

### Developing and Implementing Log Book in Teaching Principles and Techniques to Nursing and Midwifery Students: Mixed Method Study

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**Background:** There is an interval between clinical and theoretical teachings in nursing which proper teachings during initial courses in nursing. Therefore, the purpose of this process was to comply Log Book in teaching principles and techniques to nursing students.

**Methods:** This mixed study was an exploratory study which was done in three stages on midwifery and nursing students. At first, Log Book was planned based on authentic resources and opinion of group members. Then, the planned Log Book was used during 2 terms and at the end of the term the results were qualitatively and quantitatively analyzed through mixed method.

**Results:** Based on the results of qualitative stage three classes of learning improvement, covering educational needs, and need to equipment and facilities were obtained. Based on the results of quantitative stage the following percentages were obtained: familiarity of students with learning purposes and responsibilities: 54.5% totally agreed, making students' efforts toward learning related tasks purposeful: 52% totally agreed, making teachers' efforts toward teaching to students purposeful: 52.7% totally agreed, establishing educational interaction between teacher and learner: 54.5% totally agreed, making the professors' efforts in observing training and giving feedback purposeful: 56% totally agreed, documenting practical activities of students: 52.7% totally agreed.

**Conclusions:** Using Log Book will result in deep learning and will provide the possibility for required trainings for students. But it requires appropriate facilities, spending time and employing specialized forces.

**Keywords:** Clinical Training, education, Log Book, Nursing and midwifery

### تدوین و اجراء سجل الأداء في تعليم الاصول و الفنون عند طلاب التمريض: دراسة تركيبية

**التصميم والهدف:** هناك فتره بين التعليم النظري و السريري في التمريض و لنا ان التعليم الصحيح في المرحلة الابتدائية من دورة تعليم التمريض يتسبب في تصغير هذه الفتره بين التعليم النظري و السريري. من هذا المنطلق تم اجراء هذه الدراسة لأجل تدوين سجل الأداء في مجال تعليم الاصول و الفنون عند طلاب التمريض.

**الأسلوب:** هذه الدراسة من النوع التركيبي الإكتشافي التي تمت عبر ثلاث مراحل على طلاب قسم التمريض والقبالة. في البداية تم تنظيم سجل الأداء من قبل المتخصصين و باستخدام معايير تخصصية و بعد ذلك تم استخدام هذا السجل المصمم خلال فصيلين و في نهاية الفصلين تم تحليل النتائج بشكل كمي و كيفي.

**النتائج:** اشرت النتائج في المرحلة الكيفية الى ثلاث طبقات و هم: تحسين التعلم. تأمين الإحتياجات التعليمية. الحاجة الى الممرات و الإمكانات. و في المرحلة الكمية: تقييف الطلاب و تعليمهم الوظائف و الأهداف التعليمية بنسبه تجاوب. 54.5% . توجيه نشاط الطلاب اتجاه تعليم الوظائف المخصصة لهم 52% ايجاد تقارير عن الفعاليات العلمية عند الطلاب 54.5% . ايجاد التعامل الإيجابي بين المعلم و المتعلم 52.7% . توجيه مشاهير الاساتذة في مشاهد التمارين و ادارة ردود الفعل 56% . ايجاد تقارير عن الفعاليات العلمية عند الطلاب 52.7%

**الإستنتاج:** استخدام سجل الأداء يسبب في التعميق في التعليم و يؤمن التمرينات العلمية الكافية للطلاب و لكن يحتاج الى امكانيات مناسبة و اعطاء الزمان اللازم و تخصيص العناصر البشرية المتخصصة في هذا المجال .

**كلمات المفتاح:** التعليم السريري . التعليم . سجل الأداء . التمريض و القبالة .

### تدوین و اجراء لوگ بوک در آموزش اصول و فنون در دانشجویان پرستاری: مطالعه ترکیبی

**زمینه و هدف:** فاصله بین یادگیری های نظری و بالینی در پرستاری وجود دارد که آموزشهای صحیح در دوره ابتدایی پرستاری می تواند سبب کاهش فاصله یادگیری نظری و بالینی گردد. لذا هدف از این فرآیند تدوین لوگ بوک در آموزش اصول و فنون در دانشجویان پرستاری بود

**روش:** این مطالعه ترکیبی اکتشافی بود که در سه مرحله در دانشجویان پرستاری و مامایی انجام شد ابتدا با توجه به منابع معتبر و نظر اعضای گروه لوگ بوک طراحی شد سپس لوگ بوک طراحی شده در دو ترم مورد استفاده قرار گرفت و در پایان دو ترم نتایج به شیوه ترکیبی هم کیفی و هم کمی مورد بررسی قرار گرفت. **یافته ها:** بر اساس نتایج مرحله کیفی سه طبقه بهبود یادگیری، پوشش دهی نیازهای آموزشی، و نیاز به تجهیزات و امکانات به دست آمد. بر اساس نتایج مرحله کمی: آشنا سازی دانشجو با وظایف و اهداف یادگیری 54/5 درصد کاملاً موافقم، هدفمند سازی تلاش دانشجویان به سمت یادگیری وظایف مربوطه 52 درصد کاملاً موافقم، هدفمند نمودن تلاش اساتید در جهت آموزش به دانشجویان 52/7 درصد کاملاً موافقم، ایجاد تعامل آموزشی بین یاد دهنده و یادگیرنده 54/5 درصد کاملاً موافقم، هدفمند سازی تلاش اساتید در مشاهده تمرین و ارائه بازخورد 56 درصد کاملاً موافقم، مستند سازی فعالیت عملی دانشجویان با 52/7 درصد کاملاً موافقم به دست آمد.

**نتیجه گیری:** استفاده از لوگ بوک سبب یادگیری عمیق می شود و امکان تمرینهای لازم را برای دانشجویان فراهم می نماید. اما نیازمند امکانات مناسب، صرف زمان و استفاده از نیروی متخصص به اندازه کافی است.

**واژه های کلیدی:** آموزش بالینی، آموزش، لوگ بوک، پرستاری مامایی

### نرسنگ طلباء کو اصول و فنون کی تعلیم کے لئے لاگ بک کی تیاری اور اس پر عمل درآمد ایک ترکیبی تحقیق۔

**بیک گراؤنڈ:** نرسنگ کی تعلیم میں علمی اور عملی تعلیم میں کافی فرق ہوتا ہے۔ اگر ابتدائی تعلیم ہی سے صحیح تعلیم پر زور دیا جائے تو یہ فاصلہ کم ہو سکتا ہے، اس تحقیق کا هدف نرسنگ کے طلباء اور طالبات کو اس موضوع کے اصول و فنون سکھانا ہے۔

**روش:** یہ ترکیبی تحقیق تین مرحلوں میں انجام پائی ہے۔ نرسنگ اور میڈ وائفری کی طالبات کے لئے معتبر کتابوں سے اور کمیٹی کے رکن افراد کی نظر سے لاگ بک تیار کی گئی اور دوسرے ٹرم میں اس سے استفادہ کیا گیا اور ٹرم کے آخر میں ترکیبی روش یعنی کیفی اور کمی لحاظ سے اس کا جائزہ لیا گیا۔

**نتیجے:** کیفی نتائج کی اساس تعلیمی معیار میں تین درجہ بہتری آئی یعنی تعلیمی ضرورتوں کا اجاگر کرنا، آلات و اوزاروں کی ضرورت اور سہولتوں کی ضرورتوں سے آگہی ہوئی، اور کمی نتائج کی بنیاد پر طلباء کو ان کے فرائض اور اہداف، استاد و طلباء کے درمیان ہمابندی پیدا کرنا۔ طلباء کی علمی اور تعلیمی کوششوں کو مستند بنانے کی ضرورت سامنے آئی ہے۔

**سفارش:** لاگ بک کے استعمال سے طلباء کی تعلیم میں بہتری آتی ہے اور اس کا امکان فراہم ہوتا ہے کہ طلباء اپنے سبق کی مشق کریں لیکن اس کے لئے وسائل و ذرائع وقت اور ماہر افرادی قوت کی ضرورت ہے۔

**کلیدی الفاظ:** کلینیکل ٹریننگ، لاگ بک، نرسنگ اینڈ میڈ وائفری۔

## INTRODUCTION

The students are and have been state capital, epoch makers and influence all issues of society. I would dare say that the most influencing groups of society and epoch makers in every country are youth and especially the students (1, 2). The universities as a place for learning should provide the required facilities for positive and constructive changes in students' attitudes so that by encouraging and creating more willingness, learning becomes continuous and sustainable (3,4).

In clinical training, the clinical instructor and student cooperate equally and the purpose is to create measurable changes in student for offering clinical care (5). Clinical training is considered as the first source of learning and forming a professional identity of medical sciences students (6) and in terms of importance, it is regarded as the core of professional training and it is the basis of obtaining professional skills (7, 8 & 9). Weakness in planning in this field creates problems which finally results in professional skill weakness and reduction of students' efficacy (10, 11). There is an interval between theoretical teachings and nursing clinical services which proper teachings during the initial course of nursing will decrease the interval between clinical and theoretical teaching (12). Several studies on nursing around the world imply the importance of clinical training and its problems which have resulted in lack of clinical mastery in students (13 & 14).

There are numerous clinical evaluation methods in nursing one of which is Log Book. Log Book is a tool which provides the possibility of feedback for students by giving directions and making them aware of educational purposes and ultimately makes student's evaluation easy but there is some evidences about Log Books (15).

Since evaluation through Log Book method is based on educational purposes and it results in learning improvement in students and considering the fact that at clinical skills training center, Shahrekord Faculty of Nursing & Midwifery, no specific method has been used for evaluating students, therefore, the purpose of this study was complying Log Book is to teach principles and technique to nursing students.

## METHODS

The present study was done using exploratory mixed method (16 & 17). It was performed on nursing and midwifery students of 1st semester who were studying principles and techniques course. At first, it was performed based on authentic sources and through asking the opinions of 5 faculty members of Shahrekord Faculty of Nursing & Midwifery during 2 semesters and finally the results were analyzed through exploratory mixed method. Based on the results of qualitative stage, a questionnaire was prepared and then the quantitative stage was performed after evaluating the validity and reliability of the questionnaire. Ultimately, the results of two stages were combined.

### Qualitative Stage:

At the end of the term, students' experiences were analyzed. Qualitative stage was done through contractual content analysis method. Qualitative content analysis is usually

applied in studies which are designed to describe a phenomenon and it is appropriate when theories or existing research articles on a phenomenon are limited (18).

The participants included 10 nursing and midwifery students of 1st semester who were selected through purposeful method. Inductive content analysis was used in this study. This process included open coding, classification and abstraction (19). In this study, students who were interested to participate in the study were interviewed after obtaining informed consent letter. Participants were interviewed at hospitals, faculty or wherever they felt free. In semi-structured interviews, there are no fixed and pre-determined questions and the questions are made based on the procedure of the interview. Some of the following questions will be made in the interview: please talk about the time when your teacher used Log Book for this course? The interview continued by asking explorative questions such as: Is there any other issued required to be mentioned? Can you explain more in this regard? Average time for interview was 30 minutes. The interview started with the open question of "please tell me about your experience of the Log Book in practice" and it started with probing questions. Sampling and data collection continued until the researcher realized saturation has happened. Data were saturated with 10 interviews.

Having listened to the tapes for several times, the researcher probed into interviews to find a general view about them. All interviews were copied word by word and words having key concepts were boarded and as such codes were extracted. After extracting concepts and codes from important paragraphs and sentences, they were grouped based on their similarities and differences into classes and finally the classes were combined based on their relationship to main classes (19).

In order to obtain accurate and firm data, the participant were interviewed for 30mins and the data were studied repeatedly and deeply. In order to review the peers, complementary recommendations of colleagues were used to correct the accuracy of extracted classes and codes. In order to review participants, some interviews were reviewed after coding so as to find consensus about codes. It should be mentioned that the present study is confirmed in terms of anonymity and confidentiality and moral considerations have been observed.

### B-The quantitative stage:

The quantitative stage was performed by distributing Log Book questionnaire and after performing qualitative stage. It was performed based on questionnaire resulting from results of qualitative stage and after obtaining informed consent letter. The experts confirmed the validity of questionnaire content by polling and its reliability was evaluated by Cronbach's alpha /90. The number of students was 76 persons. The questionnaire studied: areas of student familiarity with tasks and learning purposes, making students' efforts toward learning related tasks purposeful, making professors' efforts purposeful teaching students to, establishing educational interaction between teacher and learner, making professors' efforts toward observing training and giving feedback purposeful, documenting practical activities of students. Their areas were ranked based on Likert's criteria.

**RESULTS**

The number of students was 10 persons, all of them were female, 6 nursing students and 4 midwifery students. Their age average was 19 years old.

Based on the results of qualitative stage 3 categories of learning improvement with 2 subcategories of giving feedback and spending more time for training, covering educational needs with 2 subcategories of compatibility with educational purposes and preparation for internship, and need for equipment and facilities with two subcategories of the necessity of learning skills and necessity to employ professional personnel were obtained (table1).

**Learning Improvement**

Based on analysis of qualitative data, learning improvement category with two subcategories of giving feedback and spending more time for training was obtained.

In the view of most participants, using the Log Book will give the opportunity for training and repeating one skill and by spending more time for training and giving feedback, their learning will increase. In this regard a student said:

“Well, since we repeat some skills for several times, this will help us to learn better. (M 1)”

The trainings are done under the supervision of an expert and this is very good because they supervise us and more training will improve learning (P 4).

Another student stated:

The number of doing procedures is appropriate. This was the student’s assessment of herself and this will result in our dominance. The time and sessions of training were also good (M 2).

**Covering educational needs**

Analysis of data revealed that category of covering educational needs was specified with two subcategories of compatibility with educational purposes and preparation for internship.

Most students stated that what they learned in theoretical class with exercising and repeating these skills helped them to have preparation for internship. In this regard a student said:

I was thinking about how to learn these skills in theoretical class, I was afraid of starting the internship without knowing anything. But the training classes prepared me (P 1).

Another student stated:

One of the purposes in nursing is to learn skills and techniques which in my opinion using Log Book will meet this requirement. At the end of each training the expert

should sign our paper and this will help us to learn whatever we need (P 3).

**Need for equipment and facilities**

Based on analysis of interviews, category of necessity for equipment and facilities with two subcategories of the necessity to learn all skills and necessity to employ skilled personnel.

Most participants stated that the prerequisite for using Log Book is appropriate tools and equipment which the presence of a skilled professor makes it more applied. In this regard, a student said:

“There are lots of tools such as syringe and gas. But the gloves have expired and tear so soon or the Mannequin’s hand has been torn due to needling. It is not obvious whether we have found the vessels correctly or not. It is good to use Log Book. I wish we had new tools and equipment too (P 5).”

Another student stated:

Sometimes the methods of professors are different from each other. They have same purposes, but different methods. Since we are novice, it is difficult for us. In my opinion, experienced professors should be employed. This is very important because there are the fundamental principles. We are satisfied with Ms...., her practice many skills with us (P 2).”

**Results of quantitative stage**

Based on demographic particulars 56 nursing students, 31 females and 21 males, 51 married and 5 single, and 20 midwifery students participated in a quantitative stage of study. All midwifery students were female and single. The results of quantitative stage are as follows (table2).

Familiarity of students with tasks and learning purposes: 54.5 % totally agreed, 38.5 % agreed, 5.4 % no idea, 1.6 % disagreed.

Making students’ effort toward learning and related task purposeful: 52 % totally agreed, 39 % agreed, 7.4 % no idea, 1.6 % disagreed.

Making professors’ effort toward teaching students purposeful: 52.7 % totally agreed, 36.3 % agreed, 7.4 % no idea, 3.6 % disagreed.

Establishing educational balance between learner and teacher: 54.5 % totally agreed, 32.5 % agreed, 10.9 % no idea, 1.1 % disagreed.

Making teachers’ attempt toward observing training and giving feedback purposeful: 56 % totally agreed, 27.7 % agreed, 13 % no idea, 3.3 % disagreed.

Documenting practical activity of students: 52.7 % totally agreed, 33 % agreed, 12.7 % no idea, 1.6 % disagreed.

**Table 1. categories and subcategories obtained from students’ experiences regarding Logbook**

subcategories	category
giving feedback	learning improvement
spending more time for training	
compatibility with educational purposes	covering educational needs
preparation for internship	
necessity of learning skills	need for equipment's and facilities
necessity to employ professional personnel	

Table 2. Results of quantitative stage

	Totally agree (%)	Agree (%)	No idea (%)	Disagree (%)	Totally disagree (%)
1. Familiarity of students with tasks and learning purposes	54.5 %	38.5 %	5.4 %	1.6 %	
2. Making students' effort toward learning and related task purposeful	52 %	39 %	7.4 %	1.6 %	
3. Making professors' effort toward teaching students purposeful	52.7 %	36.3 %	7.4 %	3.6 %	
4. Establishing educational balance between learner and teacher	54.5 %	32.5 %	10.9 %	1.1 %	
5. Making teachers' attempt toward observing training and giving feedback purposeful	56 %	27.7 %	13 %	3.3 %	
6. Documenting practical activity of students	52.7 %	33 %	12.7 %	1.6 %	

## DISCUSSION

Based on the results of qualitative stage 3 classes of learning improvement with two subclasses giving feedback, spending more time for training were obtained which the results of the quantitative stage of the present study also confirmed this result. Based on the results of quantitative stage, the following percentages were obtained: familiarity of students with tasks and learning purposes: 54.5% totally agreed, 38.5% agreed, and 5.4 % no idea, 1.6% disagreed. Making students' efforts toward learning related tasks purposeful: 52% totally agreed, 39% agreed, 7.4% no idea, 1.6% disagreed. The results of the qualitative stage were confirmed. The results of other studies revealed that using Log Book results in learning and provides the possibility for feedback (20). Mohammad stated that using Log Book in clinical training will give rise to deep learning of students (21).

The present study revealed that covering educational needs with two subclasses of compatibility with educational purposes and preparation for the internship was obtained which the result of the quantitative stage also confirmed it. Based on the result of quantitative stage of present study the following percentages were obtained: making a professor's effort in observing training and giving feedback purposeful: 56% totally agreed, 27.7% agreed, and 13% no idea, 3.3% disagreed. Documenting practical activity of students: 52.7% totally agreed, 33% agreed, 12.7% no idea, 1.6% disagreed which it confirmed the qualitative results. The results of other studies also confirmed our results. The results of study

of Rooshangar et al. Revealed that Log Book is an appropriate assessment tool for clinical training (22).

Need for equipment and facilities was obtained with two subclasses of the necessity to learn all skills and to employ skilled personnel which the result of the quantitative stage also confirmed these results. Based on the results of quantitative stage the following percentages were obtained: making professor's efforts toward teaching students purposeful: 52.37% totally agreed, 36.3% agreed, and 7.4% no idea, 3.6% disagreed. Establishing educational balance between teacher and learner: 54.5% totally agreed, 32.5% agreed, 10.9% no idea, 1.1% disagreed which the results of the qualitative stage were confirmed. The results of other studies also confirmed our results. The results of the study of Abutalebi and Rasouli et al. Revealed that improving facilities will promote clinical training (23 & 24).

Based on data analysis, using the Log Book will give rise to deep learning and will provide the possibility of required trainings for students. But it requires spending time and employing specialized forces. It requires necessary facilities and equipment as well. It is necessary that in case of using this method, the authorities provide required specialized forces and appropriate equipment.

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