

## The Effect of Self- Learning Package Versus Lecture Method on Students' Intended Learning Outcomes

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**Abstract:** In light of the fact that learning is a process that involves active knowledge development rather than the passive absorption of information, teachers should realize that it is more effective if the students are asked to perform rather than just asked to remember some information. Self-learning activity is a technique which involves the use of instructional materials designed, so that students can learn either without a teacher's intervention or with minimum guidance. The materials include a set of stimuli, provision for/of responses, feedback and test or self-assessment packages. Present study has been conducted in order to evaluate the effect of self-learning package versus lecture method on students' learning outcomes. The study utilized a quasi-experimental research design (pre-posttest). Purposive sample was consisted of pediatric nursing students from two semesters in academic year. The study was conducted in the faculty of nursing at Cairo University. The required data was collected using the following tools, a self-administered structured questionnaire for Sociodemographic characteristics of students, intended learning outcomes achievement sheet through a self-administered structured exam (pretest and posttest) and student's satisfaction with learning method Scale. The study results revealed that there was significant difference found between students post-test scores in self-learning group regarding to intended learning outcomes achievement compared to lecture group. No significant difference was found between two methods in knowledge skills achievement but there was statistical significant difference regarding application and evaluation skills in self-learning group. The findings also showed that students in self-learning method showed more satisfaction than lecture group in learning independency and achievement of intended learning outcomes. There was also positive correlation between student's satisfaction and intended learning outcomes achievement in lecture and self-learning groups. These results supported the proposed study hypotheses. It was recommended that use self- learning method as a complementary method beside traditional in-class approach with appropriate assessment of student readiness and learning needs to provide valuable data for curriculum development.

**Key words:** Self Learning Package • Lecture Method • Intended Learning Outcomes • Students Satisfaction

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### INTRODUCTION

Learning has been defined as changing of the behavior as a result of experience and learning process, creation method and using the acquired concepts and also discovering, refining and developing scientific concepts by the learner. Creating a background for learning and planning an effective learning environment is one of the responsibilities of the trainers and it is especially of prime importance in teaching nursing. Nursing educators continually seek effective teaching strategies to enhance student's learning abilities [1]. The traditional education system has used the traditional

instruction lecture method to enable students to acquire knowledge. According to Sterman *et al.* [2], nursing school instructors continue to lecture to the students despite the National League of Nursing Accreditation Council (NLNAC) promotion and innovation of new teaching strategies. The traditional lecture method involves the presence of students and teachers in a classroom; the teacher imparts knowledge by providing verbalization of the information to the student [3]. The traditional lecture method of instructing students has ceased to be the sole manner of equipping students with necessary knowledge, although the method is not always cost-and time-effective [4]. The lecture method of

instruction requires that nursing students and the instructor be together in a given venue in order for the learning process to occur [5].

Nurse educators have traditionally relied on a teacher-centered lecture instructional model where the instructor is the content expert, while the students are the passive learners [6]. Although lecture-based teaching strategy (LB) used for decades as an effective way to help students acquire new knowledge [6, 7], many educators argue that this teaching model is mostly static, passive and not suitable for teacher candidates preparing for extended field experience and careers in teaching. Students reported also that the information delivered during lectures may come too slowly or cover what they already know; other students have trouble taking in information so rapidly, or they may lack the prior knowledge needed to understand the presented content [8]. At the same time [9] stated that teachers and clinical instructors working at the various nursing schools have frequently reported that their nursing students are dependent on teachers for acquiring information and that there is little student preparation for and participation in classroom sessions, they believe that professional nurses ought to be independent decision makers, learners and care providers. Therefore, they question whether a dependent learner would be able to pursue the role of an autonomous professional nurse. The development of student-centered learning in the academic setting focuses on the needs, abilities and interests and, learning styles of the students; the teacher acts only as a facilitator of learning [5]. A student-centered learning environment is primarily focused on the active role of the student; this environment makes the student responsible for their own learning [5]. Self-learning package provides a form of instructional methodology that gives learners an opportunity to work individually according to their special needs. The advantage of self-learning package is attractive to the self-motivated learner who has already self-identified knowledge gaps with a planned approach of gaining the missing knowledge [10]. With self-learning package, learners study by themselves using textbooks and hand out notes or lectures prepared by the teachers. However, self-study limits the interactive face-to-face nature of the learning environment; this limits teachers' guidance in critical thinking exercises and thereby alters the nature of the teacher-learner relationships. The lack of face-to-face interaction may be overcome by the package content delivery. Describing the learning or the necessary information in a story-like manner simulates human interaction; thus, scenarios are an option when creating

the humanistic paper learning approach. The nursing students are able to learn effectively with self-study techniques, self-motivated learner with clearly delineated learning goals and objectives, a self-learning packet can support knowledge acquisition [10]. Student learning outcomes or SLOs are statements that specify what students will know, be able to do or be able to demonstrate when they have completed or participated in a program/activity/course/project. Outcomes are usually expressed as knowledge, skills, attitudes or values [11]. Student learning outcomes are used to express the results that expected of undergraduates to gain through their educational experiences. These institution-level student learning outcomes were developed by faculty from a wide array of disciplines and were guided by input from former students and employers. As a result, these outcomes encompass skills considered critically important for baccalaureate graduates as they begin productive and impactful careers. Student learning outcomes describe in detail the behaviors that students will be able to perform at the conclusion of a unit of instruction such as a class and the conditions and criteria which determine the acceptable level of performance. Also addresses the context or performance setting in which the performance demonstration occurs. The author suggests a range of performance contexts from that of demonstrations of classroom learning to those which involve living successfully in the larger society. Thus, his highest level outcomes refer to generic skills such as the preparation of learners to be problem solvers, planners, creators, learners and thinkers, communicators etc., regardless of subject areas studied [11].

In TUNING PROJECT 2000 – 2006 define learning outcomes as statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of learning. They can refer to a single course unit or module or else to a period of studies, for example, a first or a second cycle program. Learning outcomes specify the requirements for award of credit. Learning outcomes are formulated by academic staff [11]. In Egypt The National Quality Assurance and Accreditation Committee in Collaboration with British Consultants in Higher Education [12] Define intended learning outcomes (ILO<sub>s</sub>) are the knowledge, understanding and skills which the institution intends to have been gained by the students completing the course for its program that are mission-related; reflect the use of external reference standards at appropriate level. Regarding to Higher Education Reform in Post-Revolution in Egypt Perzigian [13] wrote a report and emphasized that effectively reform

Egyptian education requires more than modernization of the curriculum. It also requires radically different approaches to teaching methods or pedagogy. Lecture - based focused primarily on the delivery, the robotic memorization and regurgitation of information the instructor deems important. Today's lecture-dominated classrooms are failing to develop the critical thinking and necessary intellectual skills. Passive, lecture-based learning does not prepare graduates who are able to apply knowledge and solve problems, skills critical in the modern world. Egypt's classrooms must focus on cultivating critical thinking and rational thought that encourage innovation, creativity and, ultimately, economic development. Active learning pedagogies are well known to enhance student learning both inside and outside of the classroom. we can create opportunities for undergraduate research as part of course requirements Finally, the classroom experienced can be enriched and the delivery of the curriculum modernized through innovative uses of online resources and through innovative assignments requiring problem-based learning that requires students to use knowledge, not just recite it. Making these changes requires more effort by the teacher or the professor, but the reward in terms of student learning and intellectual development will prepare students for productive roles in the modern world. Abdelaziz *et al.* [14] stated that to improve the use of existing knowledge and to facilitate more effective acquisition of new knowledge, nursing educational organizations require research in curricular models and pedagogies that depart from traditional lecture-style learning paradigms. New methods of instruction have emerged, with many learning institutions embracing advanced technology and modern instruction models [15], these paradigms have long been the cornerstone of nursing education programmes. Evidence-based research has demonstrated. The number of empirical studies related to student-centered teaching within nursing education has increased in recent years [16]. Two studies reported that students achieved higher skill performance scores using self-learning module compared with conventional learning methods [17, 18]. Equivalent results in skill performance outcomes were found in some studies, [18, 19]. Whereas lower skill performance outcomes for students taught using CAL module were reported in other study [20]. In this study, the effect of teacher-centered (lecture) and student-centered (self-learning) methods on the students' learning outcomes was compared. The knowledge acquired will enable the pediatric nursing student to early identify children with PEM and Vitamin D

deficiency in community and be able to manage the situation. This package is also one of the theoretical units in pediatric nursing course content. This study aimed at evaluating the effect of lecture and self- learning package on students' intended learning outcomes. As well as providing guidance and recommendations that should be reflected in nursing education.

**Significance of the Study:** The main goals of nursing education are to equip students and graduate nurses with the necessary knowledge and skills and to provide them with the strategies for their application in practice. New and advancing technologies provide enormous opportunities for curriculum designers, teachers, students and patients to engage in exciting and innovative learning experiences. As with any educational intervention, care must be taken to ensure that the availability of technology enhances learning and is not just technology for technology's sake [21]. When used appropriately in education, interactive technological strategies have been identified as enriching student teaching [22], stated that students can become more self-directed when they know the intended learning outcomes and receive constructive feedback regarding their progress during the learning process. Self-directed learners demonstrate a commitment to change by building critique and assessment into their everyday actions. By reexamining and clarifying various aspects of the values, purposes, goals, strategies and outcomes, they continue to learn and develop an even more positive disposition toward continued learning. But, what process design best promotes this kind of feedback and continuous learning ? The quality of the educational preparation of nurses and their commitment to lifelong learning are keys to the development of the nursing profession and to improve healthcare outcomes, patients' satisfaction and cost effectiveness [23]. Self-directed learning is essential in both self-learning process and during the lifelong learning. Reported by Chinokul [24] that reflection on self-directed learning ability of student before their graduation incorporates into the professional continuum with clarifying school's contribution in development self-directed learning.

**Aim:** The aim of this study was to evaluate the effect of self- learning package versus lecture method on student' intended learning outcomes

**Research Hypotheses:** The study results were testing the following hypotheses:

- Students in study group who receive self-learning package will report higher score in posttest more than students in control group (lecture).
- Students in study group who are exposed to self-learning package will achieve intended learning outcomes more than students in control group (lecture) .
- Students in study group who utilize self- learning package will show more satisfaction in self- learning method more than students in control group (lecture) in student satisfaction assessment sheet

## MATERIALS AND METHODS

**Research Design:** A quasi experimental study design was utilized to accomplish the aim of this study, design used as experimental group (self- learning method) and control group (lecture method) and using pre-posttest to evaluate the impact of self learning instructional package versus lecture on students learning outcomes.

**Setting:** The study was conducted in Faculty of Nursing, Cairo University, Egypt.

**Sample:** Two purposive samples of 3<sup>rd</sup> level students in pediatric nursing semester' from the previously mentioned study setting in 1<sup>st</sup> semester and 2<sup>nd</sup> semester, 2012/2013 academic year as control group (60 students )and study group (65 students) respectively. Control group was exposed to traditional teaching method (Lecture) while the study group was exposed to self- learning instruction package. Students in both groups met the following prerequisite criteria: pass adult health nursing, health assessment and applied nutrition courses and newly enrolled in pediatric nursing course.

**Data Collection Tool:** Three different tools were used to collect data pertinent for this study, developed by the researcher after extensive review of related literature. They included the following .

*Tool 1:* A self-administered structured questionnaire to assess demographic characteristics (3 questions) was concerned with characteristics of the students such as age, gender and place of residence.

*Tool 2:* Intended learning outcomes achievement sheet through a self-administered structured questionnaire (pretest and posttest) about protein energy malnutrition and vitamin D deficiency included 30 questions with 30marks, 10 MCQ questions with 10 marks, 10 short Essay

questions with 10 marks and 10 Matching questions with 10 marks. It contains three levels; high, medium and low. Scoring system: A self-administered structured questionnaire for students regarding protein energy malnutrition and vitamin D deficiency topic content; each correct answer took one score, the wrong answer took no score with a total score of 30 represent 100%. Total knowledge score = 80% is considered high, score between 60% – less than 75% considered medium level, meanwhile students' total score less than 60%was considered low level.

*Tool 3:* Student's satisfaction with learning method Scale include 7 items as; develop effective study skills, develop effective learning strategies, contributed to use time efficiently, develop independency of learning, develop ability of knowledge acquisition , contributed to achieve student's intended learning outcomes, increased ability of understanding of the content. It contains five categories; strongly agree (5), agree (4), (3) to some extent, (2) disagree, (1) strongly disagree.

**Scoring System:** Student with = 60% is considered satisfied with learning method and unsatisfied in score less than 60%

**Self- Learning Instructional Package:** It was developed by the researcher regarding protein energy malnutrition (PEM) and vitamin D deficiency as a topic in pediatric nursing course content to cover the following content; PEM definition, types, causes of each form of PEM, signs and symptoms, differential diagnosis, management and prevention. Also the package discussed vitamin D deficiency, signs and symptoms, management and prevention. It includes the following, instructions for students 20 self administrated evaluation questions, (10) MCQ, (5) for true and false, (5) for short answer. Regarding achievement of intended learning outcomes there was (10) questions to assess knowledge skills, (5) to assess application skills and (5) to assess evaluation skills. Intended learning outcomes (16 ILOs), in these instruction package include three main ILOs; knowledge, application and evaluation (7 for knowledge skills included understanding and comprehension, 6 for application skills included analysis and synthesis, 3 to assess evaluation and creativity, self evaluation answers. It also contains learning resources (essential references, recommended books and reference material (journals, reports, etc.), attached list of electronic materials, web sites and other learning material such as computer based program as CD.

**Validity & Reliability:** Validation was done by a group of five experts (3 in pediatric nursing, 2 in education strategies). The researcher also attended workshop about preparation of learning instructional package. Modifications of the tools were done according to the experts' judgment on clarity of sentences, appropriateness of content and sequence of items. The experts' agreed on the content of the self-learning instructional package and then the final forms were developed. Regarding reliability, the reliability coefficients' alpha in pre-post exam questions was 0.72.

**Procedures:** The current study was carried out on three phases, preparation phase, implementation phase and evaluation phase.

**Preparation Phase:** In the initial phase of this study, the researcher prepared the Self-Learning Package (SLP). The process of developing self-instructional materials consists of three steps. The first step was reviewing the literature on theories and frameworks for developing materials. An official permission to conduct the SLP was obtained from the pediatric nursing council. Regarding the control group in the first semester (lecture method) at first filled the Sociodemographic characteristics sheet and pretest questionnaire was distributed before starting the lecture, the duration for this phase was one hour. After that the students taught the content of PEM 2 hours/ by traditional method (lecture) using power point presentation. Lecture covered the same intended learning outcomes and content that taught to the study group (self learning) through SLP, thereafter 2 weeks the posttest was conducted with the same questionnaire.

**Implementation Phase:** In the 2<sup>nd</sup> semester the study group (self learning group) at first filled the Sociodemographic characteristics sheet and self administrated pretest questionnaire was distributed before starting self-learning instructional package. The time spent to fill the assessment questionnaire was one hour. After that the researcher discussed the SLP content and distributed the package for each student fulfilling the study criteria after explanation of the aim and purpose of the study. The researcher created connections that maintain student involvement and allow for the completion of a meaningful final by assigned 2 h/week to answer the student questions.

**Evaluation Phase:** After two weeks of application of both learning methods the researcher applied posttest for two groups. The evaluation phase was emphasized on evaluating the effect of both learning methods on

student's ILOs achievement and student's satisfaction regarding both methods of teaching, to compare between the results of pre and posttest.

**Statistical Analysis:** The collected data were categorized, tabulated and analyzed using the SPSS computer program Version 16. Numerical data were expressed as mean and standard deviation. Qualitative data were expressed as frequency and percentage. The paired-sample t-test was used to compare the study and control group. Appropriate statistical methods were applied. Regarding P value, it was considered that: non-significant if  $P > 0.05$ , Significant if  $P < 0.05$ , Highly Significant if  $P \leq 0.01$ .

**Pilot Study:** The pilot study was conducted on 6 students to test the clarity, feasibility and applicability of the deterrent tools. Based on the result of the pilot study, no modifications were done. The students who were included in the pilot study were not included in study sample.

## RESULTS

The results of the current study were divided into three parts; socio demographic characteristics of lecture and self learning groups in the first part, second part; assessment of intended learning outcomes achievement and students' satisfaction of lecture and self learning groups, in the third part; correlation between student's satisfaction of learning methods and intended learning outcomes achievement of two groups.

Results reveals that the mean age of students in both lecture and self-learning group was  $21 \pm 0.64$  and  $21.77 \pm 0.69$  respectively, 70% and 66% of them were female, 83.3% and 76.9% of them living in urban areas. Table 1 also shows that there were no significant differences between two groups regarding demographic characteristics of students.

Concerned to pretest and posttest the results showed that in pretest in both groups, more than half of students in lecture and self-learning groups had low level in pretest (65 & 61.5% respectively), while less than half of students in both groups had medium level (35, & 38.4% respectively) and there was 0% in high level in both groups. Regarding to posttest in lecture group there was improvement in test level with no statistical difference between pre and posttest. Also it shows that regarding self-learning group posttest level there was decrease in low score, while there was less than two thirds and more than one quarter of them had medium and high level in posttest (61.5 & 27.6% respectively), with highly statistical difference between pre and posttest group (Table 2).

Table 1: Percentage Distribution of Students' Sociodemographic Characteristics in the Study and Control Group

Item	Lecture group n=(60)		Self-learning group n=(65)		X2	P value
	No	%	No	%		
Age	Mean +SD 21±0.64		21.77±0.69		T -0.33-	0.740
Gender						
Male	18	29	22	34	0.74	0.22
Female	42	70	43	66		
Place of Residence						
Urban	50	83.3	50	76.9	0.041	
Rural	10	16.6	15	23	0.46	

Table 2: Comparison between Pre & Post Test Level in Self Learning Group and Lecture Group

Test level	Lecture group (n= 60)				Self-learning group (n=65)			
	Pre		Post		Pre		Post	
	No.	%	No	%	No	%	No	%
High	0	0	4	6.6	0	0	18	27.6
Medium	21	35	36	60	25	38.4	40	61.5
Low	39	65	20	33.3	40	61.5	7	10.7
Test	X <sup>2</sup> = 0.067 p= .795				X <sup>2</sup> = 26.400 p= .000**			

\*Significant < 0.05\*\* Highly Significant <0.001

Table 3: Difference between Intended Learning Outcomes Achievement among Students in Lecture Group and Self Learning Group

Intended learning outcomes Achievement	Lecture group (n=60)				Self-learning group (n= 65)			
	Pre		Post		Pre		Post	
	No	%	No	%	No	%	No	%
Knowledge skills	18	30	45	75	20	30.7	36	55.3
Test	X <sup>2</sup> = 1.456 P= .228				X <sup>2</sup> = 1.176 P= .472			
Application skills	3	5	12	20	5	7.6	21	32.3
Test	X <sup>2</sup> = 1.32 P= .138				X <sup>2</sup> = 6.667 P= .024*			
Evaluation skills	0	0	3	5	0	0	8	12.3
Test	X <sup>2</sup> = 1.491 P= 0.180				X <sup>2</sup> = 7.8 P= 0.002*			

\*Significant < 0.05

Table 4: Comparison of Students' Posttest Mean Scores of the Lecture Group and Self-learning Group

Teaching method	Post test score			
	Mean	SD	F value	P value
Self- Learning group	7.8	1.5	6.45	0.002*
Lecture group	6.30	1.8		
	1.90	0.716		

\*Significant < 0.05

Table 5: Difference in Student's Satisfaction Regarding Learning Methods

Learning methods satisfaction	Lecture group n=(60)		Self-learning group n=(65)		Test X <sup>2</sup>	P value
	No	%	No	%		
Encouraged effective study skills	29	48.5	39	60	5.42	0.013
Develop effective learning strategies	27	45	43	66	16.49	0.000
Contributed to use time efficiently	28	46.6	40	61.3	7.99	0.003
Develop independency of learning	20	33.3	49	75.4	69.01	0.000
Develop ability of knowledge acquisition	29	48.5	45	67.6	12.92	0.000
Contributed to achieve intended learning outcomes	28	46.6	47	72.3	24.57	0.000
Increased ability of understanding of the content	28	46.6	46	70.7	19.47	0.000
Student's satisfaction with teaching method						
Satisfied	13	21.5	37	56.9	T 65.81	P 0.000
Unsatisfied	47	78.5	28	43		
Mean &SD	10.40±2.51		12.87±3.26			

Table 6: Correlation between Student's Satisfaction and Intended learning outcomes achievement

Item	Lecture group satisfaction (n=60)		Self-learning group satisfaction (n= 65)	
	R	p- value	R	p- value
Intended learning outcomes achievement	0.230	0.001	0.212	0.003

As regards to intend learning outcomes achievement in both groups Table 3 illustrates that improvement in achievement of intended learning outcomes in posttest then in pretest regarding knowledge in lecture group, but there was no statistical significant difference in both groups (P= 0.228, 0.472 respectively), It is evident from the same table that there was statistical significant difference in self-learning group in application and evaluation skills (P= .024&0.002 respectively) and there was no statistical significant difference in lecture group in posttest in the same skills (P= 0.138&0.180, respectively).

In relation to the comparison between students' posttest mean scores in both groups according to the teaching method as shown in Table (4) there was statistically significant difference between self-learning group and posttest mean score, while there was no significant difference between lecture and posttest mean score

Regarding student's satisfaction with teaching method, Table (5) shows that less than half of lecture group was satisfied with teaching method for the content, while nearly two-thirds of self - learning group were satisfied with teaching method for this content, while three quarter of students in self-learning group (75.4%) showed satisfaction regarding developing independency of learning by this method. This table also shows highly statistical significant difference in most items between two groups regarding student's satisfaction with teaching method for the content. As noted in Table (5) regarding teaching method satisfaction, 21.5 and 56.5% of both groups were satisfied, with mean score 10.40±2.51 and 12.87±3.26 respectively. Also it shows highly statistical significant difference between two groups p <0.000.

It is evident from Table (6) that there is positive correlation between student's satisfaction and intended learning outcomes achievement in lecture and self-learning group (p =0.001 and 0.003 respectively).

## DISCUSSION

The results revealed that there were no statistically significant differences between study and control groups in Sociodemographic characteristics of students, this indicated that both groups were homogenous before conduction of the self-learning package, this might be

related to the similar stage of age in the university studying. The findings of this research attempted to find and supported the research hypotheses. Regarding to the first hypothesis students in study group who received self-learning package will report higher score in posttest more than students in control group (lecture).The research findings indicated that there was improvement in posttest level with no statistical difference between pre and posttest in lecture group, while in self-learning group there was highly statistical difference between pre and posttest level. Similarly, Chinokul [24] conducted a study aimed at developing self-instructional materials for enhancing English listening skills for student nurses and assessing its effectiveness in practice. The findings revealed that the developed materials was effective and applicable with higher than criteria:80/80, the students listening ability after the experiment was significantly higher than before the experiment at the 0.05 level of significance, the student nurses' level of satisfaction of the developed materials was at a high level. According to Cha and Kim [9] nursing students are able to learn effectively with self-study techniques. In the same context an experimental study conducted by Kim [25] to examine the effect of self-observation on the self-directed learning ability of nursing students. The findings reported that self-directed learning scores increased 0.20 points for students in the experimental group and decreased 0.03 points for those in the control group. There was a statistically significant difference between the experimental and control groups in self-directed learning ability scores (t = 3.202, p = 0.002). Among the subcategories, statistically significant differences were observed between the experimental and control groups in learning practice (t = 3.261, p = 0.002) and learning evaluation (t = 3.634, p = 0.001). In another study by Abbasi *et al.* [15] to examine the effect of learning via module versus lecture teaching methods on the knowledge and practice of nurses used a self-directed module group and the lecture group in the classroom. The results illustrated that teaching through lecture and module methods has a positive and significant effect on increasing the knowledge (P < 0.001) and showed that there was not a significant difference between the lecture group and module group in the increase of knowledge (P = 0.86). On the other hand in a randomized trial by

Peine *et al.* [26] who studied 244 students of medicine in their third academic year assigned to one of self-study learning and lectures instructed learning forms. Both groups participated in their respective learning module with standardized materials and instructions. Learning effect was measured with pre-test and post-test multiple-choice questionnaires. In the pre-test, the groups showed relatively homogenous scores. All students showed notable improvements compared with the pre-test results. Participants in the lectures instructed learning groups reached scores of and 14.37, while the groups of self-study learners reached higher scores with 15.81, the author recommended that students in modern study curricula learn better through modern self-instructed methods than through conventional methods. From the other hand, the result of this study is different from that of an existing study by Roytek [27] who argued that students may respond differently to various types of instructional methodologies that might influence greatly their knowledge acquisition. Since the impact of differences of learning instructional method on the knowledge acquisition by students was insignificant, future research should choose the learning instructional methods that have the most positive impact on the time and financial resource. Thus, future studies should consider the impact of the learning instructional method on the financial resource.

This result is consistent with the finding by Ganyaupfu [28] who investigated the differential effectiveness of teaching methods on a sample of 109 undergraduate students regarding academic performances. Results indicated significant differences on the effectiveness of the teaching methods. The mean scores results demonstrate that student-centered approach was effective while the teacher-centered approach (lecture) was the least effective teaching method. Regarding to second hypothesis, which was Students in study group (self-learning), who were exposed to self-learning package will achieve intended learning outcomes more than students in control group (lecture).As regard to intend learning outcomes achievement in both groups the results illustrated that improvement in achievement of intended learning outcomes in posttest then in pretest regarding knowledge in both groups, with was no statistical significant difference. It was evident also that there was statistical significant difference in self-learning group in application and evaluation skills, while there was no statistical significant difference in lecture group in posttest in the same skills. This finding also is in agreement with

Wakefield *et al.* [29] who found that no significant differences exist in posttest scores associated with participants' academic achievement regarding knowledge. Also Colesca *et al.* [30] found that self-learning was found to have contributed to learners' learning outcome by facilitating their met cognitive development and self-regulatory develop. In a similar study, Pereira *et al.* [31] found that introduction of learning strategies had resulted in improved learning performance in terms of higher examination turnout, better grades and better exam pass rate among a group of freshmen biology majors taking the course 'human anatomy. But form other point Schaber *et al.* [32] stated that both classroom and self-learning formats are effective in enhancing learner's perceived understanding of affective content, self-learning was proved more effective than classroom learning. In the same line Zhigang *et al.* [33] found that nurses who participated in the self-learning course showed an increase in their knowledge, there was a significant improvement in knowledge mean scores ( $p < 0.05$ ) for both groups regardless of the methods and scores increased in the immediate post-test. At the 6-month post-test assessment we expected both groups to have reduction in their knowledge. However, the self-learning group demonstrated significant knowledge retention level and their scores were improved by  $0.28 \pm 2.80$ . In contrast, the traditional method group demonstrated usual pattern of knowledge decay. As regards to low achievement of evaluation skills in lecture group and increase in self-learning group in the current study posttest score might be attributed to that evaluation is the highest level in Bloom's Taxonomy [34] means generating and applying a set of internal and external criteria. For too long, teachers have been practicing that skill. Now there is a need to shift that responsibility to students to help them develop the capacity for self-analysis, self-referencing and self-modification. So the findings proved that intended learning outcomes achievement in self-learning method was higher than in lecture group.

The third part of research findings regarded to students in study group who utilized self-learning package will show more satisfaction in self-learning more than students in control group (lecture) in student satisfaction assessment sheet. Regarding student's satisfaction with learning method, results showed that less than half of lecture group was satisfied with teaching method for the content, while nearly two-thirds of self-learning group were satisfied with teaching method for this content. Also there was highly statistical



significant difference in most items between two groups regarding student's satisfaction with teaching method for independency and achievement of intended learning outcomes and there was highly statistical significant difference between two groups. It was evident that there was positive correlation between student's satisfaction and intended learning outcomes achievement in lecture and self-learning groups. These results are in accordance with Crawford *et al.* [35] and Melton *et al.* [36] who compared a group of students' learning achievement and satisfaction with self-directed learning and traditional face to-face classroom teaching in a general health course. The result revealed that the students earned significantly higher grades and displayed higher satisfaction levels under a students' learning environment. In quiz experimental study by Peine [26], student satisfaction and learning style were examined via self-assessment as they also show good levels of student acceptance and higher scores in personal self-assessment of knowledge. The result of this study is contradicted with Gagnon *et al.* [37] who found that there was no significant difference between groups regarding course's satisfaction (the Control group was slightly more satisfied, but not significantly). Also AbouNaaj *et al.* [38] stated that Student satisfaction in blended learning is important because it can impact motivation and, therefore, student success and completion rates. Measurement of satisfaction is also valuable to institutions because it can be used to evaluate courses and programs and, to a certain degree, to predict student attrition rates.

In an empirical studies by Chen *et al.* [39] and Chiu *et al.* [40], student satisfaction was shown to improve learner studies and contribute to retention. Dissatisfied learners can hardly do well in their studies and this leads to poor performance. Educators should integrate variables affecting learner satisfaction to increase learner persistence. Research showed that learner satisfaction affected students' learning and led to learner completion. Nursing students showed higher engagement in the clinical learning environment. Critical and creative thinking, adaptability, ability to solve problems and to manage one's own learning were considered important factors in the cognitive and behavioral learning process. The ability to work with others, communication and interpersonal skills are considered vital for emotional and behavioral learning. In a recent study by D'Souza *et al.* [41] to explore nursing student engagement in the learning environment for improved learning outcomes. Nursing students showed higher engagement in the clinical learning environment. Critical and creative thinking,

adaptability, ability to solve problems and to manage one's own learning were considered important factors in the cognitive and behavioral learning process. The ability to work with others, communication and interpersonal skills are considered vital for emotional and behavioral learning. Nursing students should be engaged in student centered and interactive pedagogies for cognitive, emotional and behavioral learning. Nurse educators should integrate active and collaborative learning strategies in teaching.

## CONCLUSION

Based on the study findings, the current study concluded that student who received self-learning package reported improvement in score in posttest than students in lecture group and also achievement of students' intended learning outcomes. Regarding student's satisfaction of leaning method Students in self-learning group showed more satisfaction in self-learning package method more than students in lecture group. Self-learning package was perceived to be more effective in learning independency more than lecture method and also in achievement of students' intended learning outcomes. These results support the proposed study hypotheses.

## Recommendation:

- Apply of self learning package as a complementary method beside traditional in-class approach.
- Use self- learning package method with appropriate assessment of student readiness and learning needs.
- Teachers should also increase their knowledge of various instructional strategies in order to keep students engaged and motivated throughout the learning process.
- Further studies may be needed to explore specific approaches for allowing students to take a more active role in the teaching– learning process.
- Future researchers consider conducting qualitative studies exploring the thoughts and feelings of students regarding their satisfaction with different learning methods

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