RESEARCH ARTICLE

FLIPPED LEARNING APPROACH IN NURSING AND ITS IMPACT ON STUDENTS: A SYSTEMATIC REVIEW OF THE LITERATURE

[1],*Olfat A. Salem, [2]Eida Alshammeri, [3]Jamila Alkhaibari, [4]Nawal Abdullah Alharbi and [5]Maram Eid Aldawasari

[1]Department of Nursing Administration and Education, College of Nursing, King Saud University, Riyadh, Kingdom of Saudi Arabia and Nursing Administration Department, Faculty of Nursing, Menoufia University, Menoufia, Egypt

[2]Clinical Instructor, King Khalid Hospital-Hail

[3]Nurse Manager, King Abdulaziz Medical City-Riyadh

[4]Nursing Director, Maternity and Children's Hospital-Hail

[5]King abdulaziz Medical city-Riyadh –Registered nurse

ABSTRACT

Objective: This research aimed to appraise and synthesis existing literature on using the "flipped learning approach in nursing education and its impact on students in the Saudi Arabia context. **Design:** The systematic review method was finalized from three different databases July 2019: PubMed, Psyc INFO, and Google Scholar, which contribute to the achieving of various objectives. The methodological quality of included studies was assessed with the criteria established by Buckley *et al*., 2009. **Results:** The studies reviewed indicate that there is a potential impact of applying a flipped learning approach in nursing education, where it has been shown to achieve several outcomes, in addition to having several psychological effects on students that may sometimes be positive and at other times negative. Conclusion: The study results suggest that the flipped learning approach can improve students' awareness, knowledge, academic achievement, interaction, participation, and collaboration. However, studies also indicate the need to create a stimulating and enjoyable learning environment for students by identifying their preferred learning patterns.

INTRODUCTION

Strengths and limitations of this study

- The scoping review methodology is appropriate to use when a topic is not extensively reviewed as with research on flipped learning approach.
- The search strategy is developed a systematic computerized search in three different databases.
- The data comparison phase aims at creating the characteristics, patterns and relationships between the primary sources of the subject of the review; which is derived by examining the data display.
- Only literature in English will be included.

Corresponding author: **Olfat A. Salem,**
Department of Nursing Administration and Education, College of Nursing, King Saud University, Riyadh, Kingdom of Saudi Arabia and Nursing Administration Department, Faculty of Nursing, Menoufia University, Menoufia, Egypt.

- This review has focused on Saudi Arabia context. Which led to access to a limited number of relevant studies in the field of study.

Background

There is welling worldwide interest in integrating technology into education systems as it provides a number of tools and methods that contribute to increasing effectiveness of delivering education and helping to overcome time and space constraints that may face learners and teachers as well. In turn, technology contributes in increase learners' control over their study hours and contribute to the creation of an environment that suits with their different needs. Currently, Higher education institutions have become concerned with this aspect as a remarkable education requirement that contributes to the development of students' knowledge and interaction and defined as a way for encouraging students self-learning.

Nowadays, there is a growing belief among those interested in the development of teaching methods and strategies that flipped learning approach is among effective ways to use technology in education without compromising the principles of traditional education. The direct interaction between the learner and the teacher on the one hand and between the learners on the other is an essential foundation for building learning (Hussey *et al*., 2015). Recently, there is a large amount of literature discussing the effectiveness of using flipped learning approach in higher education as a technology-based approach to education in order to achieve effective structural design of courses. Originally, flipped learning is among educational models have designed to use modern technology and Internet in a way that allows the teacher to prepare the educational materials through video clips, audio files or other media for students to see in their homes or elsewhere using their computers, smart phones or tablets before attending the lesson. While the lecture time is devoted to discussions, projects and training. Thus, the concept of flipped learning largely guarantees optimal utilization of teacher time during class.

Higher education institutes have been using this learning approach on the basis that it contributes to the achievement of several positive outcomes, either at the level of students' achievement or interaction. It has considered that flipped learning is among instructional models that effectively focusing on deliver a student-centered instructional model (Sajid *et al*., 2016). This claim assisting in interpret higher education institutions behavior towards supporting the emerging of flipped learning approach in their educational systems within various scientific disciplines they offer (Hao, 2016). Nursing is one of the scientific disciplines that use the flipped learning approach to achieve the efficiency of education and increase the interaction and attention of students within the classes. As it is one of the critical health care disciplines, which require students expose to the necessary knowledge that suits the professional needs.

Considering the above, there is an increasing interest in employing technology in education as it provides several tools helping in make learning experience easier and more interactive. This is part of the efforts to enhance the educational environment and increase its effectiveness, which in turn stimulates students towards learning and providing them with the required academic experience. There is no doubt that there is a need to explore the reality of the application of the inverted learning curriculum in nursing education in the Kingdom of Saudi Arabia, which is an interactive learning method that is concerned with employing technology to improve learning process outcomes.

Problem of the study: Several studies have highlighted several challenges facing education in higher education institutions, including the lack of motivation, collaboration, and interaction of students. This is due to the use of the traditional pattern of education directed at giving students information within class without providing interactive environment. Several studies have attempted to address this set of challenges through creative and innovative teaching methods that help to motivate students and increase the effectiveness of the teaching process, including flipped learning approach. This approach involves the use of technology in education to increase students' activity and improve their levels of achievement.

Alharbi.et., al.(2015)noted that nursing education in Saudi Arabia is suffering from several challenges and obstacles that limit the effectiveness of the educational process, especially those related to the characteristics of teachers and learners (Alharbi, 2017). Thus, this calls for enriching the traditional educational style with interactive teaching methods. This claim backed by a study that highlighted many of challenges that faces Nursing education in Saudi Arabia that are divided into two major groups: structural and operational challenges. The first group of challenges highlighted on the shortage of well-trained nursing staff, while the second group showed the traditionalism of learning and teaching approaches. The need to focus on nursing education has logically increased with the increasing need to provide Saudi hospitals with scientifically trained staff. This increase in hospital needs is a result of Saudi Arabia's 2030 vision to replace expatriate labor force with local qualified workforce.

Regarding to the importance of nursing learning, this research is focusing in flipped learning approach as a method for delivering blended learning and investigating its roles in achieving effectiveness of educational system and enhancing students' engagement and performance. Therefore, this review aims at answering a set of questions. What is the reality of the use of flipped learning approach in nursing curricula across the institutions of higher education in Saudi Arabia? What are the psychological effects of using flipped learning approach for nursing students in higher education institutions in Saudi Arabia? What are the outcomes achieved using flipped learning approach in nursing curricula in higher education institutions in Saudi Arabia?

Objectives: This study seek to review, evaluate, and compile empirical and experimental studies that have focused in exploring the reality of applying "flipped learning approach in nursing education in Saudi Arabia higher institutes", and tried to identify its effectiveness as a learning style, and measured the psychological impacts of this learning style on students. Systematic review method used in order achieve the aim of this review.

MATERIALS AND METHODS

The reporting of this systematic review was done in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines. Systematic review method would contribute in achieving of variety objectives. It aims primarily at creating a theoretical background about the study. This method also helps to answer well-focused questions about the subject of the study. This can achieve by following well-defined steps that include, identifying and constructing study questions. Finally, the analysis and synthesis for results in order to reach a deeper interpretation of study subject and the approximate of different findings.

Study selection: The review included studies that investigate the use of flipped learning approach and its impact on student. The methodological quality of included studies was assessed with the criteria established by Buckley *et al*. (2009) (Buckley, 2009).

Data sources and search strategy: A systematic computerized search was finalized in three different databases on July, 2019: PubMed, PsycINFO and Google Scholar, additional strategy was to use manual research using Google

Scholar to reach larger studies in the field. Boolean operators like AND/OR/ Not were used to combine search terms including nursing; nurse*; flip*; curriculum; flipped learning; active learning; blended learning. Searching through the databases led to 30 studies in the field of review, and five studies were matched the criteria of inclusion eligible studies, which were referred to later. Additional search using the Google scholar database resulted in access to three additional studies. The review focus expanded to include further studies that may contain alternative or parallel words close to the title of this review. This is due to the scarcity of studies that match the research criteria. Studies which using one of flipped learning methods also have used to broaden the scope of this review. The research strategy focused on the scientific papers published in English that are interested in discussing the subject of the review within Saudi Arabia. All results that obtained through research process including studies titles and abstracts have downloaded and reviewed using Endnote X7.

Data Evaluation: The aim of this step is to assess the quality of the primary sources obtained, as these resources used different methodologies. The criteria established by Buckley *et al*. (2009) which measures the quality of sources according to several indicators that measure appropriateness of study design, methods, analysis, results, and conclusions. Studies that meet more than seven conditions are considered a high-quality study and will be included in this review. All nine studies were independently evaluated. Based on evaluation process results, one study excluded. In contrast, eight studies considered high quality and would be included in this review. (Figure 1).

RESULTS

Data reduction and display: The primary sources of this review are few and similar in many aspects, including the geographical location of these sources. Therefore, sub grouping method will not be used in this review. Similar data extracted from these sources and placed in data table (2).

Data comparison: The data comparison phase aims at creating the characteristics, patterns and relationships between the primary sources of the subject of the review; which is derived by examining the data display (Falatah, 2018). Two of the reviewed studies focused on exploring the impact of the use of flipped learning approach on student satisfaction towards enabling the use of technology as a learning style (Ali, 2012; Sajid, 2016). Four of reviewed studies investigated the effect of using flipped classrooms, blended learning style on students' academic achievements, and examined its psychological effects on students (Jdaitawi, 2019; Burak, 2017; Elarousy, 2014; Riad, 2015). One study explored the relationship between the e-learning methods used and the orientation of students toward self-directed learning (AbuAssi, 2016). While one study sought to explore the preferences of nursing students for their learning style (Alharbi *et al*., 2017). Two studies used descriptive survey design to investigate the effect of using flipped learning approach on nursing students (Burak 2017; Sajid, 2016). While one of those focused on comparing the use of this method compared to using the traditional education method (Sajid, 2016). In addition, another study used the same design method to explore student's satisfaction towards using technology approaches in learning (Ali, 2012).

Two studies used method a quasi-experimental design to investigate the effect of using of flipped learning on students' performance and outcomes. Where they used a control group and an experimental group to study the differences between the two groups after exposure (Jdaitawi, 2019; Riad, 2013). Two studies used cross-sectional descriptive correlational design by use of questionnaire using adopted scale to test the hypotheses of the study and answer the study questions (Alharbi *et al*., 2017; AbuAssi, 2016). One study used "a single-blind Randomized Control Trial design". Through this design: "control, manipulation and randomization applied to test the effectiveness of study intervention". The aim was to reduce the risk of ascertainment and bias of observation (Elarousy, 2014). Only three studies provided definitions of the flipped or inverted classrooms or learning (Jdaitawi, 2019; Buckley *et al*., 2009; Sajid *et al*., 2016). Two of them presented a theoretical definition of the concept of inverted rows. Jdaitawi, (2019) defined flipped classroom as 'represents one way of mitigating the classroom time spent on teacher-centered lecture while maintaining content (Jdaitawi, 2019). While Sajid *et al*. (2016) showed that "flipped learning approach" is similar in style to the "blended learning style (Sajid *et al*., 2016)", through which classroom lectures and assignments are reversed. Burak *et al*. 2017 defined "flipped learning" in more practical manner as "the way of enhancing students' access to information outside the traditional classroom by transforming the learning pattern, which in turn improves teacher opportunities to take advantage of classroom time for discussion and to enhance student knowledge". One study used another term regarding to flipped learning approach, which is the blended learning (Burak, 2017).

Thus, Riad *et al*. (2013) defined this term as "a way of meeting the challenges of tailoring learning and development to the needs of individuals by integrating the innovative and technological advances offered by online learning with the interaction and participation offered in the best of traditional learning". While other studies not explicitly provided the concept of flipped or blended learning, and merely referred to some of the styles and tools used in this method of learning (Burak *et al*., 2017). Generally, this method of learning emphasis on providing information to students before the actual classroom using various kind of e-learning sources and formats; such as: audio casts, video casts, presentations, electronic books and references, etc. So that the student can collect the necessary information of certain subject and enable them to increase participation and discussion through interaction with the teacher at the real lecture.

Student's Satisfaction: Sajid *et al*. (2016) study results showed that students feel that the flipped classroom style is appropriate to achieve their learning objectives compared to the traditional methods of education as it helps to addressing barriers of time and location. It helps to improve students' understanding through workshops and interaction. Many effective learning strategies used, such as: case-based learning, team-based learning, problem-based learning. Despite the general satisfaction reported, the expected satisfaction of students with the use of technology in education is not absolute (Sajid, 2016). There are a number of factors contribute to the expected satisfaction of students includes: students' attitudes towards the use of information technology, the student's self-efficacy for Internet use, flexibility of course, quality of the course, ease of use, variety of assessment methods, interaction with others (Ali, 2012).

Table 1. Quality Indicators Developed by Buckley *et al*. (2009).

| Indicator	Related Questions
Research question	"Are the hypotheses and questions of the study stated in a clear manner?"
Study subjects	"Is the subject group appropriate for the study being carried out?"
Methods of Data collection	"Are the methods used reliable and valid for the research question and context?"
Data completeness	"Have subjects dropped out? Is the attrition rate less than 50%?"
	"Is the questionnaire response rate acceptable?"
Analysis of results	"Are the statistical or other methods of results analysis used appropriate?"
Conclusions	"Is it clear that the data justify the conclusions drawn?"
Reproducibility	"Could the study be repeated by other researchers?"
Ethical issues	"Were all relevant ethical issues addressed?"
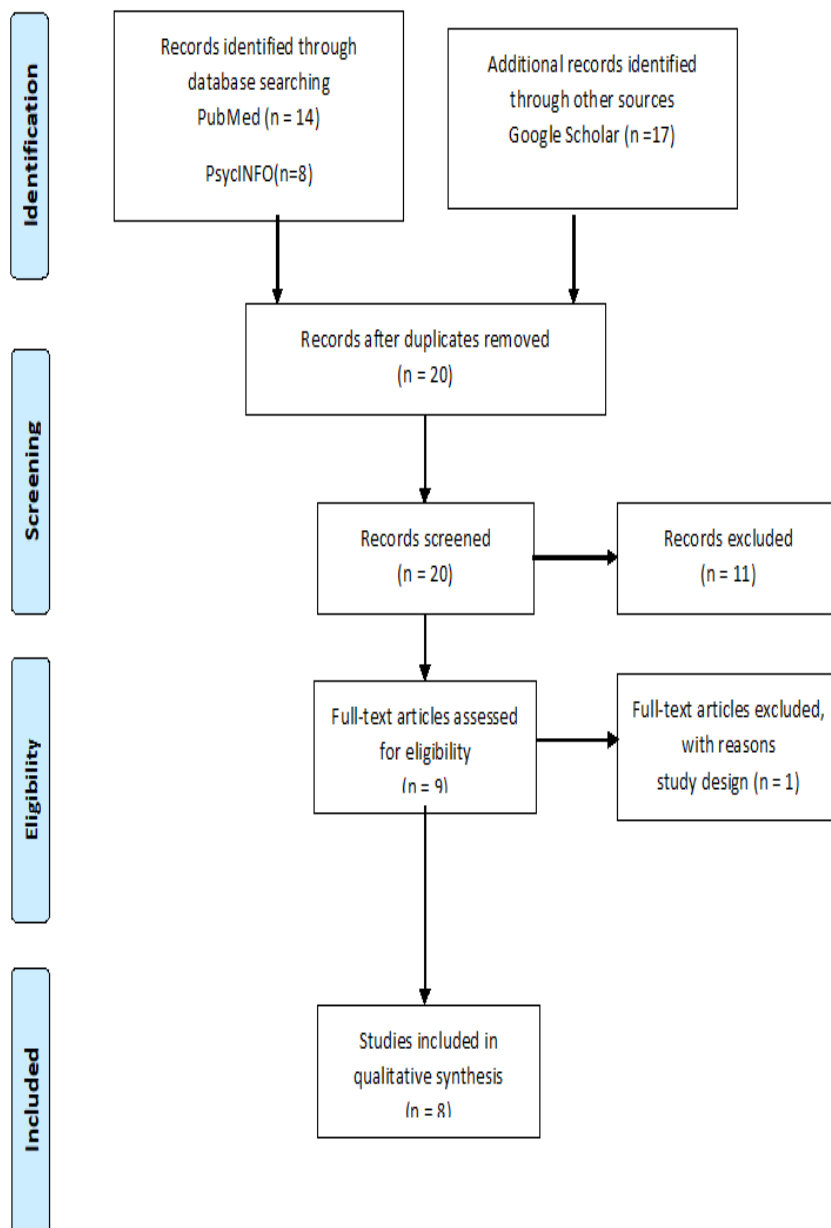
Figure 1. PRISMA 2009 Flow Diagram

Therefore, the purpose is not only to use the flipped learning approach in isolation from the interest in design and provision of educational materials. In addition, pay attention enhance the interaction and participation opportunities of students through workshops and interaction groups. As well as providing the necessary guidance to facilitate students' access and use of e-learning resources. This remarkable need was reported by Sajid *et al*. (2016) who showed that students express their misunderstand or failure to use some blended learning style materials (Sajid, 2016).

Psychological impact on students: The reviewed studies indicated that there is a range of psychological effects of the use of flipped learning approach and e-learning resources on nursing and health care students. Some studies also differed in determining the type of this effects in relation to whether positive or negative. The study of Burak *et al*. (2017); Sajid *et al*. (2016) have concluded that the use of flipped learning affects the degree of student enjoyment in the academic experience (Burak *et al*., 2017; Sajid *et al*., 2016).

Table 2. Characteristics of primary sources

Author(s) (year) Journal	Aim	Design	Sample (response rate)
Burak *et al.* (2017) "MDPI"	To measure the impact of the use of "flipped learning approach on undergraduate nursing students".	Mixed: a descriptive survey, focus group	158 students (80.4%) 15 Students (two focus groups)
Sajid *et al.* (2016) "International Journal of Medical Education"	To assess the impact of using "flipped learning approach and blended learning techniques on students compared to the traditional education approach".	descriptive analytical study	154 students (82.4%)
Ali (2012) "International Journal of Learning& Development"	To determine nursing students' satisfaction towards using "e-learning tools and to identify factors affecting their level of satisfaction at King Khalid University".	Descriptive exploratory study	135 female nursing students
AbuAssi&Alkorashy (2016) "International Journal of Advanced Nursing Studies"	To determine the impact of "learning styles on the decision of adopting self-directed learning style from the perspective of nursing students at King Saud University".	cross-sectional descriptive correlational design	230 female and male nurses (84.7%)
Jdaitawi, (2019) "International Journal of Instruction"	To examine the impact of applying and using the "flipped learning approach on students' self-regulation and social connectedness among them".	quasi-experimental pre-post-test	160 students including Health care and science
Elarousy *et al.* (2014) "International Journal of Nursing & Clinical Practices"	To examine the impact of using "e-learning style as an effective tool to improve nursing students' skills, knowledge and self-confidence".	single-blind Randomized Control Trial	40 nursing students
Alharbi *et al.* (2017) "Hindawi-Nursing Research and Practice"	To explore the preferences of nursing students in Saudi Arabia regarding to various learning styles.	cross-sectional descriptive correlational design	130 nursing students (43%)
Riad *et al.* (2013) "Journal of Education and Practice"	•To investigate the impact of the use of "a structured learning approach on the attitudes and level of achievement of nursing students".	A quasi-experimental research	62 female nurses
From previous studies Prober & Khan, 2016	•Replacing lectures into videos. •Workshops.	•Slight increasing in student's academic achievement.	•Increase attention toward course preparation and increased efforts. •Decrease social interaction. •Reduce enjoyment. •Increase autonomy •Increase engagement Increase independent learning
From previous studies Rotellar, 2016	•Replacing lectures to PowerPoint presentations with instructor voice-overs. • (Team-based learning, problem-based learning, and case-based learning). Asynchronous discussion boards.	•It is increasing students' preference for blended learning. A non-significant increase in the academic achievement of students.	•Increase enjoyment. •Enhance students' cognitive skills.
Not provided	Electronic learning sources.	Students were unsatisfied with e-learning experience.	Self- Efficacy.
Not provided	E-learning sources	•Blended teaching methods are among the most preferred learning styles. Self-directed learning ability is influenced by age and academic level of students.	•Little interest in the self-directed learning approach. No effect on students'
From previous studies Chen *et al.* 2016	Blackboard platform (upload teaching materials.	Increase student's academic experience.	•Improving student's self-regulation •Increase collaboration among students. •Increase student's engagement. Increase social connectedness.
From previous studies Rowe *et al.* 2012	Converts lectures into videos.	Increase students' knowledge and skills regarding the learning topic.	Increase student's self-confidence

| Not provide | •Visual materials. Interactive groups. | •Students' preferencefor visual and active learning styles. •Non-significant association between student's academic achievement and learning preferences. No association between gender and learning preferences. | N/A |
| From previous studies Thorne, 2003 | •Interactive groups. E-learning sources. | •Improve student's attitudes toward the e-learning environment. A non-significant increase in students' academic achievement | Increase student's interaction. Increase student's motivations. Increase students' self-regulation |

However, Burak *et al*. (2017) found that the effect of this approach is negative, as it reduces the degree of nursing students' enjoyment of the learning content that based on flipped learning approach compared to the traditional learning method. In contrast, Burak *et al*. (2017) found that the effect of using flipped learning approach and blended learning increases student enjoyment (Burak *et al*., 2017).Range of studies have indicated that the use of flipped learning approach would affect the degree of autonomy and self-efficacy of nursing students (Jdaitawi, 2019; Burak *et al*., 2017; Ali, 2012). Burak *et al*. (2017) found that the use of flipped classroom approach promoting a greater learner autonomy, which resulted in better retention of learned material[11]. In addition, Jdaitawi, (2019) reported that students in flipped classroom had shown significantly higher level of self-regulation compared to students in the traditional group[6]. While Ali (2012) found that, this factor does not have a decisive impact on the degree of satisfaction of nursing students towards the use of E-learning resources[12]. In addition, number of studies have shown that the flipped learning education approach has an impact on the level of social interaction among students (Jdaitawi, 2019; Burak, 2017; Riad, 2013).

Riad *et al*. (2013) found that flipped learning approach has a positive effect on students' social interaction degree. The learning environment, which is concerned with the use of electronic resources for learning, contributes to providing an interactive environment that leads to interaction among students, interaction of students with educational content, interaction of students with the instructor (Riad, 2013). Furthermore, a number of studies have shown that there is an impact of the use of flipped learning approach on student engagement. Jdaitawi, (2019) found that the use of the flipped learning approach contributes to increasing student's engagement through their participation in educational activities (Jdaitawi, 2019). While Burak *et al*. (2017) found that the use of flipped learning approach leads to a lack teacher engagement, which may be due to increased autonomy and self-reliance of students (Burak *et al*., 2017). Jdaitawi, (2019) study showed that flipped learning approach contributes to increased collaboration among students by enhancing the ways of communication and electronic interaction among students through discussion forums. This also contributes to the development of their cognitive strategies (Jdaitawi, 2019). This conclusion is in line with Sajid *et al*. (2016) findings as they found that the use of flipped learning approach contributes to the improvement of student's cognitive skills by contributing to the improvement of students' ability to preparation through exposure to information and learning materials before the actual lecture time (Sajid, 2016). This conclusion supported by Burak *et al*. (2017) findings, where they found that using of flipped learning approach contributes to the improvement of students' preparation of courses compared to the traditional methods of learning, which is limited to the expressing knowledge and information to students about learning topic on

the actual lecture. Riad *et al*. (2013) study indicates that students who used flipped learning approach were more motivated to learn than students who used traditional learning methods. This result suggests that flipped learning approach is more effective in increasing student motivation towards learning (Riad *et al*., 2013).

Discussion and Limitation: The reviewed studies examined the reality of applying of flipped learning approach in higher education and attempted to understand the implications of its use. Thus, these studies used the descriptive and experimental methods to explore this phenomenon. Examine of the effect of this approach over several time periods contributed to the understanding of its nature. Notably, studies have noted a number of negative and / or positive effects for using flipped learning style in nursing education. The review concluded that a number of potential effects of this method of learning on students' perception, achievement, and attitudes. Which in turn calls for increased use of the experimental method in order to gain better understand the phenomenon. Therefore, Nurse Educators should determine whether teaching strategies meet the needs of their students in order to increase the number of professional nurses.

The methodological quality of each included studies was assessed using the best evidence in medical education quality indicators (BEME) developed by Buckley *et al*, (2009)[9] Table (2) BEME was chosen as the scoring system due to its relevance to studies. Studies that meet more than seven conditions are considered a high quality and included in the review. This review concluded that there is a paucity of studies and practical experiments about the study. Therefore, the educational implication of this review encourages universities and nursing educators to work to identify the preferred learning styles of students when planning of activities and courses that positively affect student's perceptions and attitudes towards the educational process. Studies have also indicated that student' preferences for technology in learning is related to a number of variables such as accessibility, technological awareness, and quality of educational resources. Which calls the need to pay attention to the development of educational materials. Another implication is also the need to move towards the use of an active and self-directed learning style rather than traditional ones, attention to motivation by using combination of online and traditional approach will have a positive effect on learner motivation. This contribute to effective learning experience. This review indicates that studies on this aspect of knowledge were limited in Saudi Arabia context. As stated previously, there is a need to conduct further experimental researches on the use of flipped learning approach in nursing education, especially in the Kingdom of Saudi Arabia, due to the scarcity of studies on this aspect. A limitation of this review is that, although there is a large body of knowledge that examined the impact of the use of flipped

learning approach on nursing students' perceptions and attitudes, this review has focused on Saudi Arabia context.

Conclusion

The global trend towards technology employment in education and using of effective learning styles to improve student's academic experience and to promote the appropriate learning environment is requiring greater focus on exploring the use of flipped learning approach and its effectiveness. The results of this study formed by reviewing a number of literatures that focuses on the use of flipped learning approach in nursing higher education institutes in Saudi Arabia. The attention toward review topic was derived from the reality of Saudi Arabia needs to provide skilled nurses, especially in the light of the Replacement plans adopted by the Kingdom. This review based on a systematic review methodology to identify the reality of using flipped learning approach in nursing education in higher education institutions, and to identify its impacts on students. It also found that the use of flipped learning approach may achieves a number of positive outcomes such as improving students' awareness and knowledge, improving academic achievement, increasing interaction and participation, and increasing collaboration. However, studies suggest the need to create a stimulating and enjoyable learning environment for students by identifying their preferred learning patterns.

REFERENCES

AbuAssi, N. E. and Alkorashy, H. A. E. 2016. Relationship between learning style and readiness for self-directed learning among nursing students at king Saud university, Saudi Arabia. *International Journal of Advanced Nursing Studies*, 5(2), 109-116.

Alharbi, H. A., Almutairi, A. F., Alhelih, E. M. and Alshehry, A. S. 2017. The learning preferences among nursing students in the King Saud University in Saudi Arabia: A cross-sectional survey. *Nursing research and practice*, 2017.

Ali, W. G. M. 2012. Factors affecting nursing student's satisfaction with e-learning experience in King Khalid University, Saudi Arabia. *dimension*, 5, 13-18.

Betihavas, V., Bridgman, H., Kornhaber, R. and Cross, M. 2016. The evidence for 'flipping out': a systematic review of the flipped classroom in nursing education. *Nurse education today*, 38, 15-21.

Buckley, S., Coleman, J., Davison, I., Khan, K. S., Zamora, J., Malick, S. and Sayers, J. 2009. The educational effects of portfolios on undergraduate student learning: a Best Evidence Medical Education (BEME) systematic review. BEME Guide No. 11. *Medical teacher*, 31(4), 282-298.

Burak, K., Raman, M., Paget, M., Busche, K., Coderre, S. and McLaughlin, K. 2017. A Mixed Methods Study on the Effect of Flipping the Undergraduate Medical Classroom. *Education Sciences*, 7(4), 83.

Cronin, P., Ryan, F. and Coughlan, M. 2008. Undertaking a literature review: a step-by-step approach. *British journal of nursing*, 17(1), 38-43.

Elarousy, W., Abdulshakoor, E., Bafail, R., and Shebaili, M. 2014. The effectiveness of e-learning in enhancing neonatal resuscitation skills, knowledge and confidence of undergraduate nursing students. *International Journal of Nursing and Clinical Practices*, 2014.

Falatah, Rawaih, and Olfat A. Salem. "Nurse turnover in the Kingdom of Saudi Arabia: An integrative review." *Journal of nursing management* 26.6 (2018): 630-638.

Hao, Y. 2016. Exploring undergraduates' perspectives and flipped learning readiness in their flipped classrooms. *Computers in Human Behavior*, 59, 82-92.

Hussey, H. D., Richmond, A. S. and Fleck, B. 2015. A primer for creating a flipped psychology course. *Psychology Learning and Teaching*, 14(2), 169-185.

Jdaitawi, M. 2019. The Effect of Flipped Classroom Strategy on Students Learning Outcomes. *International Journal of Instruction*, 12(3), 665-680. https://doi.org/10.29333/iji.2019.12340a

Moher D., Liberati A., Tetzlaff, J. *et al.*, 2009. Preferred reporting items for Systematic reviews and meta-analyses: the PRISMA statement. *Ann Intern Med.,* 151:264-9,w64.

Riad, N. A., Saadat, M. F. and Badawy, A. I. 2013. Effect of blended learning approach on student nurses' attitudes and academic achievement. *Journal of Education and Practice*, 4(24), 152-159.

Sajid, M. R., Laheji, A. F., Abothenain, F., Salam, Y., AlJayar, D., and Obeidat, A. 2016. Can blended learning and the flipped classroom improve student learning and satisfaction in Saudi Arabia?. *International journal of medical education*, 7, 281–285. doi:10.5116/ijme.57a7.83d4

Shurygin, V. Y., and Krasnova, L. A. 2016. Electronic Learning Courses as a Means to Activate Students' Independent Work in Studying Physics. *International Journal of Environmental and Science Education*, 11(8), 1743-1751.

****