

## ***Content Analysis of Blended Curriculum (virtual and non-virtual) in Nursing***

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### **Abstract**

**Background:** Blended learning is the thoughtful integration of online and face-to-face learning, which is widely accepted in nursing education.

**Objectives:** Despite its importance and complicity, few studies investigated this issue. This study aimed to extend knowledge regarding factors contributing to effective blended learning in nursing education.

**Methods:** Following the Attride-Stirling content analysis method, we searched PubMed, Elsevier, Emerald, Science Direct, ProQuest, and Springer databases and national databases of SID and MagIran to identify relevant studies using various combinations of online, semi-online, hybrid, and mixed keywords from 2005 to 2018.

**Results:** Four main themes were identified, content, context, educational activities, and evaluation. Nine identified organizer themes were as follows: Content objectives, flexibility, control and evaluation, technological capabilities, support system, teaching activities, learning activities, performance feedback, and evaluation methods. Finally, 23 basic themes codes were obtained as factors that should be embedded in the online nursing curriculum.

**Conclusion:** Blended learning is a rational and flexible method to improve the educational performance of nursing students. However, it should be based on need assessment, appropriate planning and execution, and evaluation and feedback.

**Keywords:** *content analysis, hybrid curriculum, nursing*

### **Introduction**

Improving the quality of nursing education has always been considered a significant issue [1]. Several countries have begun programs to enhance the adaptation of online learning, particularly following blended curriculums, to improve access to information and seize opportunities provided by novel technologies [2]. Considering long hours of internship per week and attending theoretical courses in the evening,

online learning can pave the way for enhancing the effectiveness of nursing education [1]. However, both students and their instructors should prepare themselves to adopt this new education system [3].

According to the evidence, lack of sufficient experience, particularly during university education, and insufficient familiarization with new technologies, are among major concerns of students and their instructors, indicating the

necessity of developing unique programs to enable them [3,4]. Obtaining the opinions of experts and professionals can provide valuable information to develop an effective plan to enable them and is helpful to increase awareness of graduates regarding clinical and theoretical dimensions [5].

Despite its importance and complicity, few studies investigated this issue. However, some concepts related to the combined curriculum in nursing and other fields have been discussed [6-11]. Therefore, this study aims to extend researchers' knowledge regarding factors contributing to effective blended learning.

### Methods

This study is a part of a thesis proposal for curriculum planning, entitled 'developing and evaluating a blended learning curriculum for nursing education,' conducted from 2018 to 2019. This qualitative study is performed using the Attride-Stirling method of content analysis, including familiarization, initial coding, extracting themes, developing thematic network, developing the report, and conclusion. We searched PubMed, Elsevier, Emerald, Science Direct, ProQuest, and Springer databases and national databases of SID and MagIran to identify relevant studies using various combinations of online, semi-online, blended, and mixed keywords from 2000 to 2018 for international databases and 2005 to 2018 for national databases. A total of 40 international articles, 27 articles conducted in Iran, three books, and three theses were eligible for the review. Data analysis was administered by Attride-Stirling method of content analysis using MAXQDA version 12. Initially, basic themes were identified. Then, duplicate and similar themes were either

removed or merged. Afterward, organizer themes were developed, followed by developing main themes.

To measure the validity, in addition to investigating the literature and research objectives, the themes were objective and descriptive, and the researcher did not intervene in the content of themes. Furthermore, the opinions of a team of experts were also obtained before coding and finalizing themes. So that the extracted themes were provided to experts, and before finalizing the themes, a series of modifications were made. By comparing the above steps and based on the consistency between the two coding stages, the reliability coefficient was calculated.

$Pao = 2M / (n1 + n2)$ ;  $2 (18) / (23 + 21) = 0.818$  Where Pao is the percentage of agreement (reliability coefficient);

M is the frequency of agreement between coding stages;

N1 is the number of coded units in the first stage (before obtaining expert opinions);

N2 is the number of coded units in the second stage (after obtaining expert opinions), which ranges from zero (no agreement) to one (strong agreement).

The findings indicate high reliability.

### Results

In this section, the identified articles were reviewed to achieve the study's objectives. Table 1 comprises a sample of identified articles and extracted themes. A total of 203 codes were obtained in the first stage, then the Attride-Stirling method was applied to extract themes (Table 1).

**Table 1: Findings analysis and content coding**

| Basic theme                                           | Primary theme                                                                                                    | Text                                                                                                                                                                                                    | Source                                          |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Time flexibility</b>                               | Continuous access                                                                                                | Continuous access to web-based content                                                                                                                                                                  | Omran Salehi <sup>[12]</sup>                    |
| <b>Evaluation of learning context</b>                 | Inputs, activities or transactions, and outputs                                                                  | Inputs, activities, and transactions, and outputs should be evaluated to achieve a comprehensive evaluation of the learning context. The inputs include students, instructors, and technological tools. | Seraji <sup>[13]</sup>                          |
| <b>Benefits of blended learning</b>                   | Communications<br>Collaboration<br>Interaction<br>Controlling the learning process.                              | Another benefit of blended learning is multiply opportunities to improve communications, collaboration, interaction, and controlling the learning process.                                              | Savari and Fallahi <sup>[14]</sup>              |
| <b>Spatial flexibility</b>                            | Interaction from all places                                                                                      | Spatial flexibility, i.e., students can participate in classes from wherever they are.                                                                                                                  | Seraji <sup>[15]</sup>                          |
| <b>Temporal</b>                                       | Permanent access to educational materials                                                                        | Permanent access to educational materials.                                                                                                                                                              | Roshani et al. <sup>[16]</sup>                  |
| <b>Students</b>                                       | Personal skills,<br>Studying skills,<br>general computer and internet skills                                     | Skills that students need for online learning, including personal, studying, and general computer and internet skills                                                                                   | Dargahi et al. <sup>[17]</sup>                  |
| <b>Flexibility in providing educational materials</b> | Flexibility in providing educational materials                                                                   | Flexibility in providing educational materials mentioned in blended learning curriculum                                                                                                                 | Ajam <sup>[18]</sup>                            |
| <b>Supervising and supporting</b>                     | Continuous evaluation of learners and providing feedback                                                         | The instructor should evaluate students using various tools to identify their weaknesses in the shortest time, while emphasizing their strengths                                                        | Seraji <sup>[19]</sup>                          |
| <b>Evaluation</b>                                     | Peacher et al., also emphasized educational design, interaction, and learning ability to evaluate the curriculum | Peacher et al., also emphasized educational design, interaction, and learning ability to evaluate the curriculum                                                                                        | Randy Grayson and Norman Weigan <sup>[20]</sup> |

After removing duplicates and merging similar themes, 23 codes were obtained and categorized into three categories: basic themes, organizer

themes, and comprehensive themes to develop the thematic network (Table 2).

Table 2: Themes categorization

| Basic themes                                                                                                                                     | Organizer themes           | Main themes         |
|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------|
| Content and resources of the curriculum<br>Balance between class and virtual activities<br>Paying attention to the educational needs of learners | Content Objectives         | Content             |
| Flexibility of educational material; Spatial flexibility<br>Temporal flexibility                                                                 | Flexibility                |                     |
| Course evaluation<br>Instructor evaluation                                                                                                       | Control and evaluation     | Context             |
| Technological infrastructure<br>Technological skills                                                                                             | Technological capabilities |                     |
| Technical support<br>Educational support                                                                                                         | Support systems            |                     |
| Teaching activities<br>Optimal combination of teaching and technology<br>Guide and support                                                       | Teacher activities         | Teaching activities |
| Type of interactions<br>Using simulation programs<br>Simultaneous and asynchronous learning<br>Self-learning                                     | Learner activities         |                     |
| Class-based activities and research purposes<br>Evaluation and testing                                                                           | Methods of evaluation      | Evaluation          |
| Self-evaluation<br>External evaluation                                                                                                           | Feedback                   |                     |

As shown in Table 2, the thematic network comprises four themes as follows, content, context, educational activities, and evaluation,

each containing some basic sub-themes (Figure 1).

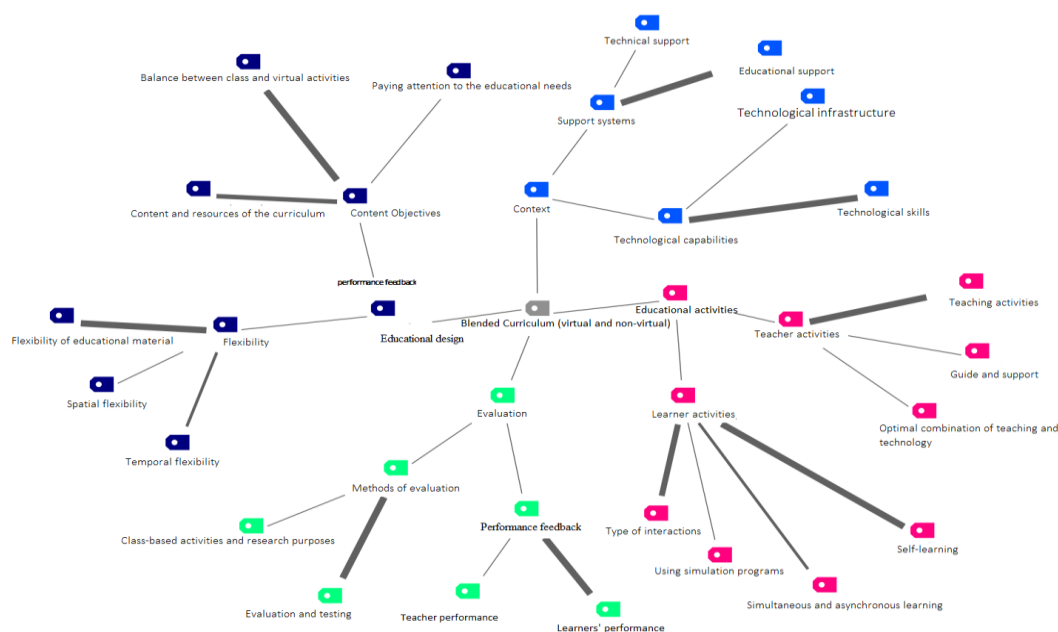


Figure 1: Thematic network of blended learning

## Discussion

This study aimed to investigate factors contributing to effective blended learning in nursing education using a novel research approach

in Iran, as main themes are extracted from articles, books, and theses in nursing using the Attride-Stirling method.

Concerning the first theme (i.e., content), the planners should follow a blended approach to develop strategies to embed appropriate and accurate content in an optimal framework for qualified persons at the right time. Blended learning contains multiply components of educational materials used to complete, promote, and use the learned behaviors among members [6,21-25].

The second theme was related to context. The findings indicated students' confusion in the face of using multi-media and web-based tools. While students benefit from the flexibility of web-based resources, multiple searches, and tasks that must be performed in a nonlinear environment make them tired.

In fully online courses, students cannot receive immediate feedback from their instructors or classmates; hence, they must rely on their decisions, indicating the necessity of developing various interventions intended to improve the effectiveness of online courses [26-33].

Educational activities were the third central theme. In this regard, the findings indicated the effectiveness of blended learning as a multi-dimensional method [34]. The adaptation of blended learning differs from one person to another and, while creating long-term learning, results in the satisfaction of both students and their instructors [35-37]. Learners can be more independent and confident in their learning and can also attend classrooms to strengthen their social skills [38]. A practical approach to increase learning effectiveness is promoting ease of access to educational materials and increasing the effectiveness of costs. In addition, by expanding learning opportunities, this method increases the attractiveness of learning and considers learners' differences; everyone follows a particular learning path, indicating the necessity of using different methods. As a flexible method, online learning is associated with increased permanent access to educational materials [8,28,31,35,39-44].

Last but not least, the fourth theme was evaluation. This study demonstrated that blended learning is not a cumbersome task and can stimulate in-depth positive changes. However, some principles must be respected to achieve the highest level of effectiveness, including continuous evaluation of instructors, students, and

other components. Achieving the benefits of blended learning requires several interventions and programs. Hence, while determining the main research framework, it is necessary to develop an appropriate framework for online learning [30,39, 42, 45-50].

It is necessary to mention the study's limitations, including focusing on the field of nursing. Hence, caution should be taken when generalizing the findings. In addition, some websites were not available during the study period.

## Conclusion

Considering the continuous advancement of nursing science and the fact that nursing is a combination of theoretical and clinical sciences, blended learning is vital in this field. A total of 4 main themes, nine organizer themes, and 23 basic themes were identified as factors that form the online nursing curriculum. The findings can be used by policymakers, administrators, and even university professors to improve nursing educational activities.

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## Conflict of interest

There is no conflict of interest in publishing this article.

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