

# Clinical teaching models for nursing practice: a review of literature

Modelli clinici di insegnamento per la pratica infermieristica:  
una revisione della letteratura

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## ABSTRACT

**Introduction:** Clinical placements provide opportunities for student nurses to learn experientially, thanks to clinical-practical teaching models. For this purpose this review wanted to better investigate the latest methods developed in nursing education to ameliorate the theory practice model in nursing education teaching model.

**Methods:** The review of the literature was performed through a search of nursing specific data bases, including Cinahl, Capsur, Ovid, Cockrane Library, PubMed from January 2010 to September 2012. It included key words, such as: Clinical Model; Nursing Education Model; Nursing Practical Teaching Model; Theory-Practice Model.

**Results:** A total of 8 articles were found. Of these, only 4 articles were considered for this review because they better analyzed one clinical teaching model in nursing practice. Each article was structured analyzed, by considering the "PICOS" method, with reference to participants, interventions, comparisons, outcomes, and study design.

**Discussion:** Four innovative clinical teaching models for nursing practice were considered: the first one was the Problem-Based Learning method in nursing education; the second one was the Self-Regulated Learning strategy; the third one was the developing nursing students' reflective skills associated as a key component in the perceived coherence between theory and practice; the fourth one was the computer-based clinical simulation.

**Conclusion:** Each work performed an innovative clinical teaching model for nursing student. Some limitations were highlight, but all the literature revised emphasized the evaluation and feedback from students and the perceptions of their clinical activities is essential.

**Parole chiave:** Clinical Model; Nursing Education Model; Nursing Practical Teaching Model; Theory-Practice Model.

## RIASSUNTO

**Introduzione:** Il posizionamento degli studenti infermieri in ambito clinico offre molte opportunità di miglioramento, anche grazie ai modelli di insegnamento clinico. A tal fine, questo studio ha voluto indagare approfonditamente i più recenti metodi sviluppati per l'insegnamento clinico, con l'obiettivo di migliorare il modello di formazione infermieristica e la relazione pratica-teoria.

**Metodi:** E' stata effettuata attraverso una ricerca della letteratura su banche dati specifiche, tra cui Cinahl, Capsur, Ovid, Cockrane Library e PubMed dal gennaio 2010 al settembre 2012 che includeva parole chiave, quali: Modello clinico; Formazione Infermieristica, Modello; Infermieristica, insegnamento pratico; Modello; modello Teoria-Pratica.

**Risultati:** Sono stati reperiti 8 articoli. Di questi, solo 4 articoli sono stati presi in considerazione per questa revisione perché meglio analizzano un modello di insegnamento clinico utile per pratica infermieristica. Ogni articolo è stato strutturato e analizzato, utilizzando il metodo "PICOS", con riferimento ai partecipanti, interventi, confronti, risultati e disegno dello studio.

**Discussione:** Sono stati considerati quattro modelli di insegnamento clinici innovativi: il primo è il metodo Problem-Based in formazione infermieristica; il secondo è la strategia di apprendimento auto-regolato; il terzo è modello delle capacità riflessive, ancora in via di sviluppo come una componente chiave nella coerenza percepita tra teoria e pratica; il quarto modello è quello della simulazione clinica computerizzata.

**Conclusione:** Ogni lavoro presenta un innovativo modello di didattica clinico per gli studenti infermieri. Alcuni limiti sono stati evidenziati, ma tutta la letteratura sottolinea come la valutazione, il feedback da parte degli studenti e le percezioni relative alle attività cliniche siano una componente essenziale della formazione.

**Parole Chiave:** modello clinico; modello della formazione infermieristica, modello teoria-pratica.

## INTRODUZIONE

The clinical teaching models for nursing practice among undergraduate nursing students had long been the focus of debate concern and innovation. On the other hand students wanted oppor-

tunities to utilize the clinical teacher's skills and knowledge. The clinical environment was a motivating context of nursing practice for undergraduate students. Combining the learning of new information and the practicing of skills in reality situations assisted students to maintain an eagerness to learn that was central to the development of skill acquisition. Teaching effectiveness in nursing practice had long been of interest to researches.

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Two variables distinguished clinical instruction in nursing from other types of formal teaching experiences. First, teaching was usually incidental to the main purpose of the clinical setting - the care of patients. Faculty had little control over the clinical setting and the experiences to which their students were exposed. They might always be prepared to adapt the teaching plan to unexpected and unpredictable events. Second, faculty might juggle two equally important, but frequently competing goals - to prepare students for the role of professional nurse and to maintain the safety and well-being of the patient. This dual focus required special and distinct teaching skills, that were not innate but were developed over time and with experience (Allison & Hirt 2004). The literature showed evidence of a number of models of clinical teaching for nursing students. These models in use or in experimental phase were perceived by nursing students as potential effective. The aim of this review was to discuss the latest methods of nursing clinical teaching model, which were developed in nursing education to ameliorate the theory-practice model in nursing education teaching field.

From this review four innovative clinical teaching models for nursing practice were considered:

1. the Problem - Based Learning method in nursing education, (PBL);
2. the Self - Regulated Learning strategy, (SRL);
3. the developing nursing students' reflective skills associated as a key component in the perceived coherence between theory and practice;
4. the computer - based clinical simulation.

All these methods were analyzed by considering the research work and by analyzing them with reference to participants, interventions, comparisons, outcomes and study design.

## LITERATURE REVIEW

Recurrent themes in the literature include: how to teach, improved safety for patients, staff and students, the view that simulation enhances but could never completely replace real clinical experience. More contemporary discussions and empirical analyses were targeting what makes a nursing educator as a good clinical instructor. Various authors had taken different slants on analyzing the clinical teaching - learning experience. Cooke (1996) asked neophyte first-year nursing students what they perceived as challenging clinical situations before and after their second-semester clinical experience. The students identified several particularly stressful issues such as learning technical skills,

interpersonal communication, the types of patients, and emergency care situations. Faculty facilitators that overcame these challenges included supportive behavior, good preparation, quality instruction, and helpful evaluation. Not surprisingly, these specific behaviors were also frequently mentioned in the clinical teaching literature describing effective teaching. Dunn and Hansford (1997) examined undergraduate nursing students' perspectives of the clinical learning environment (CLE). Major factors affecting the CLE included student-staff relationships, nurse manager commitment, patient relationships, student satisfaction, hierarchy, and ritual. Nurse educators played a major role in promoting a positive CLE by improving these factors through such interventions as creating rapport between students and staff, by fostering mutual respect, and by honoring unit procedures. Other researchers have asked nursing faculty themselves about their preparation for the clinical educator role. Karuhije (1986) asked over 200 nurse educators about the adequacy of their graduate program in preparing them for clinical teaching responsibilities. The study results showed that the majority (70%) of the respondents felt their graduate program did not adequately prepare them to be effective clinical teachers. They desired more content on clinical teaching strategies and evaluation approaches to student performance. Nearly twelve years later, Herrmann (1997) found that nearly 70% of 692 nursing faculty felt that their MSN program did prepare them adequately for clinical teaching. As a group, most felt prepared to use a variety of clinical teaching strategies effectively. Whitis (1985) considered that simulation in nurse education was relatively safe and efficient. Du Boulay and Medway (1999) echoed this, including a number used multiprofessionally. They also suggested that clinical teaching experience helped to reduce anxiety in students while protecting patients and the structured learning context. There was an abundance of literature attempting to define competency and methods used to assess this in nursing education, both nationally and internationally (Whelan, 2006; Winters et al., 2003; King et al., 2003; Redfern et al., 2002; Boxer and Kluge, 2000). Clinical learning continued to be a fundamental element in nursing curricula with sourcing of appropriate experiences for students linked to national board registration requirements and workforce requirements. The clinical education component for undergraduate nursing students had over the last few years received much attention (Clare et al., 2003; Lambert & Glacken., 2005; Lindgren & Athlin, 2010). At the time of concep-

tion of an innovative teaching model, various approaches to clinical teaching models for nursing students in worldwide (Clare et al 2003; Liu et al 2006; Mannix et al 2006; Myrick et al 2010; Warner et al 2010; Wootton and Gonda 2004).

Clinical personnel in the nursing students' learning environment were seen as highly influential contributors to undergraduate nursing student learning. Therefore, ward managers especially had been identified as a pivotal group for the development and sustainability of this "teaching-environment" (Lambert and Glacken, 2006; Saarikoski and Leino-Kilpi, 2002). Furthermore, interpersonal relationships between key persons became critical for a positive learning environment with clinical teachers also viewed as contributing partners for effective teaching and learning (Watson, 2002).

## METHODS

The reviewed work was conducted according to

the "Prisma 2009 Checklist" protocol and by considering the "PICOS" as eligibility criteria, which included information for each article as regards: Participants, Interventions, Comparisons; Outcomes; Study design. The review of the literature was performed through a search of nursing specific data bases, including Cinahl, Capsur, Ovid, Chronocrane Library, PubMed from January 2010 to September 2012. It included key words, such as: Clinical Model; Nursing Education Model; Nursing Practical Teaching Model; Theory-Practice Model. It was considered only articles available in full-text and written in English language.

## RESULTS

Eight studies were found. Of these four were not included in the review as their considered other different issues in their purposes. The articles considered focused on innovative teaching

Reference article	Article included - reason	Article excluded - reason
Hassan, S (2010) Developing staff for the implementation of problem - based learning: Experiences from Botswana. South African Journal of Higher Education, 24 (1), 84 - 97.	It considers a philosophy teaching and learning model for nursing practice based on the Problem Based Learning model.	
Kuiper, R. & al (2010) Thinking Strategies of Baccalaureate Nursing Students Prompted by Self - Regulated Learning Strategies. Journal of Nursing Education, 49 (8), 429 - 436.	It considers the differences existed between the 60 hour practicum group and 120 hour practicum group in clinical nursing practice education and the use of metacognitive and self evaluation strategies versus the use of behavioral self monitoring strategies.	
Christoffersen, J. & al (2010) Integrating psychosocial skills into a medical surgical curriculum in a baccalaureate nursing program. Journal of Nursing Education, 49 (10), 573 - 577.		It considers teaching model for nursing practice only in psychiatric ward.
Ritchie, L. & al (2010) Nursing Students' and Clinical Instructors' Perceptions on the Implementation of a Best Practice Guideline. Journal of Nursing Education, 49 (4), 223 - 227.		It is more specific on implementation on nursing guidelines in smoking cessation than in teaching model in nursing practice.
Walters, L. & al (2011) Demonstrating the value of longitudinal integrated placements to general practice preceptors. Medical Education, 45, 455 - 463.		It is more specific in the medical teaching model than in the nursing teaching mode.
Hatlevik, I.K.R. (2011) The theory - practice relationship: reflective skills and theoretical knowledge as key factors in bridging the gap between theory and practice in initial nursing education. Journal of Advanced Nursing, 68 (4), 868 - 877.	It is a report of a correlation study of the relations of nursing students' acquired reflective skills, practical skills and theoretical knowledge on the perception of coherence between theory and practice.	
Rogers, L. (2011) Developing simulations in multi - user virtual environments to enhance healthcare education. British Journal of Educational Technology, 42 (4), 608 - 615.	It evaluates the computer - based clinical simulations as a powerful teaching and learning tool in the nursing practice.	
Yeh, M.Y. & al (2011) Cultural and hierarchical influences: ethical issues faced by Taiwanese nursing students. Medical Education, 44, 475 - 484.		It regards not teaching models, but only ethical considerations in teaching models.

Table 1

models for nursing practice. The table 1 showed the eligibility criteria which caused the inclusion and the exclusion of the articles found for this review. The references' article considered were:

1. Hassan, S (2010) Developing staff for the implementation of problem-based learning: Experiences from Botswana. *South African Journal of Higher Education*, 24 (1), 84 - 97;
2. Kuiper, R. & al (2010) Thinking Strategies of Baccalaureate Nursing Students Prompted by Self - Regulated Learning Strategies. *Journal of Nursing Education*, 49 (8), 429 - 436;
3. Hatlevik, I.K.R. (2011) The theory - practice relationship: reflective skills and theoretical knowledge as key factors in bridging the gap between theory and practice in initial nursing education. *Journal of Advanced Nursing*, 68 (4), 868 - 877;
4. Rogers, L. (2011) Developing simulations in multi - user virtual environments to enhance healthcare education. *British Journal of Educational Technology*, 42 (4), 608 - 615.

All these articles considered were analyzed by the PICOS method and their statement of questions were shown in the table 2.

In the first study, the PBL method was applied to 30 participants, that were assigned to five small groups, with six members in each group. In this case the author was the primary facilitator for the large group and each small group required to choose a secondary facilitator whose role was to manage group dynamics and ensure that the learning issues were addressed. Each group had a representative who was to give feedback to the large group during the plenary session. Learning was contextualized since information was presented to participants in the manner in which learners would experience in their future professional lives. At the start of the PBL process, participants were required to approach the clinical scenario. During the second stage of the PBL process participants were required to search for information on the learning issues in a self-directed manner. The third stage was a plenary session where participants gave feedback on the learning issues to the large group and discussion around pertinent and controversial issues ensued. The plenary exercise gave the opportunity for the integration of content in a vertical and horizontal manner since learning issues explored were applied to the clinical problem. Participants were encouraged to present feedback visually, through the use of the diagrams and flow charts, so that the rest of the group could follow the discussion easily. The author probed participants for a deeper understanding of concepts by asking

participants to explain their answers and their thinking, thus promoting deep learning. In this way participants were exposed to the questioning style that was normally adopted by the PBL process, and were encouraged to aspire towards that method of probing for further understanding before stepping in to clarify poorly understood concepts. Participants found that although the facilitator did not readily disseminate information or explain concepts, except when an impasse in the discussion was reached, they had learnt a lot about the clinical problem in question. The PBL process was concluded with a summary of the clinical problem and a discussion of the treatment plan for the patient.

In the second study, the SRL method aimed to determine whether there was a difference in the thinking strategies of nursing students during a 60-hour and a 120-hour senior practicum experience. The major premise for this study was that reflective journaling using self-regulated learning prompts, analyzed by retrospective verbal protocol technique, could capture the metacognitive thinking strategies used by students during clinical experiences. The results revealed some important considerations for faculty practicum experiences. The primary practical benefit was that students perceive the development of clinical competence despite research that shows there were no advantages compared with other structured clinical experiences. The self-report revealed a clear reference to increased self-efficacy in performance, which was similarly found in previous research in higher education; as self-efficacy perceptions strengthened, performance also improved. This finding supports metacognitive self-evaluation that may be promoted through Self Regulated Learning journaling to enhance capabilities, as self-efficacy was key to the belief that one was capable of performing behaviors. The metacognitive self-evaluation of self-efficacy was quantitatively higher in the 120-hour practicum group, suggesting a benefit for increased clinical hours.

In the third study, the theory-practice relationship model was conducted as a cross-sectional, correlation design and it was a secondary analysis of existing data. Data were derived from a database for the Studies of Recruitment and Qualification in the Professions in Norway. The participants were asked to identify to what extent they had acquired each item during their initial nursing education. Theoretical knowledge, practical skills, reflective skills and coherence were measured on a Likert-type scale, ranging from 1 (not at all) to 5 (to a large extent). For all the observed items repre-

Article's reference	Participants	Interventions	Comparisons	Outcomes	Study design
Hassan, S (2010) Developing staff for the implementation of problem - based learning: Experiences from Botswana. South African Journal of Higher Education, 24 (1), 84 - 97.	30 participants from the School of Nursing under the Faculty of Health Sciences.	The 30 participants were assigned to five small groups, with six members in each group. The author was the primary facilitator for the large group (30 participants) and each small group was required to choose a secondary facilitator whose role was to manage group dynamics and ensure that the learning issues were addressed. It was requested of each group to choose a representative who was to give feedback to the large group during the plenary session.	The Problem - Based - Learning described a training in Nursing Education; whereas the medical model was used to analyze clinical scenarios, generate and modify hypotheses and search for information as learners would.	Participants found that although the facilitator did not readily disseminate information or explain concepts, except when an impasse in the discussion was reached, they had learnt a lot about the clinical problem in question. The Problem - Based - Learning process was concluded with a summary of the clinical problem and a discussion of the treatment plan for the patient.	This article reports on a one - day staff development programme implemented to train and develop academics in Nursing Education in the principles and application of Problem - Based - Learning.
Kuiper, R. & al (2010) Thinking Strategies of Baccalaureate Nursing Students Prompted by Self - Regulated Learning Strategies. Journal of Nursing Education, 49 (8), 429 - 436.	26 baccalaureate student nurses from a group of 60 in two senior - level adult health courses volunteered to participate during two separate academic semesters.	The clinical practicum experiences were required of all students in the course, 60 hours for the first semester sampled and 120 hours for the second semester sampled, each lasting approximately 7 weeks. The Self - Regulated Learning model was used as a theoretical framework to design a model for analysis.	The purpose of the study was to determine whether there was a difference in the thinking strategies of nursing students during a 60 - hour and a 120 - hour senior practicum experience.	Students perceive the development of clinical competence despite research that shows there are no advantages compared with other structured clinical experiences. The self - report revealed a clear reference to increased self - efficacy in performance, which was similarly found in previous research in higher education; as self - efficacy perceptions strengthened, performance also improved. The higher number of comparative statements in the 120 hour group shows the value of practicum experiences to help the students compare and contrast situations, care plans, and performance.	The major premise of this study was that reflective journaling using self - regulated learning prompts, analyzed by retrospective verbal protocol technique, could capture the metacognitive thinking strategies used by students during clinical experiences.
Hatlevik, I.K.R. (2011) The theory - practice relationship: reflective skills and theoretical knowledge as key factors in bridging the gap between theory and practice in initial nursing education. Journal of Advanced Nursing, 68 (4), 868 - 877.	446 nursing students at the end of their third year of training (which corresponds to the end of their professional training) at two University in Norway participated in this study.	Data used were derived from a database for the Studies of Recruitment and Qualification in the Professions in Norway. Data were collected from pencil - and - paper questionnaires that had been filled out during a lesson in the spring of 2007.	Developing nursing students' reflective skills is widely viewed as a key component in helping them perceive coherence between theory and practice.	Students' acquired reflective skills directly affect their perceptions of coherence between the theoretical and practical components of their initial nursing education. The acquired reflective skills variable is affected by both the acquired practical skills and theoretical knowledge variables and act as a mediator between these variables on the one hand and the coherence variable on the other.	This study has a cross - sectional, correlation design and is a secondary analysis of existing data.
Rogers, L. (2011) Developing simulations in multi - user virtual environments to enhance healthcare education. British Journal of Educational Technology, 42 (4), 608 - 615.	16 students were placed into groups based only on their year level and exposed to the simulation in separate locations to replicate the intended purpose of the simulation.	The research was conducted by placing groups of nursing students in separate locations and exposing them to a series of clinical simulation developed in Second Life. The simulation involved a series of problem - based scenarios, which incorporated concepts of technical skills, patient interaction, teamwork and situational awareness.	A common theme which emerged from this research was the students' ability to work in an artificial social structure where they could actively construct mental models of technical and interpersonal skills through experiencing human interaction in a computer - based simulated environment.	The focus of this paper is to highlight the ability to develop a simulation in Second Life that can assist, and even enhance, teamwork and collaborative problem solving in regard to simulated learning activities. A major theme that emerged from the interviews was the positive attitudes the students had towards working as a team in Second Life.	The grounded theory method was used for this research, not only for testing the hypotheses, but also for generating hypotheses.

Table 2.

senting both professional competence and coherence between theory and practice, the mean values were at the upper end of the scale. On average, the students stated that they acquired theoretical knowledge, practical skills and reflective skills during their initial nurses' training and experienced coherence between theoretical and practical components of their education. The results indicated that the reflective variable directly affects the coherence variable and acted as a mediator between both the practical skills and theoretical knowledge variables on the one hand and the coherence variable on the other. Although, the inadequacy of the psychometric properties represented a major limitation of this study. The items used in this study were not part of an already well-established measurement instrument and students' learning outcomes were measured based only on their self-reported perceptions of acquired knowledge and skills.

The latest article focused on the computer-based clinical simulations, which were considered a powerful teaching and learning tool because of their ability to expand healthcare students' clinical experience by providing practice-based learning. In 2008, a small project team developed a computer-based clinical simulation in a "Second Life". Second Life was a virtual world created in laboratory which enabled learners to interact with and manipulate information and representations of an environment and synchronously communicated with other people via a digital representation known as an avatar, regardless of their location. The unique characteristics of virtual worlds, such as Second Life, had been well documented, however little was known about the actual learning benefits it could provide to nursing students as a simulation platform.

## DISCUSSION

Nursing students on clinical environment practice were in a supplementary role. They significantly contributed to service needs of the facility (Chan 2002). Although, this issue resulted to be very difficult, in order to achieve the balance between students feeling like and being part of a clinical setting, while focusing on the specific learning needs of the students.

The qualitative reviewed data from the results focused on four different innovative clinical teaching models in nursing practice. All these methods had positive aspects in nursing education, both they had some limitations.

The PBL model offered a structured methodology in which teaching and learning could occur in a systematic manner. One could not simply expose academic to the theoretical concepts of PBL and then expected them to apply the methods. Academics needed rigorous training and development in the practice of PBL, which included: principles of PBL, the PBL implementation thanks to the exposure to the clinical problem, generation of hypotheses and identification of learning issues, self-study involving the research of learning issues and the plenary session in which a feedback, discussion and closure of the case study was necessary. Participants acknowledged that there were benefits to PBL, but anticipated that its implementation could involve a lot of preparation. While many were excited about PBL and were eager to attempt this approach, they lamented that implementation might be challenging when dealing with large numbers of learners and limited resources. Moreover, PBL tutors might be capable of learning and not just teaching. Therefore, in this workshop it was deemed important to provide opportunities for participants to engage in self-directed learning in order to better position them to inculcate this skill in their learners. There were also different styles of facilitation and a tutor could pose as a content expert or as a non-expert who focused more on the PBL process. In conclusion this article gave an account of how academics in the School of Nursing at the University of Botswana were trained and developed in the implementation of PBL. This was a first good starting point for the application of PBL, further strategies needed to be in place for their continuous development.

The SRL model was used as a theoretical framework to design the journaling prompts and a model for analysis. The model was a synthesis of the academic research that supports the conceptual relationships of metacognitive self-evaluation, behavioral self-monitoring, and environmental structuring for educational settings. The results obtained in this study coincided with previous research revealing that self-confidence improved professional identity and greater independence. The significant quantitative differences in the assertional phase analysis revealed greater critical analysis of current situations and futuristic reasoning for the 120-hour practicum experience. As students had more independent practice in the clinical arena, they looked forward to patient care situations in the future. The 120-hour practicum group revealed more frequent use of meta-

cognitive self-evaluation strategies, which was a significant finding that although self-observation and self-monitoring were important and a desired habit to develop in nursing students, greater practice hours might promote self-regulation with higher-level thinking, leading to greater levels of competence, self-direction, and self-efficacy. The increase to 120-hours would provide more frequent exposure to activities of the workplace, and would reinforce, extend, and sustain improvements to self-efficacy, professional identity and overall performance. The greatest limitation to the study was the small sample size and selection from a singular geographical area. Another primary problem with practicum experiences was the inability to control for preceptor qualifications. The assumption was that the precepted environment was congruent with the learning styles of nursing students and promoted effective learning and transfer of knowledge. The conclusions of the research revealed that there was merit to assessing clinical practicum experiences with reflective journaling. The data were rich with self-perceptions and exposed variables that might not be considered with surveys or questionnaires. Moreover, there was a practical value to promoting self-regulated learning skills to develop self-efficacy, self-confidence, and perceived improvements in clinical performance.

The theory-practice relationship model represented a correlation study of the relations of nursing students' acquired reflective skills, practical skills, theoretical knowledge on their perception of coherence between practice and theory. The concepts of theoretical knowledge and practical skills were each measured with only one item; therefore, measurement error could not be ruled out. The findings indicated that reflective skills and theoretical knowledge were key factors in recognizing coherence between the theoretical and practical components of initial nursing education and that the reflective skills variable was closely connected to both the theoretical knowledge and practical skills variables. The binding role of theoretical knowledge and reflection as a way of bridging the gap between theory and practice was emphasized in this study. The results indicated that helping students develop reflective skills and strengthening the theoretical parts of the nursing education programme might be beneficial in promoting coherence between theory in initial nursing education.

Finally, the developing simulations in multi-user virtual environments model included a compilation of a series of investigative interviews to

research the attitudes and experiences of a sample of nursing students enrolled in a Bachelor of Nursing Program, who were exposed to six simulated clinical scenarios created in Second Life. Many themes emerged from this study and the focus of this paper was to highlight the ability to develop a simulation in Second Life that could assist and enhance teamwork and collaborative problem solving in regard to simulated learning activities. A major theme that emerged from the interviews was the positive attitudes the students had towards working as a team in Second Life.

Overall this study indicated that virtual clinical simulations with Second Life were ideal settings for proactively engaging students in constructing knowledge which related to realistic problems and assisting in the development of problem-solving skills in a collaborative environment, without inflicting harm to patients. Results from this study suggested that the Critical Life simulation could create an artificial social structure where problem-based scenarios could be created, allowing students to actively co-construct mental models of technical and interpersonal skills through experiencing human interaction in problematic environments. Although the simulation did not teach the students motor skills.

## CONCLUSION

More relevant in the literature was the teaching model for nursing practice. Several models had been illustrated in the recent and past international scientific literature and, most of them were very innovative. Since the teaching model depended also to the nursing curricula formulated by each University. Moreover teaching model was correlated also with the economic environment considered.

The clinical teaching models considered in this review were more innovative and original. They could be a starting point to better integrate and ameliorate the models, by considering also the important gap that could be more coherent between theory and practice.

Maybe in the future these clinical teaching models described above for nursing practice could be assembled and integrated to create a unique and complete model, which will consider the simulation in model, the application of the virtual environment in the clinical experienced life integrated by the theoretical knowledge, by considering the problem based learning theory.

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