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# Theory-Practice Gap in Nursing Education at Arab American University

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**Abstract**

The theory-practice gap in nursing education confuses students and decreases the quality of their training. This study aims to examine the gap between theoretical teaching and clinical training for students at AAUP. A cross-sectional survey of 192 nursing students at AAUP. Questions measuring aspects of the theory-practice gap were developed based on the literature review. Socio-demographic variables included sex, age, residence, and school year. Simple frequencies and multivariate linear regression were used to analyze the data. The p-value was set at 0.05 for statistical significance. The practical trainer was the most important factor in bridging students' theory-practice gap. Practical trainers who explain to the students the theoretical protocols of the nursing procedures produced students with better abilities to link theory and practice ($B$ = 1.53, $P$ = 0.000). The university teacher was less important in the theory-practice link. The simulation training was significantly related to students' abilities to link practice with theory ($B$ = 0.28, $P$ = 0.036). Investing in nursing clinical practice and supporting the clinical instructors is recommended. Communication between the university teachers and the practical instructors can improve their training skills and their abilities to link theory with practice.

## Introduction

The theory-practice gap in nursing education has been defined as the lack of congruence between what the students learn in their academic lectures and what they see is practiced in the clinical settings (Baxter, 2007). Problems resulting from this incongruence include students feeling confused, experiencing a transition shock, negative socialization (Spouse, 2001), and not effectively implementing evidence-based practice (Hatlevik, 2012). Practice that is not linked to theory results in superficial learning with students not understanding the procedures at a deeper more meaningful level (Espeland & Indrehus, 2003). Students reactions when they see procedures implemented contrary to what they had learned in class vary. Some remain silent, others justify that the staff are overworked and the mismatch is due to lack of time, while others are courageous enough to confront and ask (Ewertsson et al., 2017).

The nursing program at AAUP is a four-year program which requires 140 credit hours of theoretical lectures and clinical practice to complete. The program seeks to achieve integration and parallelism between the two. The theoretical part is given in the university premises and includes lectures and seminars in basic and advanced nursing sciences. The theoretical training involves training in biomedical, psychosocial, community and

management disciplines. The practical part of the program consists of hands-on training in local hospitals and clinics. A clinical instructor who is a staff nurse working at the hospital guides the practical training while a clinical teacher who is based at the university guides the theoretical training. A supervisor who teaches at the university is assigned to supervise the students' practical training. The supervisor's role is to monitor students' progress.

Very few studies examined the theory-practice gap in Palestine resulting in a lack of data for formulating evidence-based policies. Therefore, the objectives of this study were to examine the theory practice gap at AAUP from the students' perspective and to examine how the theory-practice gap varies by students' individual characteristics (gender, school year, GPA), university level characteristics (university teacher and simulation resources) and hospital-level factors (policies, clinical instructor, and type of hospital where practicum took place). Hospitals where practicum took place could be either governmental or private. Finally, this study sought to examine factors that bridge the gap.

### Significance of the Study

Given the importance of linking theory and practice in building up the skills of nursing students and in preparing them for success in their careers, this study attempts to highlight the factors that can lead to this path.

## Literature Review

The importance of theoretical preparation prior to clinical practice is illustrated by this quote from a nursing student in a qualitative study conducted in Iran: *"I entered the surgery word without passing my relevant theoretical credit and we had consequently wandered about the ward wasting time and missing out on opportunities for learning and gaining experience"* (Kermansaravi et al., 2015). Another student stated *"What I had learned was a waste of time because procedures were carried out differently in real situations and I consequently forgot the methods that I had been taught."* Bridging the gap between theoretical learning and clinical practice has many advantages including increased clinical competence, higher satisfaction, enhanced patient safety, and improved quality of nursing education (Hatlevik, 2012).

### Causes of the Theory-Practice Gap

Reasons for the persistence of this theory practice gap that have been mentioned in the literature (Kermansaravi et al., 2015), include: instructor related factors and organizational factors.

*Instructor related factors:* the practical clinical instructors or preceptors may be very well versed, experienced and skilled in their work but lack pedagogical skills and knowledge of educational methods and theories.

*Organizational factors*: these are factors related to policies and strategies of the clinical wards and the university. These include: inadequate coordination between the theoretical lectures and the practical sessions, a long time lag between theoretical lectures and practical apprenticeship prevents students, and

too many students in the ward preventing individualized feedback.

**Closing the Theory-Practice Gap**

Several factors and models have been proposed to help in bridging the gap between nursing theory and practice. These include: reflection, building the skills of the clinical instructor, supporting the clinical environment with aids, high fidelity simulation, and the CCARE model.

*Reflection*

Reflection is defined as critical reevaluation of previous experiences, beliefs or actions (Hatlevik, 2012). Reflection in nursing education involves looking backwards at a nursing procedure that a student has performed while assessing what has been done in terms of quality and conformity with recommended guidelines. Reflection is recognized as an essential factor in linking theory and practice. Hatlevik analyzed data from 446 nursing students in Norway using structural equation models to examine the relationships between reflective skills and students' perception of coherence between theory and practice. Coherence in this study refers to students' perception of connection between theory and practice. Results showed that students with higher reflective skills were more likely to relate theoretical knowledge to practice than students with lower reflective skills. It was also found that both theoretical knowledge and practical skills are positively correlated with reflective skills. Good theoretical knowledge assisted in bridging the gap between theory and practice more so than practical knowledge (Hatlevik, 2012). The interesting finding of this research was that the effect of theoretical and practical model knowledge on coherence is mediated by reflective skills, Figure 1.

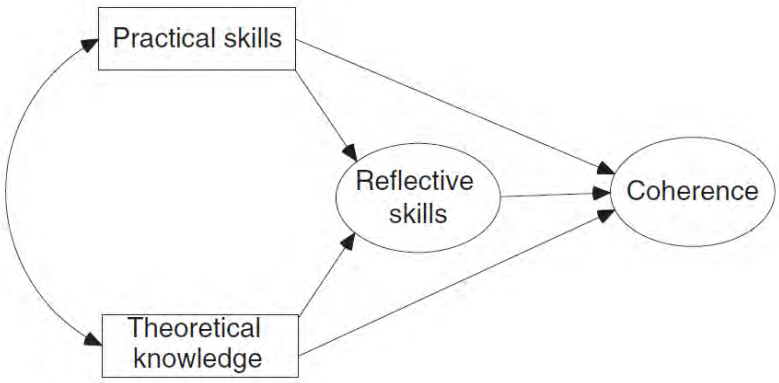


Figure 1. Reflection Mediates between Theory, Practice and Coherence. Source (Hatlevik, 2012)

The implications of this research is that nursing students need good theoretical grounding to be able to effectively relate their theoretical knowledge to practical procedures. Models that emphasize practice over theory are therefore not supported (Hatlevik, 2012). Numerous other studies confirm the importance of reflective skills in bridging the gap between theory and practice (Severinsson, 1998). Reflection facilitates the development of experience more rapidly. Another important finding of this study was that not only is theory needed to improve practice but also that practice is helpful to improve theoretical knowledge. This finding helps to explain reports

from other studies that showed a shift in students' perspective about theory from being described as boring initially to interesting and inspiring later on after students get their practical experiences (Jensen & Lahn, 2005). The clinical instructor has a crucial role in guiding students to reflect on their performance.

*The Clinical Instructor*

The clinical instructor plays a crucial role in building up students' clinical competence and in helping students relate their theoretical knowledge to practical procedures. The clinical instructor serves more than just an educator but also as a coach who models behavior for students. The role of the instructor as a guide for students' experiences rather than as a dictator of knowledge has been emphasized by constructivists theories of learning. Constructivism posits that learning develops by constructing mental structures or schemata that are generic concepts. Just as a scaffold assists in building constructions so does the clinical instructor assist the student in assimilating new knowledge and experiences on previous schemata or in reconstructing previous skills to perfection (Weeks et al., 2019b). The instructor in such a model has been described as "the midwife assisting in the birth of knowledge" (Weeks et al., 2019a). A successful clinical instructor will help the student to bring theoretical knowledge to birth through practice.

*The Clinical Environment*

A survey of 134 nursing students who were practicing at four governmental hospitals in the Gaza Strip, Palestine demonstrated that factors within the environment where students are practicing are significantly related to bridging the theory-practice gap. Those factors include: the availability of manuals for nursing procedures, the availability of needed equipment and supplies, the availability of simulation labs, the number of students at the clinical training site, and the policies at the training organization (Abusalah et al., 2018).

*High Fidelity Simulation*

Simulations provide students the opportunity to practice in an easily controlled and manipulated environment. It is safer to make errors while practicing on mannequins and students can practice many times until they master the procedure. This builds up students' self-confidence and makes them more prepared to enter the real clinical world. The transition between theory and practice has been described as a third or liminal space (Weeks et al., 2019a). Liminal is a word derived from Latin meaning threshold and indicates a transition between two spaces. Simulation facilitates a smoother transition by occupying the space between theory and practice (Weeks et al., 2019a). Students frequently report that practicing in simulation labs reduces their anxiety and prepares them to practice more confidently in the real-world setting (Ewertsson et al., 2017)

*The CCARE Model*

The CCARE model is a unique model to bridge the theory- practice gap proposed by Pamela Baxter at McMaster University (Baxter, 2007). The CCARE proposes five key behaviors (Communication, Collaboration,

Application, Reflection Evaluation) for linking theory to practice. The model Is unique because it emphasizes the central role of the preceptor, the clinical teacher and the student working together with the patient to help in linking and applying theoretical knowledge to practical applications. In this model, the preceptor is a clinic based instructor usually a staff nurse who role models and guides the student, the clinical teacher is the university-based instructor who supports both the student and the preceptor. This model is illustrated in Figure 2. According to this model, collaboration and coordination between the student, the clinical teacher, and the instructor or the preceptor are essential in linking theory to practice. Another feature of this model is the centrality of the patient in influencing his or her health care. Communication with the patient and among the actors of this model is important in providing quality healthcare. Feedback from the patient is an important indicator of the effectiveness of health care.

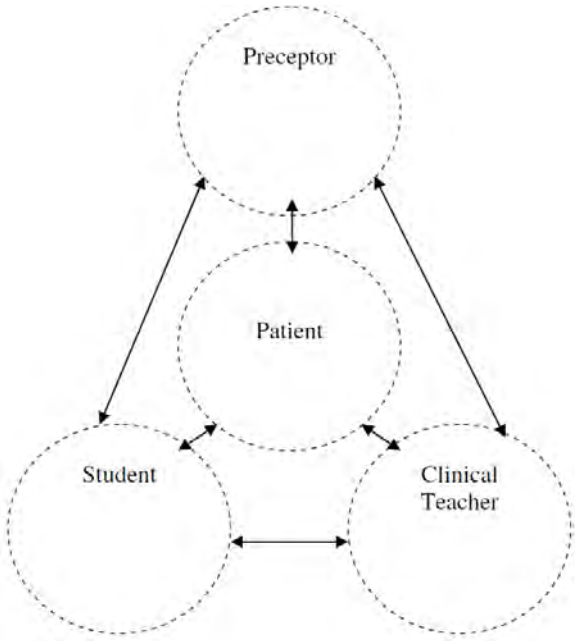


Figure 2. Collaboration and communication among the actors of the CCARE model: source: (Baxter, 2007)

In the CCARE model, the university-based clinical teacher should directly or indirectly communicate and coordinate with the student and the preceptor. Feedback to each actor in this model is considered important for their motivation and job satisfaction. The clinical teacher should convene initial and periodic meetings with the student and the precept for setting up goals, getting feedback, and sharing training policies and theories in a partnership that is void of hierarchy.

The significance of the preceptor staff nurse or the clinical instructor is highlighted by studies where students described the interactions with the clinical instructor as the most powerful even compared to their interactions with the patient and the university-based clinical teacher (Baxter, 2007). There is no doubt that the interactions between the student and the preceptor whether negative or positive have a huge impact on the student. A quote from a student in a qualitative study illustrates the significant role of the preceptor *"My preceptor can always put in a PVC, she does it just as it says in our literature, and she is also very kind to the patients. I hope I can be like her."* (Ewertsson et al., 2017)

The application component of the CCARE model highlights the need for the preceptor, the clinical teacher, and the student to apply theoretical principles and standard protocols in practical procedures. In evaluation; students are assessed at the level at which their performance matches clearly outlined standards and rubrics. Through evaluation students become aware of their own performance and the link between theory and practice. Providing feedback to the students on their performance is an essential skill that the clinical instructor should develop. Whether the feedback is positive or negative, it should be well articulated and constructive.

## Method

A cross-sectional study of 192 nursing students at the AAUP was conducted in the month of January 2021. An online survey was distributed to all second to fourth year nursing students who had at least one clinical practice experience. The survey consisted of questions developed by the authors to measure the theory-practice gap based on reviewing the literature. The questions were developed based on previous research in the field. Simple frequencies explored the main variables. Linear regression was used to examine relationship between the outcome variable and predictors while controlling for confounding variables and the p-value was set at 0.05 for statistical significance.

### Outcome Variable

Three questions were asked to assess students' experience with linking theory and practice.

1. I do not find it difficult to link the theoretical material with practical train
2. I found that the practical experience confirmed my theoretical training
3. My practical training completed what I learned in the theoretical lectures

Answers to these questions ranged from (1) *strongly disagree* to (5) *strongly agree*. Answers to these three questions were summed up into a total ranging from 3 to 15. The lowest score of 3 represents strong disagreement with all three questions. The highest score of 15 represents strong agreement with all three questions. Higher scores, therefore, indicate better theory-practice linking experience by the student. The questions were reviewed by experts for relevance and clarity to ensure their validity. The Cronbach's Alpha internal consist measure was 0.82. A Cronbach's Alpha range between 0.80 and 0.89 is considered an indicator of good reliability (Arof et al., 2018).

### Independent Variables

These included students' background variables: sex (*male* and *female*), school year (*second, third, fourth*), GPA (*3 or less* vs. *above 3*). Hospital characteristics include commitment of hospital to linking practical experience to theory which was assessed with question of: How committed is the hospital to apply theory? (*none, somewhat, completely*), and type of hospital where training took place was specified in two categories of government and private hospitals.

Characteristics of the practical trainer were assessed with four questions:

1. The practical trainer connected the nursing method with the protocol
2. The practical trainer gave feedback on my performance
3. My relationship with the practical trainer was marked by Mutual Respect
4. I communicated well with the practical trainer

Answers to these questions were either yes (2) or no (1).

The importance of university-level factors in linking theory with practice were assessed with the questions: 1) how important is the university teacher in linking theory with practice? And 2) How important is the simulation training in linking theory with practice? Answers to these questions ranged on a scale from (1) *not important* to (4) *very important*.

## Results

As shown in Table 1, of the 192 students who completed the survey, approximately 79.2% of the students were females and 20.8% were males. About 44.3% of students were in their 4th year of school, 35.0% in their second school year, and 20.8% in their third school year. Almost 50.5% of the students had a GPA above three while 49.5% of students had a GPA of 3 or less. Most students (79.2%) practiced in governmental hospitals while 20.8% practiced in private or non-governmental hospitals. Almost 69.3% of students were from Palestine 48 regions, 30.7% from the West Bank.

Table 1. Background Characteristics of Nursing Students in the Sample, N = 192

| Variable | | Frequency | Percent |
|---|---|---|---|
| **Gender** | | | |
| | Male | 40 | 20.8 |
| | Female | 152 | 79.2 |
| **Residence** | | | |
| | West Bank | 59 | 30.7 |
| | Palestine 48 or Jerusalem | 133 | 69.3 |
| **School year** | | | |
| | Second | 64 | 35.0 |
| | Third | 38 | 20.8 |
| | Fourth | 81 | 44.3 |
| **GPA** | | | |
| | Equal or less than 3 | 95 | 49.5 |
| | Above 3 | 97 | 50.5 |
| **Hospital type** | | | |
| | Government | 152 | 79.2 |
| | Private | 40 | 20.8 |

Table 2. Results from the Multivariate Linear Regression of Students' Abilities to Link Theory and Practice on a Scale (3 – 15) with background variables, N = 192

| Variable | | Coefficient | P value |
|---|---|---|---|
| Sex | | | |
| | Female | *Ref* | |
| | Male | 0.52 | 0.168 |
| School year | | | |
| | Second | *Ref* | |
| | Third | -0.26 | 0.524 |
| | Fourth | -0.48 | 0.180 |
| GPA | | | |
| | 3 or below | *Ref* | |
| | Above 3 | 0.38 | 0.357 |
| Hospital type | | | |
| | Private | *Ref* | |
| | Government | *-0.07* | 0.846 |
| How committed is the hospital to apply theory? | | | |
| | None | *Ref* | |
| | Somewhat | 0.80 | 0.052 |
| | Completely | 1.05 | **0.038** |
| The practical trainer connected the nursing method with the protocol | | 1.53 | **0.000** |
| The practical trainer gave feedback on my performance | | 0.12 | 0.794 |
| My relationship with the practical trainer was marked by mutual respect | | 0.82 | 0.122 |
| I communicated well with the practical trainer | | 0.50 | 0.238 |
| How important is the university instructor in linking theory and practice? | | 0.07 | 0.556 |
| How important is simulation in linking theory and practice? | | 0.28 | **0.036** |

Table 2 shows the results of the multivariate regression between students' theory-practice linking abilities and the study variables. The table shows that students' characteristics (sex, school year, and GPA) are not associated with the outcome. Of the hospital characteristics, the type of hospital (government or private) was not associated with the outcome but the hospital's commitment to linking practice with theory was significantly related to the outcome. Students who went to hospitals that were completely committed to linking practice to theory were about one point higher on their abilities to bridge the theory-practice link than students who went to hospitals that were not committed ($B = 1.05$, $p = 0.038$).

The characteristics of the practical trainer that was most important in raising students' theory-practice links was his or her attempts to explain to the students the theoretical protocols of the nursing procedures ($B = 1.53$, $p = 0.000$). Giving feedback on the practical procedure was not associated with the outcome. Respect and good communication with the practical instructor were not associated with the outcome.

At the university, students learn mainly from the university teacher and simulation scenarios. Those two university-level variables were assessed by asking students to indicate their importance for their ability to link theory with practice. The university teacher was not found to be important in fostering the theory practice link. The simulation training, however, was significantly related to students' abilities to link practice with theory ($B$ = 0.28, $p$ = 0.036).

## Discussion

This study aimed at examining the factors leading to better students' experiences in linking theory with practice. Results did not show significant students' characteristics related to the outcome. The most important factor associated with improving students' abilities in linking theory and practice was the practical trainers' efforts to connect the practical procedures with the theoretical protocols. Simply giving feedback to the students on their performance was not enough to raise their abilities to make this connection. This implies that the practical instructors in hospitals should be informed that simply giving feedback on students' skills carrying out the nursing procedures is not enough. The practical instructors should also explain the theoretical background of why the procedure is done in this way. This will deepen students' understanding of the nursing procedure making them more proficient in solving problems and providing a better quality service to the patient.

The crucial role of the clinical instructor revealed in this study is consistent with previous research (Akram et al., 2018; Bradbury-Jones et al., 2010; Hussein & Osuji, 2017). In addition to describing to the students what is the procedure, how to perform it, when and where it should be performed, the clinical instructor should also go deeper by explaining why the procedure is performed, why is it performed in this way, and expected consequences and potential complications of the procedure. This way, the instructor imparts meaning and understanding rather than automatic implementation of protocols. To effectively bridge the practice-theory gap, therefore, the clinical instructor should be updated with the theoretical knowledge and recent developments in the field (Hussein & Osuji, 2017).

Saifan et al., (2021). Examined the obstacles clinical instructors face impeding their abilities to connect the practical procedures to theories for student. These include limited time available for students, instructors not familiar with what the students' curriculum, and no communication between the clinical instructor and the university. Solutions include increasing communication between the practical instructor and the university academics of having the same university educator who taught the theory also be the clinical instructor, and having clear guidelines for the clinical instructor on how to train the students.

This study highlighted the importance of simulation exercises in reducing the theory-practice gap. This is consistent with previous research showing that simulation helps link practical procedures with theoretical knowledge (Wall et al., 2014; Saifan et al., 2021; Brown, 2019). It is assumed that the control instructors have over the simulation scenarios gives them more time to link practice to theory, to recall previous knowledge, and to reflect on their experience (Brown, 2019). To be effective, however, the simulation scenarios should include: team communication, time management, and prioritization skills. Simulation is also more beneficial when

introduced early in the semester, conducted frequently (twice or more a week), and practiced with medium- to high fidelity technology (Brown, 2019). The importance of the simulation instructor was also emphasized in previous research.

At the hospital level, the hospital commitment to linking the practical experiences to theory was significantly related to improving students' experiences. Hospitals that have a teaching philosophy in their policy can therefore provide more effective teaching experiences to the students. This finding underscores the importance of informing hospitals at the managerial level of the importance of them having a theory-practice commitment statements in their strategic plans.

At the university level, the university instructors were not found to have a major role in bridging the theory-practice gap but the simulation training was found to be important. This makes sense because the university instructor is mainly teaching students the theoretical part without access to resource available in the hospitals. The simulation labs, however, have a greater role in helping students understand the theoretical background of what they are doing. This implies that the university should explain to the simulation instructors the importance of linking the theoretical knowledge to the practical scenarios. This could be done through designing orientation workshops and training for the simulation instructors.

This study was cross-sectional which limits inferences of causality but the findings indicate the need for further research to corroborate the findings. The survey was also based on students' perceptions. Future research should investigate objective measures of theory practice links.

## Conclusion

The clinical instructor plays a vital role in nursing students' clinical and professional development. Universities should in invest more in the clinical practice of nursing students through policies and activities to increase communications with the clinical instructors, evaluating their performance, and setting of guidelines to improve the practical training of the students.

Upon results of study research, recommendations were conducted for many sectors. Practical instructors should explain theoretical background for nursing students because simply giving feedback to students on their performance alone is not enough. So, they should explain of why procedure is done in this way, what, when and how of a procedure should be done, theory behind procedure to impart meaning and understanding of why, consequences, and potential complications of procedure. Clinical instructor should be updated with theoretical knowledge and recent developments in field, increase communication between practical instructor and university academic teacher, and should be provided with available of clear guidelines on how to train nursing students.

Simulations as known helped in bridging theory-practice gap where instructors have control over simulation scenarios and gives nursing students more time to link practice to theory, to recall previous knowledge, and to reflect on their experience. Familiar curriculum should be available. Also conducting an orientation workshop to

simulation instructors to explain for them importance of linking theoretical knowledge to practical scenarios. Hospitals should have a written teaching policy regarding training of nursing students to help them link practice to theory, and have committed statement in their strategic plans including teaching philosophy regarding training of nursing students. University policies should include well and more communication techniques with clinical instructor to follow progress, get feedback, and coordinate theory with practice.

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