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Perspective

A Pedagogical Model for Teaching and learning in Nursing

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Abstract

At the Basic Health Care College of Fredericia - Vejle - and Horsens in Denmark we offer health care programs on different levels. Apart from being a College we are also together with two other Basic Health Care Colleges, SOSU Nord and SOSU Fyn - a Center for Welfare Technology appointed by the Ministry of Education in Denmark. Being a Center for Welfare technology means that we are researching, developing and disseminating knowledge about:

1. Welfare Technology aiming at facilitating daily living for patients whether they are in their own homes, in nursing facilities or in hospitals.

2. Teaching and learning technology, which means including modern educational technology in our programs and classes.

3. Simulation. Simulation is a method with three stages, briefing, scenario and debriefing, where we aim at creating a care situation that is as close to real patient situations as possible. We do this in order to:

• Give students a better basis for real practice situations.

• Train hands on in order to develop routine.

• Establish connection between knowing that, knowing why and knowing how.

• Secure patient safety.

• Secure student engagement.

At our college and in the knowledge center we conduct simulation in a way where we integrate modern welfare technology aiming at facilitating life for patients, modern educational technology - in our simulation scenarios. This means that we have scenarios where welfare technology incurs. It could be at care situation where different assistive devices are used in the care situation. We want students to carry out credible and realistic care situations so that they get experience in handling the welfare technology they meet in real practice. That is enhanced by working with scenarios that include welfare technological solutions. In briefing we use educational technology including internet access where the students can search for further information, they need in order to perform the scenario. Students can enlarge their theoretical background on symptoms, care and treatment to be well prepared for conducting care and therapy, and be prepared also to offer reasons for their care and actions. We also include technology in debriefing as the whole scenario is filmed. Filming makes it possible to maintain dialogue on what actually happened in the scenario.

Thereto we want to engage students in their own learning process. Engagement is facilitated by technology and simulation. We want to teach in ways that allow for different learning styles. Simulation as a method including technology provides this. The Basic Health Care College of Fredericia, Vejle and Horsens has the following MISSION: "To qualify professionals, who on continual basis develop their professionalism proportional to assignments and challenges in present and future practice." And we have the following VISION: "To be a professional and development-oriented organization, known for an

attractive and vivid learning environment plus high pedagogical-didactical standards." Having a mutual accepted pedagogical framework is a way of meeting our mission and fulfilling the vision.

- On an organizational level, where standards are discussed and determined.

- On departmental level where standards are implemented.

- On teacher and classroom level where standards are in function and evaluated in connection with students 'outcomes.

- In collaboration with clinical partners.

At our college as well as in Center for Welfare Technology of Western Denmark, we will research and develop knowledge on how technology and simulation can facilitate education and training of health care professionals, who are able to face challenges in health care now and in the future in order to continuously develop their own practice.

Introduction

A Pedagogical Model – Students Meaningful Involvement in Health Care Education based on a Mutual Understanding of Challenges among Faculty Members and Development of Engaging Methods. Presentation of a mutual teaching and learning approach, based on at Pedagogical Model at the Basic Health Care College of Fredericia-Vejle-Horsens in Denmark (Figure 1). In Denmark we are facing challenges with meeting the expectations of the young generation in Health Care Education. These challenges may be related to expectations of a variety in teaching methods and personal learning activities - versus or in combination with the expectations of the employers regarding learning outcomes of both knowledge, skills, attitude - and expectations of ability to find new solutions to known challenges as well as new solutions to new challenges. Thereto the nursing programs are outcome based, and the outcomes are described in a complex and taxonomical high level relative to the length of the programs. Thus, we are facing complex and mixed expectations and challenges, leaving the lecturers with a complex assignment that they may find troublesome facing individually.

At our school - The Basic Health Care College of Fredericia, Vejle and Horsens - we therefore have implemented a mutual framework for implementation of an effective pedagogy. A model called the Pedagogical Model. The model is accompanied by a written description of our mutual pedagogical, didactical platform/framework.

Figure 1: Presentation of a mutual teaching and learning approach, based on at Pedagogical Model at the Basic Health Care College of Fredericia-Vejle-Horsens in Denmark.

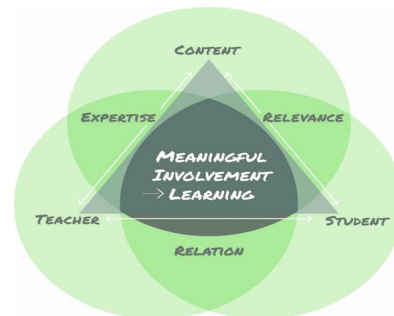## The Pedagogical Model (Figure 2)

Figure 2: Pedagogical Model [1].

I developed the pedagogical model on basis of a very much used concept in European Pedagogy, namely the pedagogical triangle, which states that learning in a professional context is an outcome based on some sort of relation between a teacher, a student and the content. However, as students change and the demands for at continuous development of professional teaching increase, I felt the need to clarify, develop and explain the areas that lie between the teacher and the content, between the student and the content and between the teacher and the student - on new preconditions. Also, by emphasizing the areas between somebody and something, I turn the triangle relational, meaning that also the perception and the quality of the relation mean something for engagement and ultimately learning.

Thus, I end up with three new areas explaining characteristics of the connection/relation between teacher and contents, what constitutes and encourage the field between student and contents and lastly how the relation between teacher and student in a professional relation can be built - in nursing education. These three areas I have named Expertise, Relevance and Relation. And I do not only describe that learning is the outcome of all the efforts regarding expertise, relevance and relation, but learning is based on the concept, that in order to learn at all you need to be engaged in something meaningful and in a meaningful way. Therefore, the center text describes meaningful involvement as a basis for learning. By that, I am also emphasizing that in order to secure the meaningful involvement you need expertise, relevance and relation as well as a teacher, a student and the contents.

Expertise

From the Figure 2, the area between the teacher and the professional content, I describe with the term EXPERTISE. I have developed this term from the concept og professionalism from my great role model (I have actually met him and written book chapters with him) [2]. Expertise Covers Professional knowledge, Professional didactical knowledge, Common didactical knowledge and Pedagogical knowledge

Professional Knowledge: Professional knowledge means that you know your profession. You know your subject, topic or if you teach or instruct practical aspects of a profession - your trade. In short - you need to know what you´re talking about.

Professional Didactical Knowledge: Professional didactical knowledge means that you know how to teach others your profession or your trade. Professional didactics is about:

- ✓ Goals, objectives
- ✓ Contents
- ✓ Methods
- ✓ Evaluation

Common Didactical Knowledge: Common didactical knowledge is about understanding how your topic or subject is related to other subjects that is part of the program the student is enrolled in. In what order should topics come? Which elements are necessary for the progression in learning and in what order? What is the relevance for the student in your subject?

Pedagogical Knowledge: Pedagogical knowledge is about knowing - in addition to the afore mentioned knowledge areas - about the students. What do they already know? What are their learning strategies, their motivation etc - and about making sense of your professional, your professional-didactical and common didactical knowledge while you observe not just any single student but groups of students?

Relevance

Back to the Figure 2, As many professional programs consist of many different subjects and both theory and practice, relevance is of the utmost significance. And this is relevance from the perspective of the student. In my pedagogical model, I highlight objectives, understanding of objectives and attaining objectives as a way of securing relevance. The objectives should be realistic and possible to attain. In Denmark all educational programs in nursing education are objective oriented and sometimes described in a way that the students are not able to decode. Therefore, teacher and students need to talk about the purpose of working with a given topic and also why to work with it in the chosen way [2].

There should be high objective achievement and the students should realize it. This means that the way the teacher teaches and the way the students work with the contents should enforce goal achievement - and that the students either experience goal achievement or be told that they have reached the goal [2]. And last but not least: The behavior described in the objectives should be practiced in class. This means, that if the goal describes that the student is able to analyze a given text, analyzing texts should be practiced - or if the goal describes that the student be able to do personal hygiene with at patient - practicing personal hygiene should be on the agenda [2]. The better connection there is between objectives, contents and method the better chance for perceived relevance. Objectives are normally described within the cognitive, the psychometric domain = knowing that, knowing how and why plus having an attitude towards it. But alas - in modern days - you might rightly ask: "Are the professional objectives factually the only objectives we work with, or might there be a new agenda"?

21st Century Skills within Nursing Education

The OECD has supported the 21st Century Skills. I find the 4 C´s within these described skills extremely interesting for nursing education. The 4 C´s are: Creativity, Critical thinking, Collaboration and Communication. These skills are not new, but the expectation is that they will be more needed in the future due

to the way society is changing because of technology. Employers confirm to demand high professional standards, but they also want more. They want people who can adapt, see connections, innovate, communicate and work with others - and therefore we need to pay attention to these skills and include them in our professional programs and in order to create relevance between the contents and the students - also in our professional objectives and lastly also include them in the educational activities.

Is this inclusion new? No not necessarily. In Denmark we have always included also more personal valued characteristics like empathy, ability to listen, being able to give something your full attention etc. - in our assessment of good nursing practice and also in the progression of the student´s learning - but the question is whether the general education system is designed to promote skills like critical thinking, creativity, communication and collaboration? So, if they in future should appear openly in our professional objectives how should we teach them? (Table 1).

Should We?	Or Should We?
• Teach directly? • Teach projects not subjects? • Embrace multitasking? • Not teach knowledge but teach how to find knowledge?	• Teach indirectly and in the abstract? • Keep traditional subjects? • Focus on deep work? • You can´t teach students how to find and use knowledge unless they know something to begin with!

Table 1: Professional objectives how should we teach them?

Dilemmas

Daisy Christodoulou [3] who is head of Assessment at Ark Schools in the UK and who has researched the connection between 21st Century Skills and teaching concludes about the above described dilemmas, that you need to teach the 21st Century Skills directly, they will not have any implication for you learning when taught in the abstract. It is a good idea for several of the skills to work project not subject oriented - but again of course that will depend on the objectives - as objectives should be realistic and possible to attain. It is still important to focus on deep work. Even though we would want to teach nurses to multitask, it is a research result that multitasking while learning impairs performance. "We remember what we focus on". Technology may enhance deep learning but only if it helps focusing attention. Again, if objectives are described so they express what the student should reach, if the goal is understood by the student and if the activities in the classroom mirror the goal - it is possible to focus attention.

It is still important to focus on teaching knowledge. It takes knowledge to gain knowledge. One of the theoreticians I studied in my PhD, Niklas Luhmann [4] says: It takes complexity to overcome complexity, which means the more you know, the more possibilities you have to gain new knowledge, but also to process this knowledge and make it meaningful - so it is a fact that you can´t teach students to find and use knowledge unless they know something to begin with.

Furthermore, Daisy Christodoulou also gives the following statement: "Doing isn´t learning and performance isn´t learning" - there is no powerful learning effect. By doing and performing alone a behavior does not come into long-term memory. Therefore, it is beneficial to include the 21st Century Skills and teach them directly in education. If critical thinking in relation to the before mentioned goal about being able to do personal hygiene with at patient - practicing personal hygiene should be on the agenda as well as practicing critical thinking, which among a lot of possibilities could be about how to perform the task, what to observe while doing it, what to change if the situation demands it and these last goals should also be verbalized in the learning session - behavior described in the objectives should be practiced in class, there should be high objective achievement and the students should realize it. And what do 21st Century Skills mean in relation to the expertise that is essential in describing the field between teacher and content? Again, I shall refer to Daisy Christodoulou, who states that: "The practice of a profession is not the same as teaching to practice the profession" - hence my description of professional knowledge, professional didactical knowledge, common didactical knowledge and pedagogical knowledge.

Relation

Back to Figure 2, Over the years there has been different views upon the relation between teacher and student. In what we in DK refer to as "The black school" the relation was based on fear and fear induced respect, in the "Laissez-Faire" period it was based on the belief that the student knew best, and that the teacher should preferably as also Pink Floyd states it: "leave the kids alone". There has also been a long period where the relation was perceived as a relation between friends or relatives with for example a mother/father metaphor. In nursing education there may also be some teachers who tend to regard the student as a patient. I believe in none of these! Instead I, and again with reference to Erling Lars Dale [2], propose that the relation between teacher and student should be based on:

• Asymmetric competence.

• Communication, Care, Upbringing/Manners.

• Ethical guidelines; Interest in Validity, Presentational Knowledge, Fairmindedness, Drive.

Asymmetric Competence

Asymmetric competence means, that the teacher is and should be superior:

- Regarding the contents - he/she knows more.

- Regarding the methods - he/she knows more about how to learn.

- Regarding the objectives - he/she should support the students understanding of objectives, secure it is possible to work on attaining the goals and facilitate the students 'understanding of how and when they have reached the goal.

Communication, Care and Upbringing/Manners

Communication: Communication here means that the teacher should know how to present the content, how to stay on track, how to make meaning of contributions from the students, how to make the difficult content understandable for all students - and if necessary, CONCLUDE.

Care: Care - not in sense of caring for a patient, but caring for the contents and the student as a learner.

Upbringing/Manners: Upbringing/manners - meaning a focus on making the student ready to go to and to be in school, and telling him if his behavior is not acceptable - enhancing collaboration.

Ethical Guidelines

Interest in validity: Interest in validity [5] means that the teacher should have a genuine interest in the topic he/she is teaching, in a way so that he is a teacher in "The first person" (Figure 3). In Denmark we use the phrase that you burn for your subject - the students can and should expect that, and it helps create meaning for the student.

Presentational knowledge: Presentational knowledge is about not just methods, but also about dramaturgy. How to use yourself, your voice and your educational materials in teaching.

Fairmindedness: Fairmindedness - means that all students should have the same possibilities and rights in the classroom.

Drive: Drive - any teacher should be able to handle disappointments, disagreements and potential setbacks.

Figure 3: Interest in validity.

Meaningful Involvement and Learning

Back to the Figure 2, the contents, the teacher, the student and the expertise, the relevance and the relation should together secure the meaningful engagement or involvement that is fundamental for learning. Meaningful involvement is a way of insuring meaning. My concept of learning is that it is a process and a result based on energy to learn. This energy again is maintained and renewed by the students experiencing that they learn, which they know by reaching the objectives. It gives you energy to say: Now I know or now I can. The result of the learning process or learning in itself can be documented by the students' ability to:

- Communicate - which means being able to state or explain his or her knowledge on the respective taxonomical levels.

- To demonstrate - which means being able to do or practice again on the respective taxonomical levels

- To produce - which means to contribute to the contents of what is happening in the classroom. Producing can be about producing something material as in at written assignment, but in educational context it will often be about producing solutions new or known to problems experienced in class or in practice.

Working with meaning has a special significance in vocational education and training. In Denmark we have a dual system meaning that school based, and workplace or practice-based teaching/instructing are two different ways of structuring

educational programs (Figure 4). But the point is - they are of equal ranking. Though there over the years a lot of initiatives have been taken to develop new ways of organizing educational programs it is for DK a fact that dual programs such as nursing education in DK is divided in different "Learning Rooms" based on different logics and characteristics and with different possibilities for learning.
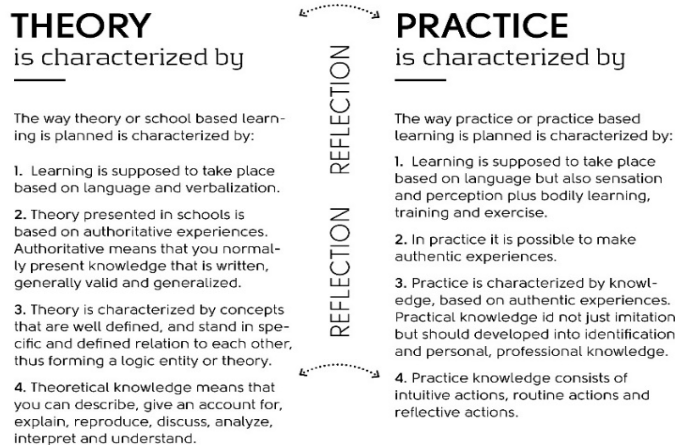

THEORY is characterized by

The way theory or school based learning is planned is characterized by:

1. Learning is supposed to take place based on language and verbalization.

2. Theory presented in schools is based on authoritative experiences. Authoritative means that you normally present knowledge that is written, generally valid and generalized.

3. Theory is characterized by concepts that are well defined, and stand in specific and defined relation to each other, thus forming a logic entity or theory.

4. Theoretical knowledge means that you can describe, give an account for, explain, reproduce, discuss, analyze, interpret and understand.

REFLECTION

REFLECTION

PRACTICE is characterized by

The way practice or practice based learning is planned is characterized by:

1. Learning is supposed to take place based on language but also sensation and perception plus bodily learning, training and exercise.

2. In practice it is possible to make authentic experiences.

3. Practice is characterized by knowledge, based on authentic experiences. Practical knowledge id not just imitation but should developed into identification and personal, professional knowledge.

4. Practice knowledge consists of intuitive actions, routine actions and reflective actions.

Figure 4: Two different ways of structuring educational programs [6].

Although different hybrid forms between the two "Learning Rooms" are possible it is still due to individual reflection that a connection between theoretical knowledge and practical proficiency will manifest itself. My point here is that a way of securing meaning is about showing the students what something is useful for, showing them how and what to do and why something is essential to know and learn. And we have a wonderful method especially designed for that, which is called SIMULATION.

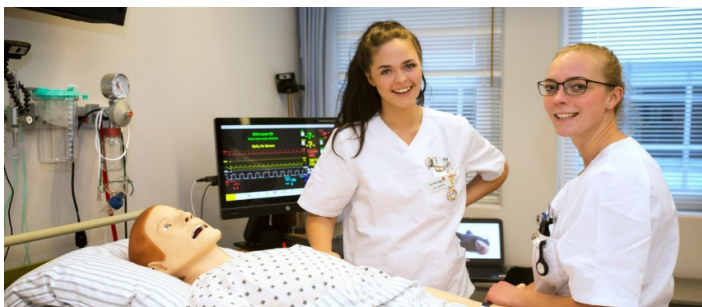## Simulation -Structure, Content and Method? (Figure 5)

Figure 5: Simulation -Structure, Content and Method? [1].

Simulation as A Structure

I have earlier stated that simulation is a method. But is that the only truth? Could one argue that simulation also is a structure, that means a way of constructing or structuring education? In that respect simulation is a different setting for teaching and learning than schoolrooms or clinical settings. By understanding simulation as a new structure or a new setting for learning you gain possibilities for learning based on:

- Fundamental basis in a professional "Real" nursing situation.

- Possibility for acquiring experience in order to manage a professional situation in future practice by training the first steps in professional excellence - and the first steps in becoming an attractive employee in modern health care.

- Possibility for acquiring experience also in the most complex patient situations.

- The teacher can plan and effect a learning situation and manage the environment in a way that enhances learning possibilities.

- Simulation allows for focus on sub-elements as well as an integral whole.

- You can repeat until a skill is learned.

Simulation understood as a structure is about offering conditions for learning in a well prepared, rooted and appropriate way. Simulation as a structure is a way of establishing a new "Learning Room".

This again means that the setting facilitated by simulation could be characterized by the following statements:

1. Learning happens as a result of both communication/language and practical training.

2. There is a possibility to reflect theoretical knowledge into practice - and to link theoretical knowledge to practical skills.

There Is a Possibility to Learn Via

- Forward looking reflection (briefing), reflection-in-action (scenario) and reflection-on-reflection-in -action (debriefing).

- Skills practice in sheltered environment followed by reflection-in action, reelection-on-reflection-in-action and general critical thinking.

- Meaningful engagement and prompt objective achievement.

- Meaningful engagement that enhances energy to learn.

- Knowledge that means that you may reflect and reason with theoretical knowledge bur also with what you experienced and learned in simulation.

Simulation as Content

Traditionally the contents cover the professional subject-matter and substance the students work with. Could simulation be considered a content?

In that case simulation would be a content that it is possible to keep stable and unchanging. In high tech simulation you can program the mannequin to have the same symptoms and react in the same way over and over. That again means that the student can repeat and train the same situation again and again - if needed. One could therefore argue that professional content presented and processed as simulation would be kind of an interactive content, that enhances engagement and thereby learning. The content can thus be tailored and personalized to every single student.

Simulation as A Method

The pedagogical phrase method traditionally means: Adequate procedure in order to reach a goal. Procedure covers both the activities the teacher plan for him-/herself and the activities the teacher plans for the students plus the principle education rests upon: Is there a movement from general to specific or the other way around: From specific to general. Thus, simulation can be argued to be a pedagogical method, that is beneficial in order to reach goals, where obtaining skills and reflection - i.e. forward looking reflection (briefing), reflection-in-action (scenario) and reflection-on-reflection-in-action (debriefing) - is the expected outcome. Simulation is a method that makes it possible to secure professional development and progression in skills, knowledge and attitude plus involving personality and character. I therefore prefer to understand simulation first and foremost as a method.

Conclusion: Pedagogy - Simulation - Learning and How to Develop Innovative Practice

With this headline I shall try to conclude how - in my opinion - the pedagogical model contributes to innovation in education. I shall do that by asking two questions:

1. What is innovation in teaching?

2. How does the presented framework support innovation in education?

What is Innovation in Teaching?

In my point of view innovation in teaching starts with the question: What is best for the learner or the learners? Innovative teaching practice is developed by continuously asking this question and reflect, revise and remix accordingly.

To reflect, revise and remix takes expertise and a mutual framework to have in mind - in order to go in the same direction, setting a stage that is well established and constant - so that teachers know the framework they reflect with and revise and remix within.

What is Best for Learner?

I strongly - as presented before believing in meaningful engagement. It takes engagement and mental or/and bodily activity to learn nursing. But I also strongly believe in differentiation. This means that I respect that what is best for one learner not necessarily is best for another. Thus, we differentiate. This can be done on:

Structure: Dividing the student group, change between working alone or in smaller or bigger groups. Let the students who actually did their homework before coming to class work together, and those who only prepared so-so work together. Differentiation can also be done on:

Contents: Allowing the students to work with different contents, more or less challenging texts, different and more challenging or complex patient situations etc. - but of course within the context defined by the objectives. However, in DK we are by law required to offer programs for talented students - as well as we by law are required to work for retention of all students. And finally, differentiation can be done on:

Method: Making sure that you let the students work with the contents in different ways. Maybe we could move from problem-based learning to challenge based learning? By that I mean giving the student a reason for learning. This could be done by asking a student what challenges he/she sees in order to reach a specific goal, what is your personal learning objective (i.e. what do you need to learn in order to reach the goal - and how can you work with the contents in order to obtain it?)

If Learning Is Not Only Performance or Communication - What Is It?

I believe that by a good teaching - in school based and practice-based settings - you can acquire, which means that you may be able to reproduce, perform and explain. You may also be able to convey this knowledge whether it be mental or bodily to other situations - but in collaboration with your teacher or fellow students you might collaborate and facilitate a reflective process that enhances learning - from an isolated incident, over experience to reflected knowledge that can be produced when needed - in any given situation. So innovation in teaching is about developing teaching, changing beliefs and thus changing teaching behavior - with learning as the superior purpose.

So: How Does the Presented Pedagogical Model Support Innovation in Education?

My experience is that having the model and a mutual framework facilitates all development.

1. In the classroom and in relation to the students - because you always know whether any given changes fall within or outside what we understand by good nursing education, not just because we have the model but also because we have the written description of our mutual pedagogical, didactical framework.

2. On an organizational level because descriptions of responsibility and competence for faculty are related to the framework and described in a development plan. These plans are formally discussed between head and faculty member every other year. Informally when needed.

3. Regarding our classrooms and general learning environment. Differentiation in structure, contents and method may require new settings.

    We do use new technology - in the classroom, interactive boards, technology driven devices that support different learning styles, visual, aural, kinesthetic, active or? We also use new technology to secure that our students actually produce, which means that they are actively contributing to what is happening in the social relationship that surrounds learning. We are big on simulation. We have a whole ward in the hospital where we do both low and high-tech simulation. And we have different classrooms, rooms for reflection and deep work in groups or individually. We are in the process of introducing holograms.

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