

## Teaching through integration - Action research at a private nursing institution in Karachi, Pakistan

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### Abstract

**Objective:** This research aims to explore the outcome of teaching through integration, on nursing students learning using Harden model (1984) of curriculum strategy.

**Method:** The study used action research as a methodology. Two modules of Year II BScN curriculum were taught through integration to 120 students at a private nursing institute in Karachi, Pakistan. The Data was collected from February to May 2018. Four focus group discussions (FGD) of six students each were conducted, before and after module implementation. The data were analysed using Creswell method.

**Results:** The study findings consist of three themes “integration adds to contentment”, “integration carries challenges and “integration supplements teaching learning strategies” with their respective subthemes as Complete connected and comprehensively concise” Integration carries challenges, added burden, and lacked creativity and logistics.

**Conclusion:** The findings show that teaching through integrated modules help students to become focused and responsible learner, optimize understanding of concepts, and strengthen theory practice integration for delivering holistic care. The study recommends to use integration strategy as a step towards enhanced student learning and better patient outcome.

**Keywords:** Education, Nursing, Baccalaureate, Curriculum. (JPMA 74: 1229; 2024)

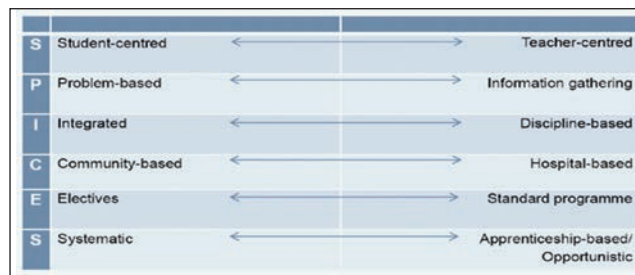
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### Introduction

Nursing Education in Pakistan has developed over decades, starting from diploma to PhD level. The first nursing curriculum was developed in 1973, traditionally, there was apprenticeship model, hospital administration mostly supervised by doctors. Later, BScN curriculum was initiated in 1996 and the curriculum was approved by PNC and HEC in 2006.<sup>1</sup> The undergraduate nursing curriculum is a combination of theory and clinical components. The theory component covers core nursing, science, research and few compulsory courses, while the clinical supplements include attitude building, psychomotor and cognitive development.<sup>2</sup> This combination requires theory-practice and science-nursing integration to enable nurses to provide holistic nursing care to patients. It is assumed that creating these linkages are difficult, as it requires deep reflection and training. In current practice nationally, most of the time subjects are taught in silos, with minimum concepts integration. Curriculum is implemented as it is prescribed. Literature has reported that lack of teaching learning skills and research in nursing education suppress the image of nurses.<sup>1</sup> Inability of students to integrate between theory-practice and science-nursing eventually results in unsatisfactory patient care. During clinical

practice, the same difficulty of integration and resulting in dissatisfaction was identified by the teaching teams at the private school of nursing and midwifery in Karachi, Pakistan. The assumption for this gap was, teaching being done traditionally and in isolation. To address this disconnect, the idea of integration and alignment of nursing and science courses was studied through action research, using Harden model of curriculum strategy (Figure).

Integration is an organized way of teaching theory content from different disciplines as one unified and interrelated concept, it avoids fragmentations of the concepts that enable better learning outcome.<sup>3,4</sup> It has been reported that teaching through integration is learner centred and a complex process.<sup>5</sup> Literature shares an example where integration through rethinking curriculum for a primary care course, has resulted in successfully aligning behavioural health, aesthetic knowing, and technology altogether.<sup>6</sup> Another example of integration of nutrition



**Figure:** Explaining the SPICE model that is used in integration of year II BScN curriculum.

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concepts into nursing curriculum developed the competence of nurses for patient care in clinical setting.<sup>7</sup> It is also suggested that through integration interprofessional collaboration, teamwork and roles identification also get enhanced.<sup>8</sup> The evidence of integration between different disciplines (health care, engineering, biological and applied science) was also well identified in recent pandemic. The professionals collaboratively work together and to combat COVID-19.

One more idea of vertical integration between the clinical and basic science components was done in the medical education.<sup>9</sup>

Transfer of learning through integrated approach, using simulation to teach cardiothoracic surgical skills is another set example, further research is suggested to identify the impact in real time.<sup>10</sup> Unlike medical education, integration is also a demand of the time since the twentieth century.<sup>9</sup> All the above stated examples affirm the outcomes of integration.

Through pilot action research, it was aimed to explore the students' perception about usefulness of learning through integration as compared to conventional teaching. Blended learning (BL) mode was used as a teaching learning strategy. BL enhance accessibility and convenience for the content taught.<sup>11</sup> The use of BL in health care education supports in construction of knowledge, problem-solving approach, critical thinking, and many other aspects of roles of health care providers. BL has also been proven in improving knowledge outcomes of health education in comparison to traditional teaching and learning.<sup>12,13</sup>

## Methodology

**Research Design:** Action research (AR) was utilized using planning, implementation, observation and reflection. AR suits best for this study as it allowed researcher to move forward based on faculty and students' feedback after implementation of first integrated module and modify the second module accordingly. The time duration of both the modules delivery, was between February, 2018 to May, 2018.

### The design details are:

**Planning Phase:** After permission from head of department, the meeting of pathophysiology, pharmacology, adult health nursing and health assessment faculty was held and two modules: cellular adaptation and aberrant cell growth, and obstructive lung disorder were selected for integration of all four subjects.

**Action Phase:** The module was prepared in BL mode, reading and quizzes were online as pre-requisites for the

face-to face session. In in-person component four faculty members delivered their respective portions of the content. At the end of the session, focus group discussion (FGD) was held to collect perception on strategy and the integrated module.

Students' perception and faculty post teaching feedback on first module was utilized to transform the second module and second FGD was conducted.

**Observation Phase:** The faculty team focused on the completion of course objectives, identified the areas for improvement in teaching strategies. This activity became the base for next plan. In observation, it was also planned to watch carefully on constraints and apply learning outcomes through simulated clinical practice.

**Reflective phase:** In the final phase, way forward was formed based on the findings of students' FGDs and faculty post session discussion.

**Inclusion and exclusion criteria:** All the students male or female who were enrolled in BScN year II semester I class of 2020 and were willing to participate in the study. were eligible to be part of the study.

**Sampling, sample size and Data Collection:** All 147 students fulfilling inclusion criteria were invited to attend the study briefing session. 12 students who showed willingness and consented for the study were recruited as study sample. Data was collected through FGDs using semi structured interview guide for both modules. The FGDs lasted for 40-60 minutes and was audiotaped along with field notes.

**Data Analysis:** Creswell<sup>14</sup> steps were used to analyse the data. Data analysis was started simultaneously with the data collection for timely clarification of any unclear answers from the participants.

**Ethical Consideration:** The ethical considerations were approved by Aga Khan University, Karachi Pakistan. A voluntary informed consent ensured anonymity and confidentiality of each participant. The data were kept in lock and key having access to research team only.

## Results

The following three themes were extracted altogether. Each theme emerging from FGD is discussed in detail with its respective subthemes. The themes and sub-themes are shown in the table.

**Integration added to contentment:** Students verbalized immense satisfaction. The main feature liked by the students, was compact learning. As integrated module combined, the related concepts of a disease process from

**Table:** Explaining the themes and subthemes of results.

Themes	Sub themes
integration adds to contentment.	Complete connection comprehensively concised
integration carries challenges	Added burden and lacked creativity and logistics
integration supplements teaching learning strategies	No subtheme

each discipline, hence, each concept related to the two diseases process was presented as one compact module. The subtheme emerging out from the theme of contentment are: Complete-connection and comprehensive concise.

**Complete connection:** The data revealed that teaching through integrated modules connected all the four subjects (pathophysiology, health assessment pharmacology and nursing care), as it appeared to be inseparable, facilitating to make linkages between alteration in physiology of body giving rise to related signs and symptoms. Then to identify these signs symptoms through health assessment, and finally relating pharmacology to nursing interventions. Study participants shared their achieved sense of connectedness as:

*"One benefit of studying all four concepts together in one go is that we remember each of them. Otherwise studying all separately like one day we study pathophysiology... a week after we study about its medicines then next day we study assessment so we used to find difficulty remembering everything... Now in one day we get to know this is the disease, this is the causes, this is its alteration occurring on cellular level this is the medicine and this is its nursing care. This is good I like this part"*

The similar response about studying all relevant concepts in one integrated module rather than at different times and in different courses as:

*"I would say it was effective, effective in a sense that students come with a mindset that we have to study one disease, so we have to study its patho (pathophysiology), health assessment, pharma (pharmacology) and nursing care in one go all together, so in that sense it is effective. Otherwise, we have one class of either patho, pharma or assessment and throughout the week we study one disease in different sections but this was very effective"*

The connectedness also helped resolve queries, memorize, and understand difficult terminology. As one participant verbalized:

*"...our queries kept resolving throughout the day. Every previous concept gets automatically connected with new and all the terminologies used were aligned and connected and we did not have much queries about terminologies. Studying these concepts separately was a problem as we used to switch*

*from one concept to other in weeks by that time we used to forget terminologies... Without revision we did not understand the whole thing but due to this continuous module we understood better than the previous class."*

**Comprehensively concise:** Being to the point yet giving the complete picture was another important aspect of the integrated module. Participants were focussed and able to make sense of course objectives. One of the participants said that:

*"it was helpful in a sense that module focussed to one disease process completely in a crisp way and as a student it become for me personally very helpful. Like patho (pathophysiology) was crisp and clear, AHN (adult health nursing) was clear, HA (health assessment) was also crisp. All concepts were turning around the same one disease, for me it was a focussed exercise"*

Another participant said: *"every faculty was teaching the same concept, means same topic discussion on the same day so it was so focussed and good for us that at the same time we were able to understand everything."*

A view from another participant revealed that: *"At many times, faculty used to repeat few concepts that are already covered in another the stand-alone course. When we studied the integrated module, we could relate the concepts, the flow/organization got improved and most of all, repetition was avoided... and we saved time."*

Thus, avoiding repetition and organizing the content for integration had created crisp, focussed and concise learning.

The integration of modules allowed team teaching, by collaborating for planning the sequence of class, match similarity to avoid redundancy. One participant said:

*"the good thing was that we studied in a sequence. Like as we started a disease, in starting we studied the patho (pathophysiology) that why/ how obstructive lung disease occur then, simultaneously we studied its assessment and pharma (pharmacology) that what medicines to use to treat the disease, that was really helpful so over all I would say that it was very effective for me, I learnt a lot at a time"*

**Integration carries challenges:** The second theme is about the challenging nature of the integrated module and participants asked for creativity and innovation to understand the concepts. The research activity was one of its kind in the teaching site. Thus, challenges identified by study participants have informed various recommendations for future endeavour. The related subthemes are as follow:

**Added burden:** Participants felt that many concepts in a day added a workload, for example pre-readings, long hours' classes and online activities. Students showed dissatisfaction for making the day swarming. One of the participants shared:

*"each faculty was sending pre class tasks related to their concept which is kind of burden for us. Out of all, the pre readings some we understand some not. If we focus on one aspect of the disease and do pre-reading of that as we are doing up till now, is relatively more helpful"*

**Lacked creativity and logistics:** The integration at times lacked creativity in strategies, sustaining concentration, addressing technology issues and logistics. Students shared that faculty members were using traditional strategies, to them innovation was needed. One participant shared that:

*"faculty used power point presentation, then we were given a group work so with that we did not have much benefit because we were not able to ask questions openly in group and other thing is that in group work, we do not take interest and after group work when teacher asked us to present the work no one was ready and when presented it was not heard by other students with interest so it was very demotivating"*

Students informed that modules were lengthy, it could be divided in two days with adequate refreshing breaks. One suggested that:

*"as it was boring and hectic students were asking for frequent breaks, if you do good activities then we do not need to have break"*

Moreover, students shared about a regular fault of technology, effective use of technology in class was problematic as one participant shared:

*"Secondly, functioning of internet at classroom remained an issue. Faculty prepared kahoot quiz but due to router issue students were not able to connect with internet and then she had to evaluate it through questions. It was good that faculty had plan B ready but kahoot has its own fun and learning which got compromised if such issues occurred."*

Students showed concern about absenteeism, one day will miss the entire concept, as participant said:

*"If we can see it in a manner that any student who has missed a class because of any reason, he may be sick... so he has lost all 5 sessions and he has got a big loss of one day, a big disease 5 session he has missed, he has not come for one day and has lost 5 sessions, so it is a big loss, there shall be some way to recover the loss as well"*

**Integration supplemented by teaching learning strategies:** The second module was modified after first FGD, in that module students appreciated the use of video as preparation, applying simulation and competition-based learning. Students found it interesting, easy and value added. The student referring to the pre reading said,

*"teachers send us links of videos to learn through them so that we can understand in the class or our understanding is enhanced in class, it was very nice and students who watched the videos, did not face any issue."*

Participants emphasized for a mechanism to identify inactive learners, as one said,

*"there must be a check and balance to see who has read or not, ... I will give one suggestion that there also we should create some check and balance that who has read or not..."*

Student praised simulation case, it was interesting and helpful to rectify actions, as one said:

*"second thing was simulation, it was best because we were asked to wear scrub suit, go to simulation lab, we will have new exposure... we would explore things, teacher went inside the control room, and we acted as nurses there, as health care professionals, we were feeling that if in real life we had such patient then? We were doing interventions and feeling independent..."*

The competition-based quiz, improved learners' knowledge about the subject. One participant shared that,

*"here I would like to appreciate the HA (health assessment) quiz, the way it was done by maam she divided us in groups then generated competition within the class, it was challenging our knowledge that we were discussing and then thinking about answers."*

## Discussion

Integration of theory and practice is an integral aspect of nursing profession. The idea of curriculum integration in nursing is not new; however, different organizations seek it as per their need, knowledge, and resources. The study was an attempt to generate evidence about outcomes of teaching through integration in nursing curriculum.

The study proved that teaching through integration is highly useful to make connections in inter-disciplinary courses while keeping the content concise, focussed and comprehensive pertaining to the discipline. Literature reported, "The principle of comprehensiveness means that the whole and the parts are analysed at a single moment and together, interconnecting concepts and inter-relating contents which come from various knowledge areas, are addressed together in the curricular disciplines." (p.67).<sup>15</sup>

This shows that interconnected concepts that were once taught as different courses are now developed as one integrated module. Through this development the content and efforts are focussed by avoiding repeated concepts. A similar viewpoint is also shared that while planning the curriculum actions, it is important to keep the principles of teaching learning at standard level and integrated, in a manner that it ensures the effective teaching practices and generate a progressive condition for both educator and learner.<sup>16</sup> Learners also informed that they witnessed the connections of isolated subjects. Integrated syllabus built new knowledge on learnt concepts, of anatomy physiology with the pathologic processes at cellular level. Learners also identified appearance of any disease on body as symptoms, its assessment, pharmacological treatment and the nursing care by applying it in simulated scenario in the second module. It is suggested that clinical care is itself dynamic, if nurses are trained with simulated awareness, it will ensure the quality and safety.<sup>17</sup> This also marks that learner have applied social constructivism by applying theory to the case.<sup>18</sup> The research team was able to operationalize the vertical alignment and integration in courses at year level.

**Challenges and Limitations:** In an effort to integrate the concepts in first of the two integrated modules; the faculty members focused on developing interest and creating engagement, however, it was identified as hazy in the first module. Although faculty members are trained to apply teaching learning strategies while teaching their specific topics within the module on contrary, as they were implementing the integrated module for the first time their focus was shifted towards content integration. The team later acknowledged the challenges like interrupted internet and lack of other logistics,<sup>7</sup> resulting in loss of students' engagement. However, in the second module faculty members were ready with an alternative plan of their strategies during limited network connectivity. Moreover, the level of engagement was also enhanced in Module two by applying theory into practice through a simulated case. As highlighted by students that if they miss a day due to any reason it would be a complete miss out of all courses focussed under integration, this was totally overlooked and remained unidentified during the planning of this integration. As soon as the challenge was verbalized by the research participants in FGD one, the faculty team deliberated on its solution that in such cases students will be given extra time to complete the missed module and voice over presentation was shared as an archive. Fortunately, in our good faith none of the students remained absent or missed any of the two modules. The learning from this research helped the team to apply alternative ways of teaching and learning in amid and post covid situation. With increased demand of using online

mode of education, amid covid, for delivering content and planning examination in social distancing situation; the team prepared voice over presentations, scripts for presentations using Microsoft word, vodcast and podcast, and designed online and offline exams. The research team utilized the inclusive online teaching approach to reach out to diverse students living in different demography of the country. It was done with less efforts and hesitation as the teaching team with integration was already experienced this in the research phase.

**Recommendation:** The research enabled to test a strategy of science-nursing and theory-practice integration. It is to recommend that to support quality nursing education in the nation, research lead innovation shall be practiced. Teaching through integration will help us to move from content based to concept-based teaching. Teacher development workshops, designing an infrastructure that utilize the technology and curriculum reformation with contextual reality is the need to execute nursing education in Pakistan.

## Conclusion

The research concluded that teaching through integration is supporting learners by creating linkages of one discipline to another. Health care professions cannot be separated from theory and practice and from science and pure medical knowledge. The research tested the integration through modalities of online and face to face with application into simulation. This embarks that using technology into education that supplements formative learning is important. This study reminded that check and balance, innovative strategies, planning objectives, curriculum alignment and juggling with technology should be mindful while integrating different disciplines.

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NA: Conceived, design, questionnaire design, piloting the questionnaire, data collection, interpretation, drafting and final approval.

SR: Conceived, design, prepared research questionnaire, data collection, interpretation and drafting.

ZS, SI: Concept and finalizing.