Encouraging Students to Learn Non-Core Subjects in Health Education

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Abstract: This paper presents an intervention in nursing education designed to enhance nursing students' motivation to participate and acquire transferable knowledge within nursing education. A specific part of the curriculum entitled; Organization, administration and management, is of low immediate interest of the students. The students generally regard this topic as irrelevant for their professional development as nurses. In order to motivate the students a range of different IT based pedagogical designs were implemented with the intent of scaffolding the students' learning.
The study, that this intervention is part of, was designed as a 2-year action research project. A variety of data-sources were utilized to document the process, including students' and teachers' experiences as expressed in interviews, observations of teaching and learning related behavior and data logging.
This paper focuses on how integrating an IT based design affects the students' learning processes. The research question was; how can students utilize the opportunities for learning in pedagogical designs that include; IT, video-clips, simulations, role playing and collaborative activities? To explore this we used a didactic model developed by University Colleges in Denmark: the study activity model. One of the main objectives for the study activity model is to look beyond traditional didactics and strengthen the awareness of the study activities that the students carry out themselves.
The learning opportunities provided by the pedagogical design in this intervention seemed to engage a smaller group of students while a large group of students were frustrated. Our analysis suggests that the students viewed the flexible learning environment and the IT based designs as optional rather than sequential stepping stones towards the learning objectives.
The aim of our pedagogical design was to include all students in reflective learning. In order to work with the content on a taxonomically appropriate level a substantial group of students needed more scaffolding and feedback. To respond to the heterogeneity of the student population in nursing education teacher presence and guidance is crucial. Our results suggest that the pedagogical design should support students at different levels to allow them to work and learn in such a way that the learning content can be put to use in a practice environment. The study also suggests that it takes more than one pass of a new pedagogical design to fully understand how to learn in a changed teaching environment.

Keywords: IT didactics, transfer, motivation, nursing education, taxonomy, feedback, employability

1. Introduction

What initiated our field of interest was an observed lack of motivation for the course Organization, administration and management which is part of the nursing curriculum.
The nursing program in Denmark is a three and one-half year bachelors program. The program is divided into 14 modules where the theoretical part links theory with clinical practice providing a dynamic balance between theory and clinical practice. The content in the 14 modules is based on nursing science, health sciences, natural sciences, human science, and social sciences. Graduates are entitled to call themselves Bachelor of Sciences in Nursing and after graduation the National Board of Health issues a registration as a nurse. The title "nurse" is protected (Council of Directors in Nursing Education in Denmark).
In their last study year the students have to follow a course with focus on organization and collaboration, including nursing management and organization theory (corresponding to 2 ECTS). It is a subordinate course in the main module, which focus on nursing, acute and critically ill patients/citizens experiences, reactions, conditions and actions in relation to acute critical illness, suffering and imminent death (corresponding to 15 ECTS). The main course topic is found exciting, interesting and motivating in itself, by the students because the subjects are part of nursing core and identity, and thereby useful in the clinical reality. Quite a different reality reveals itself when it comes to the subordinate course; Organization, administration and management. The main goal is to enlighten and broaden nursing students' view on nursing practice and also to increase the students' employability by achieving knowledge, understanding and competencies within this topic. To organize, plan, delegate and improve quality of the activities between patients and health

professionals are actual demands to nurses in the Danish healthcare system. Therefore, it is of major interest to engage and motivate nurse students within this area because of its significance to patient pathways through the health care system. These competences become important to ensure quality in services, to ensure patient safety and to ensure the overall efficiency in the health care system (Eldrup & T. Glasscock 2014). This study seeks to solve a pedagogical problem, students' lack of motivation and blurred understanding of relevance, but we encountered new problems whilst trying to solve the initial problem.

The intervention in this study investigates the powers of teacher produced educational videos as a part of blended learning involving; flipped learning elements, playing context, IT, f2f lectures, video and online assignments facilitated by the learning management system "itslearning". It also pinpoints general issues regarding intended and experienced feedback. The intervention shows that technology and pedagogical designs fight an unequal battle between sense of purpose and intrinsic motivation. The videos cater for convenience of information transportation and open for new possibilities in the pedagogical design, but it doesn't affect the core issue which is that the students don't assess the academic subject as relevant to their future profession. Many researchers do research on 'flipping the classroom' they do it for the same reasons; to engage the students (Schwartz 2014), to facilitate cooperation (McLaughlin, Roth et al. 2014), to change focus from transmission of information to the students learning process (Garrison, Vaughan 2008, Schwartz 2014).

This paper presents our research design and analytic framework. Then we present our analysis and findings applying relevant theory. In closing conclusion and perspectives will be presented.

2. Research design

The overall project is designed as an action research project focusing on didactic development to induce motivation and transfer referring to Lukassen, Pedersen et al. (2014). The primary focus was on solving a real problem of unmotivated students in the course Organization, administration and management. The choice of action research as an emancipatory methodological framework enabled us to study and evaluate the educational changes, while collaborating with the teachers (Nielsen, Nielsen 2010).

The topic of the course in this study is an important part of the nursing education curriculum; however the students seldom recognize its importance. The aim was to explore how different pedagogical designs influenced the student's participation, motivation and transfer. Our work process was divided into three phases:

1. In the first phase of the research process the multidisciplinary team defined expectations and divided the workload. Discussion and decisions about which technologies to use and in what extent the institutions LMS system was the underlying basis was conducted. Additionally decisions were made about using 'flipped learning' as a method.
2. The next phase was producing materials which would support collaborative learning such as; video, online tests, playing context, online assignments etc.
3. The final phase was performance and evaluation. During this phase methods within the qualitative and quantitative research paradigms were used; e.g. formative evaluations, research log, online document collection and analysis, log data and statistics, participant observation recordings etc. Additionally different research tools that were conducted in the process observed in relation to participation, involvement, motivation etc.

After the course we did two focus group interviews. Furthermore the involved teachers were asked to reflect on the pedagogical design and how they as teachers had worked with the students previously (Lukassen, Pedersen et al. 2014).

We identified the following analytical categories: how the students perceive teaching, learner's needs and how students are motivated – including whether all students benefitted from the pedagogical design. As a theoretical framework for dealing with that aspect we introduce Biggs and Tang's levels of teaching.

3. Analytic framework

3.1 Teacher typology and learner needs

The pedagogical design takes point of departure in the SOLO taxonomies and in Biggs typology of teachers (Biggs, Tang 2011). The typologies divide teachers into three levels:

1. Is concerned with what the students are; lazy, unprepared, good, creative etc. Teaching revolves around content and possibilities are limited because the teacher is fixating on what the students are.

2. Is concerned with what the students do in teaching; make videos, cooperate, appear active, participate etc. Teaching revolves around form and the possibilities are unlimited anything could be a learning resource.
3. Is concerned with how and what the student is learning; heutagogic study skills, feedback and content channels align etc. Teaching revolves around a synthesis of content, form and learning skills.

The study revealed that the students are used to teacher level 1 and that they generally recognize level 1 pedagogical designs as generic teaching. They also recognize level 2 pedagogical designs as teaching to some extent; however they regard level 1 as 'real' teaching and level 2 teaching as a nice variation. They don't think of level 3 pedagogical designs as teaching and they find it difficult to take on the new role as self-governing learner. The teacher presented a variety of feedback channels and supervision possibilities in the syllabus for the course, but the students didn't understand purpose of the supervision arrangements and the feedback channels as feedback or supervision, they requested classic corrective feedback. They didn't rely on their own assessment of their own learning outcome. This means that they properly are in the quantitative phase of learning (fig 1).

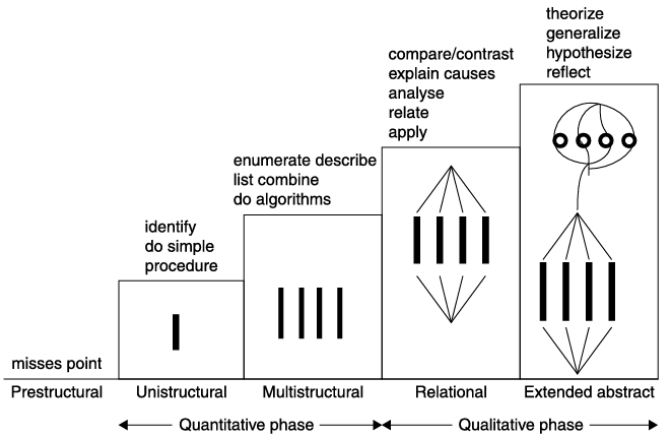

Figure 1: SOLO taxonomy (Biggs, Tang 2011)

The SOLO taxonomy (Biggs, Tang 2011) provide a framework for understanding why it is difficult to step out of the role of 'the governed pupil' and into the role of 'the self-governing student'. The pedagogical design has got to make it possible for the student to achieve the qualitative phase of learning in order for the student to actually be self-governing and the through time properly gain study skills to be self-governing in the quantitative phase as well.

The needs of the learner are at the core of level 3 teaching, thus making it important that the pedagogical design is open for individualization. Studies show that the tasks' element of authenticity is important for the students to feel that the tasks meet their needs (Parker, Maor et al. 2013). When the pedagogical design lacks the element of authenticity then the students seem to be struggling with the dichotomy of natural learner needs and socially constructed learner needs (Ayers 2010). Normally the curriculum and the syllabus in conjunction with the pedagogical design would appear to cater for relevant learner needs. The important elements in the learning process were provided by the teacher.

3.2 The Study Activity Model

In 2013 University Colleges Denmark introduced the Study Activity Model. A framework to "strengthen the dialogue with their students by creating a clearer image of what is offered in terms of learning, teaching, academic approach and activity under the new joint study activity model" (UC Denmark).

The model is divided into four categories, each describing how activities can be categorized in terms of initiation and participation by the teacher and the students (fig. 2).

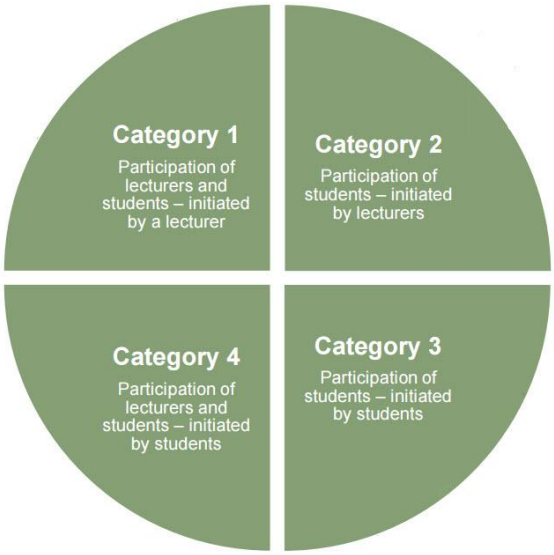

Figure 2: The Study Activity Model

The model is thought of as a tool for teachers and students to talk about the different activities that are the result of the learning outcomes of a particular educational setting, like a course, module, theme etc. In the dialog between teacher and student the students can get a clear image of what is expected from them. And that teaching and learning is not just something that happens when they are in the same room but also in situations where the student "initiates" an activity related to the curriculum. Our use of the study activity model highlights the diversity in student learning behavior.

4. Analysis and findings

Our pedagogical design was designed to guide the students towards the qualitative phase where they cooperate independently and produce competence (Biggs, Tang 2011). Our analysis shows that this objective was met only partly.

4.1 Supporting the students

In the intervention the students were expected to watch videos as a preparation for the lessons (flipped learning). According to the Study Activity Model the activity of watching videos can be place in category 2 and the activities in class can be place in category 1. Activities in category 2 or 4 can give the students the flexibility in time and space. This flexibility is also recognized by the students in the focus group interview where they highlight the importance of being able to revisit the videos and use it as preparation for the examination. Some students felt the need for supporting the videos with literature reviews; others liked the thought of not reading at all.

The students had to watch videos partly to replace the old form of lecturing to the class. From a student's perspective lecturing is a well-known form of teaching as mentioned above (see Biggs level 1). The students know exactly what to expect. While the teacher is lecturing the students do what they feel necessary to remember the content e.g. by writing notes.

In our pedagogical design the students were not able to recognize the videos as teaching. In the focus group interview a student complained that:

"After this I feel the need to go home and read up on the subject. I don't get it. It is homeschooling" and *"I need teaching where I can take notes, because – I must admit – I didn't take notes during the videos. So, now we are sitting here without notes"*.

What the students express is confusion and frustration with the form of teaching. The form of the presentation of the content was different. So, the students were uncertain if should they write notes, watch the videos again later or do something third? More importantly the students were not aware of the pedagogical reasons why they should watch the video. They didn't see the connection between watching the videos as preparation for the lessons and the collaborative activities in the lessons.

In this intervention activities are moved from category 1 to category 2 in the Study Activity Model (fig 2). The students need help to recognize activities in category 2 as learning activities supported by the teacher – what is also known as scaffolding. Independently of the category in which an activity is

initiated we have to help the students. This is especially important with activities in category 2 and 4 where the teacher is not present (Garrison, Vaughan 2008).
Log data shows that 11 of 80 students did see the videos before class. In the period between classes and examination all in all 60 did seen the videos. In the focus group interviews students expresses the need for follow-up on the videos. This could be interpreted as a wish for a more explicit connection between the activity of watching the videos and the activities in the lessons. This illustrates how activities placed in different categories in the Study Activity Model should have a connection explicitly communicated to the students.
Quizzes can be placed in both category 2 and 4, initiated by the teacher, but it's up to the student to take a quiz. From our data we can see that the quizzes are not used as preparation or evaluation of the lessons, but rather as preparation for the examination later in the semester. In the focus group interviews students express that they liked the quizzes as a way of practicing the concepts discussed in the lessons. They even asked for more questions to cover all the subjects. The students also liked the fact that the quizzes were optional.
If the teacher expect the students to take a quiz in connection with the lessons a better connection must be made between the two (e.g. activity of taking the quiz and activities in the lessons)

4.2 Motivation, learning and diversity

Our pedagogical design with flipped classroom, blended learning, case based group activities, role playing and IT based learning activities was intended to motivate all students to learn. Inspired by discussions about the origin of motivation, we view motivation to learn as being produced by

- the need to pass exams (formal argument)
- the need to learn certain skills necessary for achieving a goal or pursuing a career (professional interest, the need to acquire competence)
- the fun of it (desire to engage in activities and eventually learn)

The learning situation prior to the intervention was suffering from low motivation. Functionalist motivational concepts such as obligatory exams didn't even motivate the students to participate. This kind of motivation also is known to catalyze surface learning (Biggs quantitative level, figure 1) and is not what we intended for. We did however see that many of the students used some of the content for preparation for their exam. A large group of students requested feedback from the teachers to validate their understanding of the topics. This kind of request seems to be motivated by the student's desire for passing exams and not specifically for learning.
Motivation derived from an understanding of necessity related to their future profession is here a specific problem, as the students in general did not understand the connection between their role as nurses and the concepts of management and organization. Student:
"When we don't know, if we are doing the task at hand properly – there is no reason for us to complete the task at all".
Our design aimed at demonstrating the need of administrative competence for their professional work as nurses to the students. Having the students take on the role of a nurse solving administrative problems was intended to motivate the students by having them experience the need of learning the subject in order to perform rather than trying to convince them by arguments. Furthermore the design offered (figure 2) personal responsibility for learning in every step of the learning process, either working collaboratively or independently during the different assignments during the course. They had to discuss authentic problems, improve and challenge their understanding of the problem. This enables practical and theoretical learning, which might facilitates the application of the knowledge in practice situations and heighten their employability.
This approach did have some impact. More often than before the teacher experienced that students expressed understanding of the aim, scope, and relevance of the course. Also it was found that students spontaneously expressed that the subject has turned out to be more interesting than they had expected. Students:
"We think it has been a lot better than we thought" and *"It is more important than one could think"*
We interpret these expressions as indicators of subject based motivation and also as an effect of the pedagogical design. Unfortunately we have reason to believe that this applies to only a part of the students. We will elaborate this later.
Making learning fun for the students seemed to be a feasible option and our design was aimed at providing opportunities for the students to play, challenge themselves, utilize different devices, and interacting with each other. This ambition was not met to a large extent. In the classroom we observed students working in groups and seeming to be engaged in producing posters or discussing the case provided for them with some enthusiasm. But we also observed exercises that has been planned to be enjoyable for the students being done superficial and barely sufficient.

4.3 Student diversity and the pedagogical design

The student population in the nursing education is diverse. Even though we found that some students seemed to benefit from the pedagogical design by being active and presumably learn to use concepts and models for organization to discuss and plan their actions as nurses, a large group of students did not. Our log data suggests that more than half of the students did not look at the material and did not do the exercises between the lectures. We also found that the meaning for many of the students lie in preparation for exams, but the invitation to reflect on professional challenges related to the subject failed.

The design was meant to provide a diverse range of opportunities for the students to engage in flexible learning activities, but the students seemed to view the activities as optional rather than sequential and coherent.

We do not know why the students were not engaged, but the design, which was planned to be engaging all students in reflexive learning activities, seems to leave out a big group of students. An explanation could be that the students did not understand the activities as educational, as discussed above. They were also not able to see the relevance – they gave up and chose to do other things. Students:

"We work quite hard but our work is not reviewed in class, so we feel it is a waste of time" and *"Maybe that is the reason why some students don't bother showing up; because they think it is not addressed anyway."*

Furthermore the students expressed that the teacher's performance on video is important to them (it must be perfect). And they expressed an unmet need for supervision – even at times when the teacher was actually there. This focus on form indicates even stronger that the content itself is not motivating for the students.

4.4 Feedback

The alleged reality in educations worldwide is that students in general receive very little quality feedback (Black, Wiliam 1998, Hattie, Timperley 2007, Hattie 2009). We know from educational research that feedback is an important part of learning and teaching processes. We know that when receiving and giving feedback the student learning performances increase quite dramatically. Hattie states that: *"… feedback can lead to increased effort, motivation or engagement to reduce the discrepancy between current status and the goal, it can lead to alternative strategies to understand the material, it confirms to the student that they are correct or incorrect, it can indicate if more information is available or needed, it can point to directions that the students could pursue, and it can lead to restructuring understandings"* (Hattie 2003 p. 7). Our results suggests that the students felt a great need for feedback when completing an activity and when receiving feedback on the specific task they felt motivated to further studies.

In our study the students had to make decisions whether they needed supervision, they needed to interpret feedback and they need to assess whether their performance was good enough to their own standards. Thus students didn't have explicit standards of assessing their own performance and relied on the teacher to appraise and validate their work.

The students in our study needed affirmative feedback on activities, whether they solved a task right or wrong. When the students worked with the clinical case story "An ordinary day at the hospital" a task requiring meta reflections on their future practice as nurses, it was clear that the students had problems working with a reflective task where there is not a specific answer. Hence the teacher cannot provide definite feedback. This aggravated the students: *"We did not know whether we sufficiently have solved this task"*. The classroom observations indicate that the teachers were trying to encourage the students to meta-reflect on their learning process asking divergent reflective questions such as: *"Can you imagine the impact of… or consequence of this?"* The result suggests that the students did not know when, how or where they were going to succeed in the activities. This could be related to the lack of specific goal orientations and vague criteria for success. The need for feedback was clear for activities in all categories of the Student Activity Model forming a connection between activities independent of weather they were initiated by the teacher or the student.

5. Conclusion

The students liked the variation in teaching methods especially the videos and the flexibility in time and space. Engaging the students in activities in category 2 and 3 gives flexibility in time and space, but at the same time the teacher's intention is not always reflected in the student's actions.

Moving activities from one category in the Study Activity Model to the next changes the form of the activity. This change can confuse students and they are not able to recognize the activity as teaching. The students' confusion may be caused by lack of scaffolding or a profound lack of independent learning ability.
Our results also suggest that the lack of specific learning goals and clear criteria for success can kill motivation. The students needed to determine whether they successfully have reached their goals and fulfilled the criteria at hand. The students were clearly in a quantitative phase while the teacher was trying to engage the students in activities in the qualitative phase. This became apparent in the pedagogical design demanding participation and reflection by the students.
In order to make a pedagogical design work when using flipped learning and other activities requiring self-induced activity by the students, the students need to be motivated to do their part. Our research shows that the students are primarily activated by the need to pass exams. And while some students become motivated by participating in activities and realize that the non-core subject is relevant for their nursing profession after all, a large group never gets motivated at all. The activities themselves did not seem to encourage student activity in any noticeable scale leaving motivation emerging from spontaneous engagement in learning activities unused.

6. Perspectives

Attempting to encourage students to learn a non-core subject by introducing IT-based pedagogical designs seems promising yet problematic as a large group of students are still left behind. One important property of IT-based design is the opportunity to tailor different learning activities for individual students or groups of students. In this intervention we didn't utilize this opportunity. At this point we see this unused opportunity as a way of enhancing the design for individualization and by doing so targeting the diversity of nursing students.

The course Organization, administration and management lies rather late in the nursing programme. This means that the students have been accustomed to traditional learning activities such as lectures e.g. This might have an eminent impact on the students' ability to perceive the activities in the project as learning activities. Having introduced flipped classroom and blended learning, role playing etc. at an earlier stage of their education might have had significance for the students' learning behaviour.

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