groups were in the age group 20-<22 years 58.1%, 52.4% respectively. And less than half of both groups (41.9%, and 47.6%) were in the age group of $\geq$ 22 years. In addition, more than half (58.1% & 52.4%) of students in study and control groups respectively had secondary school education. And less than half (41.9% and 47.6%) of both groups had Associate degree in nursing degree.

- **Table (2):** Shows that before the educational interventions there no statistical significance difference between the two groups in motivation scales value components scores.

- Among the study group there was statistical significance difference before and after the educational interventions in the following scale; **value components;** Intrinsic Goal Orientation, Extrinsic Goal Orientation, and Task Value, **expectancy components**; Control of Learning Beliefs and Self-Efficacy for Learning and Performance , and **affective expectancy; Test Anxiety** as well as Overall score of the first section of MSLQ (t=38.011, p<0.001), (t=52.560, p<0.001), (t=22.854, p<0.001), (t=23.054, p<0.001), (t=27.067, p<0.001), (t=13.924, p<0.001), and (t=38.901, p<0.001) respectively. In the control group there was statistical significance difference before and after the educational interventions in Intrinsic Goal Orientation, Expectancy Components Control of Learning Beliefs, and Overall score of the first section of MSLQ (t=33.196, p<0.001), (t=2.029, p<0.001), and (t=17.879, p<0.001) respectively.

- After the educational interventions there were statistical significance difference between the two groups in all scales of value components, expectancy components and affective expectancy as well as Overall score of the first section of MSLQ. (t=7.350, p<0.001), (t=44.753, p<0.001), (t=20.879, p<0.001), (t=3.336, p<0.001), (t=23.286, p<0.001), (t=10.042, p<0.001), and (t=28.227 p<0.001) respectively.

- After implementation of learning contract, the study group had higher means than the control group in scales of value components, expectancy components as well as Overall score of the first section of MSLQ. 17.22 ± 1.76, 19.76 ± 0.61, 23.50 ± 3.20, 16.78 ± 1.91, 29.05 ± 4.34, and 123.61 ± 7.98 respectively of the study group compared to 15.27 ± 2.08, 10.45 ± 2.04, 15.75 ± 2.04, 15.88 ± 2.02, 15.82 ± 3.88, and 87.33 ± 10.48 of the control group.

- There is stronger effect size of the educational interventions among the study group than the control group for all items of value components; Intrinsic Goal Orientation, Extrinsic Goal Orientation, and Task Value. (Effect size = 0.933, 0.964, 0.834 for study group VS Effect size = 0.914, 0.038, 0.028 for the control group). In addition, stronger effect size of the educational interventions among the study group than the control group existed in the expectancy components; Expectancy Components Control of Learning Beliefs and Self-Efficacy for Learning and Performance. (Effect size = 0.836, 0.876 for study group VS Effect size = 0.755, 0.019 for the control group). Affective component that is test anxiety 0.651 for study group VS 0.028 for the control group.
- **Table (3)** exhibits, before the educational interventions the control group had higher mean scores in Time and Study Environment, and Effort Regulation and the differences were statistically significant (t= 3.225, p= 0.002) and (t= 2.532, p=0.012). respectively.
- Among the study group there was statistical significance difference before and after the educational interventions in all scales of cognitive and metacognitive strategies namely; rehearsal, elaboration, organization, critical thinking, metacognitive self-regulation, time and study environment, effort regulation, peer learning, help seeking andoverall score of the second section of MSLQ. (t=42.469, p <0.001), (t=62.004, p <0.001), (t=47.812, p <0.001), (t=71.142, p <0.001), (t=66.182, p <0.001), (t=81.653, p<0.001), (t=60.471, p <0.001), (t=47.367, p <0.001), (t=63.904, p <0.001) , and (t=79.925, p<0.001) respectively. Furthermore, the same statistical significance difference existed among the control group (t=35.094, p<0.001) , (t=11.797, p

<0.001) , (t=2.169, p= 0.001), (t=9.994, p<0.001), (t=10.647, p<0.001), (t=2.175, p=0.001), (t=6.756, p <0.001) and (t=2.359, p= 0.020) , (t=8.823, p<0.001), (t=24.889, p <0.001) respectively.
- After the educational interventions there were statistical significance difference between the two groups in all scales of cognitive and metacognitive strategies as well as Overall score of the second section of MSLQ. In addition, students of the study group had higher mean scores in the previously mentioned scales (t=2.813, p= 0.005), (t=25.036, p= 0.001), (t=42.821, p<0.001), (t=61.522, p<0.001), (t=55.280, p<0.001), (t=61.051, p<0.001), (t=37.824, p<0.001), (t=51.306, p<0.001), (t=35.422, p<0.001), and (t=67.00, p<0.001) respectively.
- After implementation of learning contract, the study group had higher means than the control group in all scales of cognitive and metacognitive strategies; 19.28 ± 1.0, 28.84 ± 1.80, 19.38 ± 0.90, 23.97 ± 1.16, 55.74 ± 2.33, 35.01 ± 2.13, 16.91 ± 1.32, 14.50 ± 1.02, 18.10 ± 0.94, and 231.7 ± 9.98 of the study group compared to 18.75 ± 1.63, 17.69 ± 4.20, 9.41 ± 2.21, 10.06 ± 2.01, 26.85 ± 4.82, 13.77 ± 2.86, 7.29 ± 2.25, 5.93 ± 1.37, 9.34 ± 2.35, and 117.6 ± 14.33 of the control group.
- There was strong effect size of the educational interventions among the study group in all scales of cognitive and metacognitive strategies as well as Overall score of the second section of MSLQ. In the control group the strong effect size noticed in rehearsal and Overall score of the second section of MSLQ but it was stronger among the study group.

- **Table (4):** reflects that more than three quarters of the students 79.0% perceived high benefits in relation to their ability to use the learning contract, autonomy in learning 81.9%, motivation in

learning78.1%, as well as applying theory to practice 78.1%. moreover, the highest mean among the student perceived benefit was among effects on student motivation in learning parameter 85.48±22.81, followed by Effects on applying theory to practice, Effects on student autonomy in learning, and Ability to use the learning contract 81.24±20.76, 76.07±12.99, and 69.66±18.33 respectively.

- **Table (5)** reveals that**;** regarding the **Case Presentation**, **Health class evaluation**, **Problem oriented record**, as well as the **Overall school performance**, there was a statistical significant difference in the levels of performance between the study and the control group (χ^2=6.656*, p =0.024*, χ^2=51.169*, p <0.001*, χ^2=94.898*, p<0.001*, χ^2=26.937*, p<0.001*,38.482*, p<0.001) respectively where, students of the study group got significantly higher percentage in excellent score (89.5%, 38.1%, 19.0%, 88.6%, and 28.6) compared to 85.7%, 1.9%, 1.9%, 65.7%, 1.9% of the control group respectively. Meanwhile students of the control group got significantly higher percentage in excellent score in **written exam** 88.6% Vs 65.7% for the control group.

- **Table (6):** shows thatThere were significant positive but weak correlation between self-efficacy for learning and performance and both health class evaluation and written exam parameters of students' learning outcomes (r=0.216, p=0.002) and (r=0.271, p=0.005) respectively. Furthermore, significant positive weak correlation existed between overall score of the first section of MSLQ and both health class evaluation and written exam parameters of students' learning outcomes (r=0.208, p=0.033) and (r=0.254, p=0.009) respectively.

- **Table (7):** denotes significant positive but weak correlation between rehearsal and the following parameters of students' learning outcomes; case presentation, problem-oriented recording, behavior evaluation, and overall school performance (r=0.221, p=0.023), (r=0.208 p=0.033), (r=0.277, p=0.004), and (r=0.241, p=0.013) respectively.

- Moreover, significant positive but weak correlation existed between elaboration and the same previously mentioned learning outcomes; case presentation, problem-oriented recording, behavior evaluation, and overall school performance (r=0.249, p=0.011), (r=0.245, p=0.012), (r=0.323, p=0.001), and (r=0.291, p=0.003) respectively. The same parameters respectively significant positive but weak correlation with Organization parameter of Cognitive and metacognitive strategies; (r=0.203, p=0.038), (r=0.235, p=0.016), (r=0.262, p=0.007), and (r=0.246, p=0.011) respectively.

- There were significant positive but weak correlation between time and study environment and the written exam parameter of students' learning outcomes (r=0.215, p=0.027). In addition, significant positive but weak correlation existed between Effort Regulation and Health Class Evaluation, Written exam parameter of students' learning outcomes (r=0.364 and p=0.001), and (r=0.226, p=0.020) respectively.

- There were significant positive but weak correlation between Peer Learning and the following parameters of students' learning outcomes; case presentation, health class, problem-oriented recording, behavior evaluation, and overall school performance (r=0.267, p=0.006), (r=0.213 p=0.029), (r=0.243, p=0.013), (r=0.334, p=0.001) and (r=0.289, p=0.003) respectively.

- In addition, significant positive but very weak correlation existed between Overall score of the second section of MSLQ and behavior evaluation parameter of students' learning outcomes (r=0.193, p=0.048) and significant positive weak correlation noticed between Overall score of the second section of MSLQ and Overall school performance (r=0.201, p=0.039).

Table (1): Distribution of nursing students among the intervention and control groups according to their personal profile data

Personal profile data	Study (n = 105)		Control (n = 105)		χ^2	p
	No.	%	No.	%		
20-<22 years	61	58.1	55	52.4	0.693	0.405
≥ 22 years	44	41.9	50	47.6		
Mean ± SD	21.42±0.50		21.48±0.51		t = 0.830	0.407
Gender						
Male	36	34.3	40	38.1	0.330	0.566
Female	69	65.7	65	61.9		
Previous academic degree						
Secondary school	61	58.1	55	52.4	0.693	0.405
Associate degree in nursing	44	41.9	50	47.6		

χ^2: Chi square test   t: Student t-test

Table (2): Comparison between the study and control groups according to motivation scales value components pre and post the educational interventions

Motivation scales value components		Study (n = 105)		t_3 (p_3)	Effect size (η^2)	Control (n = 105)		t_3 (p_3)	Effect size (η^2)	t(p_1)	t(p_2)
		Pre	Post			Pre	Post				
		Mean ± SD.	Mean ± SD.			Mean ± SD.	Mean ± SD.				
value components	Intrinsic Goal Orientation	7.33 ± 2.11	17.22 ± 1.76	38.011* (<0.001*)	**0.933**	7.51 ± 2.51	15.27 ± 2.08	33.196* (<0.001*)	**0.914**	0.566 (0.572)	7.350* (<0.001*)
	Extrinsic Goal Orientation	10.54 ± 1.83	19.76 ± 0.61	52.560* (<0.001*)	**0.964**	10.37 ± 2.10	10.45 ± 2.04	2.029* (0.045*)	**0.038**	0.631 (0.529)	44.753* (<0.001*)
	Task Value	15.65 ± 1.96	23.50 ± 3.20	22.854* (<0.001*)	**0.834**	15.58 ± 2.25	15.75 ± 2.04	1.733 (0.086)	**0.028**	0.229 (0.819)	20.879* (<0.001*)
expectancy components	Control of Learning Beliefs	10.84 ± 2.27	16.78 ± 1.91	23.054* (<0.001*)	**0.836**	11.20 ± 2.57	15.88 ± 2.02	17.879* (<0.001*)	**0.755**	1.082 (0.280)	3.336* (0.001*)
	Self-Efficacy for Learning and Performance	15.42 ± 3.43	29.05 ± 4.34	27.067* (<0.001*)	**0.876**	15.73 ± 3.96	15.82 ± 3.88	1.412 (0.161)	**0.019**	0.614 (0.540)	23.286* (<0.001*)
affective expecta	Test Anxiety	17.30 ± 1.92	13.44 ± 2.41	13.924* (<0.001*)	**0.651**	14.17 ± 2.56	13.96 ± 2.59	1.734 (0.086)	**0.028**	1.517 (0.131)	10.042* (<0.001*)
Overall score of the first section of MSLQ		73.22 ± 11.25	123.61 ± 7.98	38.901* (<0.001*)	**0.936**	74.72 ± 13.30	87.33 ± 10.48	28.788* (<0.001*)	**0.889**	0.885 (0.377)	28.227* (<0.001*)

p_1: p value for comparing between the two studied groups pre- the educational intervention.

p_2: p value for comparing between the two studied groups post the educational intervention

p_3: p value for **Paired t-test** for comparing between pre and post the educational interventions in each group

t: **Student t-test**   *: Statistically significant at $p \leq 0.05$

η^2: Eta square Effect size test = indicate to which extent the intervention is effective. = $0.2 \leq 0.5$ weak effect ** = $0.5 \leq 0.8$ moderate effect *** = $0.8 \leq 1$ Strong effect

Table (3): Comparison between the study and control groups according to cognitive and metacognitive strategies pre and post the educational interventions

Cognitive and metacognitive strategies	Study (n = 105)				Control (n = 105)				t(p₁)	t(p₂)
	Pre	Post	$t_3(p_3)$	Effect size (η^2)	Pre	Post	$t_3(p_3)$	Effect size (η^2)		
	Mean ± SD.	Mean ± SD.			Mean ± SD.	Mean ± SD.				
Rehearsal	9.18 ± 2.09	19.28 ± 1.0	42.469* (<0.001*)	0.945	8.76 ± 2.07	18.75 ± 1.63	35.094* (<0.001*)	0.922	1.461 (0.146)	2.813* (0.005*)
Elaboration	13.07 ± 1.58	28.84 ± 1.80	62.004* (<0.001*)	0.974	12.72 ± 1.20	17.69 ± 4.20	11.797* (<0.001*)	0.572	1.770 (0.078)	25.036* (<0.001*)
Organization	9.03 ± 1.91	19.38 ± 0.90	47.812* (<0.001*)	0.956	9.31 ± 2.21	9.41 ± 2.21	2.169* (0.032*)	0.043	1.001 (0.0.318)	42.821* (<0.001*)
Critical Thinking	8.84 ± 1.46	23.97 ± 1.16	71.142* (<0.001*)	0.980	8.70 ± 1.52	10.06 ± 2.01	9.994* (<0.001*)	0.490	0.648 (0.518)	61.522* (<0.001*)
Metacognitive Self-Regulation	23.34 ± 3.35	55.74 ± 2.33	66.182* (<0.001*)	0.977	24.03 ± 3.29	26.85 ± 4.82	10.647* (<0.001*)	0.522	1.497 (0.136)	55.280* (<0.001*)
Time and Study Environment	12.50 ± 1.83	35.01 ± 2.13	81.653* (<0.001*)	0.985	13.59 ± 2.96	13.77 ± 2.86	2.175* (0.032*)	0.044	3.225* (0.002*)	61.051* (<0.001*)
Effort Regulation	5.88 ± 0.93	16.91 ± 1.32	60.471* (<0.001*)	0.972	6.25 ± 1.18	7.29 ± 2.25	6.756* (<0.001*)	0.305	2.532* (0.012*)	37.824* (<0.001*)
Peer Learning	5.86 ± 1.29	14.50 ± 1.02	47.367* (<0.001*)	0.956	5.78 ± 1.41	5.93 ± 1.37	2.359* (0.020*)	0.051	0.408 (0.684)	51.306* (<0.001*)
Help Seeking	7.49 ± 1.04	18.10 ± 0.94	63.904* (<0.001*)	0.975	7.45 ± 1.54	9.34 ± 2.35	8.823* (<0.001*)	0.428	0.210 (0.834)	35.422* (<0.001*)
Overall cognitive and metacognitive strategies	94.81 ± 9.46	231.7 ± 9.98	79.925* (<0.001*)	0.945	96.53 ± 9.85	117.6 ± 14.33	24.889* (<0.001*)	0.856	1.293 (0.197)	67.00* (<0.001*)

p₁: p value for comparing between the two studied groups pre- the educational intervention. p₂: p value for comparing between the two studied groups post intervention p₃: p value for **Paired t-test**for comparing between pre- and post the educational interventions in each group

t: **Student t-test**   *: Statistically significant at $p \leq 0.05$

η^2: Eta square Effect size test = indicate to which extent the intervention is effective. = $0.2 \leq 0.5$ weak effect ** = $0.5 \leq 0.8$ moderate effect *** = $0.8 \leq 1$ Strong effect.

Table (4): Perceived benefits of learning contract among the study group (n = 105)

Parameters of learning contract benefits	Low		Moderate		High		Mean ± SD.
	No.	%	No.	%	No.	%	
Ability to use the learning contract	4	3.8	18	17.1	83	79.0	69.66±18.33
Effects on student autonomy in learning	0	0.0	19	18.1	86	81.9	76.07±12.99
Effects on student motivation in learning	5	4.8	18	17.1	82	78.1	85.48±22.81
Effects on applying theory to practice	6	5.7	17	16.2	82	78.1	81.24±20.76
Overall perceived benefit score	**0**	**0.0**	**27**	**25.7**	**78**	**74.3**	**75.48±14.67**

Table (5): Comparison between the study and control groups according to learning outcomes post the educational interventions

Students' learning outcomes parameters	Study (n = 105)		Control (n = 105)		χ^2	p
	No.	%	No.	%		
Presentation						
Good (65 - <75%)	4	3.8	0	0.0	6.656*	MCp= 0.024*
Very good (75- <85%)	7	6.7	15	14.3		
Excellent (≥85%)	94	89.5	90	85.7		
Health class evaluation						
Fail (<60%)	1	1.0	6	5.7	51.169*	MCp <0.001*
Pass (60 – <65%)	1	1.0	1	1.0		
Good (65 - <75%)	56	53.3	87	82.9		
Very good (75- <85%)	7	6.7	9	8.6		
Excellent (≥85%)	40	38.1	2	1.9		
Problem oriented recording						
Fail (<60%)	21	20.0	4	3.8	94.898*	<0.001*
Pass (60 – <65%)	16	15.2	6	5.7		
Good (65 - <75%)	16	15.2	86	81.9		
Very good (75- <85%)	32	30.5	7	6.7		
Excellent (≥85%)	20	19.0	2	1.9		
Written exam						
Fail (<60%)	5	4.8	0	0.0	26.937*	<0.001*
Pass (60 – <65%)	10	9.5	0	0.0		
Good (65 - <75%)	11	10.5	1	1.0		
Very good (75- <85%)	10	9.5	11	10.5		
Excellent (≥85%)	69	65.7	93	88.6		
Behavior evaluation sheet						
Good (65 - <75%)	86	81.9	95	90.5	4.417	MCp= 0.102
Very good (75- <85%)	16	15.2	10	9.5		
Excellent (≥85%)	3	2.9	0	0.0		
Overall school						
Pass (60 – <65%)	0	0.0	1	1.0	38.482*	MCp <0.001*
Good (65 - <75%)	9	8.6	3	2.9		
Very good (75- <85%)	66	62.9	99	94.3		
Excellent (≥85%)	30	28.6	2	1.9		

χ^2: **Chi square test**   MC: **Monte Carlo**
p: p value for comparing between the two studied groups
*: Statistically significant at $p \leq 0.05$

Table (6): Correlation between students' motivation scales value components and learning outcomes parameters in study group post the educational intervention (n = 105).

Motivation scales value components		students' learning outcomes parameters					
		Case Presentation	Health Class Evaluation	Problem Oriented Recording	Written exam	Behavior Evaluation	Overall school performance
Intrinsic Goal Orientation	r	0.005	-0.102	0.014	0.093	-0.056	-0.032
	p	0.961	0.301	0.888	0.346	0.569	0.748
Extrinsic Goal Orientation	r	-0.089	-0.013	0.056	0.006	-0.004	0.000
	p	0.368	0.897	0.570	0.948	0.969	0.997
Task Value	r	0.023	-0.144	0.053	0.164	0.002	0.005
	p	0.813	0.143	0.588	0.094	0.984	0.956
Expectancy Components Control of Learning Beliefs	r	-0.028	-0.013	-0.028	0.016	-0.016	-0.023
	p	0.779	0.893	0.775	0.875	0.874	0.812
Self-Efficacy for Learning and Performance	r	0.125	0.216*	0.154	0.271*	0.103	0.087
	p	0.204	0.002*	0.118	0.005*	0.295	0.380
Test Anxiety	r	0.024	-0.010	0.102	0.066	0.098	0.092
	p	0.807	0.917	0.301	0.501	0.322	0.349
Overall score of the first section of MSLQ	r	0.071	0.208*	0.130	0.254*	0.064	0.360*
	p	0.474	0.033*	0.186	0.009*	0.517	0.001*

r: Pearson coefficient

*: Statistically significant at $p \leq 0.05$

0.00-0.19: "veryweak"   0.20-0.39: "weak"   0.40-0.59: "moderate"

0.60-0.79: "strong"0.80-1.0: "verystrong"

Table (7): Correlation between cognitive and metacognitive strategies and learning outcomes in study group post the educational intervention (n = 105)

Cognitive and metacognitive strategies		students' learning outcomes parameters					
		Case Presentation	Health Class Evaluation	Problem Oriented Recording	Written exam	Behavior Evaluation	Overall school performance
Rehearsal	r	0.221*	0.147	0.208*	-0.028	0.277*	0.241*
	p	0.023*	0.136	0.033*	0.776	0.004*	0.013*
Elaboration	r	0.249*	0.188	0.245*	-0.028	0.323*	0.291*
	p	0.011*	0.055	0.012*	0.777	0.001*	0.003*
Organization	r	0.203*	0.126	0.235*	-0.014	0.262*	0.246*
	p	0.038*	0.201	0.016*	0.889	0.007*	0.011*
Critical Thinking	r	0.135	0.033	0.132	0.028	0.185	0.158
	p	0.171	0.737	0.180	0.777	0.058	0.107
Metacognitive Self-Regulation	r	-0.025	-0.141	0.054	0.130	0.002	0.043
	p	0.801	0.152	0.585	0.186	0.986	0.664
Time and Study Environment	r	-0.019	-0.180	0.078	0.215*	0.073	0.109
	p	0.846	0.066	0.427	0.027*	0.458	0.270
Effort Regulation	r	-0.096	0.364*	0.040	0.226*	-0.024	0.042
	p	0.329	0.001*	0.682	0.020*	0.805	0.672
Peer Learning	r	0.267*	0.213*	0.243*	-0.055	0.334*	0.289*
	p	0.006*	0.029*	0.013*	0.578	0.001*	0.003*
Help Seeking	r	0.050	-0.083	0.139	0.145	0.130	0.158
	p	0.616	0.400	0.156	0.140	0.186	0.108
Overall score of the second section of MSLQ	r	0.112	-0.024	0.173	0.110	0.193*	0.201*
	p	0.255	0.808	0.077	0.266	0.048*	0.039*

r: Pearson coefficient

*: Statistically significant at $p \leq 0.05$

0.00-0.19: "veryweak"   0.20-0.39: "weak"   0.40-0.59: "moderate"

0.60-0.79: "strong"   0.80-1.0: "verystrong"

Discussion

Learning contracts have been advocated as a solution to problems plaguing educators more often than all other teaching strategies and methods combined. The existing literature suggests that learning contracts can be a means to get students on a path towards self-direction by increasing commitment and, thus, motivation and performance. (**Jones and Rye2008, Boak; Frank and Scharff 2013**). The aim of this study was to determine the effect of learning contract educational strategy on students' motivation and learning outcomes of

students' enrolled in community health nursing course.

As revealed in the current study, there is a statistically significant difference after implementingthe educational interventions among both groups related to value components of MSLQ, in favor of the learning contract group. Moreover, stronger effect size of the educational interventions among the study group than the control group for all items of value components; Intrinsic Goal Orientation, Extrinsic Goal Orientation, and Task Value. This goes in line with the study of **Kivinen in 2003** who emphasized high value components motivation scales that had been associated with increased

involvement in learning and higher academic achievement. (**Kivinen, 2003**).

Results of the present study are justified based on constructivist theory, students take an active role in constructing new knowledge. When students perceive valuable and meaningful learning tasks, they will actively engage in the learning tasks, using active learning strategies to integrate their existing knowledge with new experience. (**Le Cornu and Peters 2005**) Moreover, the learning contract encouraged the internal goal of motivation to learn besides increasing the awareness of the students about the value and usefulness of the achieved task. There fore, the learning contract which include the provision of tasks and activities that are interesting, and personally meaningful in some manner, help to increase intrinsic, extrinsic goal orientation and task value (**Sungur 2007**).These value components include a need to know about something; the desire to engage in learning; and desire to achieve the learning outcomes

There was no significant correlation between any of the value components of motivation and any of the students' learning outcomes parameters used in this study. This finding parallels the work of **Fathi in 2015** who reported that value components did not have a direct influence on student achievement.(**Fathi 2015**).On the contrary, **Pintrich et al. in 1993,** used this inventory in a study to show predictive validity of school achievement. In this study, they found that intrinsic goal orientation, along with other variables, was positively related to achievement. (**Pintrich, 1993**).

Findings of the current study denoted that there is a statistically significant difference after implementing the educational interventions related to the expectancy components of MSLQ in favor of the learning contract group, including control of learning beliefs and self-efficacy for learning and performance. In addition, there were

significant positive correlation between self-efficacy for learning and performance and both health class evaluation and written exam parameters of students' learning outcomes These results are consistent with those of **Pintrich in 2004** which denoted that expectancy component were correlated with academic performance that was measured by in class seat work, homework, quizzes and tests. Furthermore, the previous study clarified an explanation, as students who believed they were capable were more likely to report use of cognitive strategies, to be more self-regulating in terms of reporting more use of metacognitive strategies, and to persist more often at difficult or uninteresting academic tasks. (**Pintrich 2004**).

Control of learning beliefs relates to student's perception to have control over the learning ability. Persons with internal locus of control feature successes and failures to their own behaviors while students with external locus of control attribute their successes or failures to external factors that might be luck or chance. In learning contract students learn how to organize their tasks to achieve learning outcomes. Every single activity was planned. If students feel that their efforts will result in accomplishing the task, which increase their control of learning. Regarding self-efficacy of learning and performance. In general, self-efficacy is referred to as people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. (**Al-Harthy, and Christopher 2010).**

The strength of one's self-efficacy is determined by previous performance or accomplishments. This explains why participation of students in their action plans to correct the inappropriate performance according to the predetermined learning outcomes have apparent roles in motivating their learning. Another justification was reported by McCabe, et al. as, sometimes, instructors' goals differ from their students,

but by creating learning contracts, an instructor can establish conditions to make both the instructor's target behavior (e.g. learning through reading and homework) and the students' target outcome (e.g. a good grade) more likely. (McCabe, et al, 2005) Thus, behaviors and outcomes would be mutually beneficial to the instructor and students. Aligned goals like these can lead to "powerful learning" and increased self-efficacy. (**Millet, 2010**)

Test anxiety was significantly decreased post the implementation of the learning contract. This result is along with that of **Pintrich 2004** by the importance of affect and feelings in enhancing the learners to accomplish their goals and lead them to gain different types of information as well as behaviors. Test anxiety is an unpleasant feeling or emotional state students display when completing tests or other cognitive measures (**Pintrich 2004**). Test anxious students are believed to have difficulty utilizing self-regulated learning strategies. Students exhibiting high test anxiety may perform poorly on exams despite having good study or perform poorly because of poor strategy use. (**Bone, 2014**).

Regarding, cognitive and meta-cognitive learning strategies, the learning contract group proved that they were having better learning strategies that enhanced motivation during the learning experience than the control group. Furthermore, findings denoted significant positive weak correlation between Overall score of the second section of MSLQ and overall school performance parameter. These findings were consistent to those of **Pintrich and De Groot, 1990** who reported that the findings for the cognitive variables provide ecologically valid data on academic performance on actual classroom tasks in support of a general model of self-regulated learning. (**Pintrich and De Groot, 1990)** Students who were more cognitively engaged in trying to learn by memorizing, organizing, and transforming classroom materialusing rehearsal, elaboration, and

organizational cognitive strategies performed better than students who tended not to use these strategies (**Scriven and Paul 2012**).

During the implementation of the contract two forms were used;the negotiated map to fulfill the intended learning outcomes, that constituted; Intended learning outcomes, Teaching and learning methods, Learning activities and resources, Evaluation methods, and Evidence. As well as, the corrective action plan that specified; Areas of concern, Suggested Activities, Criteria for success-Evidence, Time frame, and Level achieved. In theses forms all activities of cognitive strategies were incorporated and apllied.**Rehearsal** include advising students to repeat material for learning that helped students to attain the intended learning outcomes. **Organization**, strategy includes methods of outlining, taking notes, mapping or connecting key ideas in learning material. **Critical Thinking** involves applying learned information to knowledge of new situations. The community health nursing department designed in the students log book the list of prerequisites of learning outcomes. The evaluation system incorporated the application of all knowledge into real situations. And the assessment mainly authentic in nature to test knowledge, skills, and attitudes in real life situations. (**Sungur, 2007**)

Metacognitive Self-Regulation in the present study knowledge of cognition refers to knowledge about tasks, strategies, instructional plans, and goals; while regulation of cognition refers to goal setting, planning, monitoring one's understanding, and evaluating progress towards the completion of the task that was conducted during the learning contract intervention (**Flavell 1992**). **Time and Study Management** comprised different approaches to manage and control time, effort, study environment as well as prioritizes learning tasks. In the contract forms time limits were specified to attain the ILOs (Pintrich1994).**Effort Regulation,**

enhances the ability of the learner to handle setbacks and failures within the learning process by correctly allocating resources and appropriate effort for more successful learning in the future (**Cheang, 2009**).**Peer Learning,** involves using peers to collaboratively understand course material or information to be learned. In the present study, students grapple with material and tasks in collaboration with their peers they are pushed to consider alternate ideas and perspectives, be responsible to others, and engage in critical and divergent thinking and, therefore, be intellectually enriched. (**Nitta, 2010, Lasry et al. 2008) Help Seeking,** reach out for assistance and who students seek help from. Research suggests that students with higher levels of self-efficacy appear more likely to seek help when they need it than students who are less efficacious. Students who judge their competencies negatively tend to avoid asking others for help **(Roth2007).**

Findings of the present study denoted better level of attained learning outcome of the learning contract group as they had significantly higher excellent scores in Case Presentation, Health class evaluation, Problem oriented recording as well as the overall school performance. These results were consistent with those of Frank and Scharff in 2013 who reported that the contract group improved 7.2percentage points from the first exam to the final, starting lower and finishing higher than theControl Group Low Performers, who improved 2.4 percentage points. This supports the hypothesis that those who sign a contract would show greater improvement than those who did not sign a contract. (Frank and Scharff in 2013)

Findings were in harmony with those of Jones and Rye in 2008 in the study titled" Perceived Benefits of the Use of Learning Contractsto Guide Clinical Education in Respiratory Care Students". Researchers reported that, contract learning was implementedinto the curriculum to promote self-directed learning andlifelong learning behaviors. Students were provided traditionalclinical experiences in Clinical Practicums I, II, andIII. Clinical Practicum IV (in the final semester of theprogram) required use of a learning contract to guide theclinical experience. The overall expectation was that thestudent would demonstrate registry-level competency bythe summation of Clinical Practicum IV. Competency wasfurther tested with the National Board for Respiratory CareWritten Registry and Clinical Simulation examinations.Results denoted the positive effect of learning contract on students' competencies that were evaluated by both written exam and practicum exams. (Jones and Rye, 2008)

The results of the present study regarding the higher level of the previously mentioned learning outcome parameters could be related to, commitment of the study group to plan to achieve the intended learning outcomes as a part of the contract plan, thus motivate them to be positive to make decisions and actions or to take corrective actions with belief in their abilities to achieve more learning outcomes. On the other hand, students of the control group got significantly higher score in written exam as one of learning outcomes parameters. This could be related to the higher mean score of test anxiety among the study group. Another justification could be because students used to achieve better in tasks that depends on social and cooperative cohesion in groups. Written exam was the only completely individualized task or mission assigned on the contract. (Jones and Rye, 2008)

Results of the present study revealed that, the students perceived benefits of the contact was evaluated according to four parameters; more than three quarters of the students perceived high benefits in relation to their ability to use the learning contract, autonomy in learning, motivation in learning,

as well as applying theory to practice. This result is somewhat consistent with to the findings of Jones and Rye in 2008 the respondents were overall quite optimistic regarding learning contracts.They generally agreed that they could use the learning contract with confidence and that there isan increase in student autonomy and motivation in scholarship with a learning contract. Therefore, contract learning is favorable to students' knowledge and skill acquisition and can beincorporated into clinical education of respiratory care students. (Jones and Rye 2008)

Conclusions and Recommendations;

It can be concluded from the present study that learning contract strategy is an effectual strategy in improvement of nursingstudents' motivation and learning outcomes. After implementation of learning contract, the study group had higher means than the control group in scales of MSLQ. There is stronger effect size of the educational interventions among the study group than the control group on all items of MSLQ. Students of the study group got significantly higher percentage in excellent score than the control group in Presentation, Health class evaluation, and Problem oriented recording parameters of students learning out comes.Accordingly, the study hypothesis was accepted.

Based on the findings of the present study, the following are recommended:

(1) Implementation of learning contract strategy on first year students to prepare the nursing students for independent and lifelong learning.

(2) Training workshops focusing on learning contracts be conducted for nurse educators to prepare them for their role as facilitators.

(3) Learning contract guideline is designated and published on the Faculty website.

(4) Integration of students' self-assessments and peer assessments in the implementation of the learning contract.

Recommendation for further studies:

(1) Perceived benefits of the use of learning contracts to guide clinical education: A qualitative study.

(2) Impacts of learning contracts on nursing student behaviors and academic achievement: A longitudinal study

(3) The effect of learning contract strategy versus conventional strategies on nursing students' learning engagement and academic achievement.

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