



Nursing students' attendance at learning activities in relation to attainment and passing courses: A prospective quantitative study



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ABSTRACT

Background: Students' motivation and ways of engaging in their schoolwork are important for their performance, including passing exams. Attendance at learning activities has also been argued to be of major importance, although no causal relationship with passing exams has been established in nursing education.

Objectives: The aim of this study was to describe the impact of attendance at nonmandatory learning activities on attainment, in terms of passing or failing of exams, in nursing education courses including both mandatory and non-mandatory activities.

Design: A prospective quantitative design.

Setting: The nursing education programme at a Swedish university.

Participants: Nursing students (n = 361) from two courses and four classes within the nursing programme.

Methods: Attendance was registered at every non-mandatory teaching activity by asking the students to note their attendance on a list. Data such as sex, age, and whether the students had passed the exam were also collected for each course and each semester separately.

Results: Increased participation was associated with an increasing proportion of students passing the exam. The chance of passing the exam increased by 13% for every additional learning occasion attended. Logistic regression showed an OR of 5.4 for an attendance of 100%.

Conclusions: An increase in attendance gave a higher proportion of exam passes. Encouraging students to attend non-mandatory learning activities could be of value, and potentially contribute to an increased graduation rate for nursing students.

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1. Background

One major concern in higher education is for students to pass exams and obtain their degrees. In Sweden this is important not least from an economic perspective, since higher education is publically funded and thus cost-free for all individual students who are citizens of either a state covered by the European Economic Area agreement or Switzerland (The Swedish Higher Education Act, 1992). Successful graduation of students is also important from the perspective of national staff development, as societies need well-educated citizens. There is a lack of educated registered nurses in the Swedish health care system, creating a strong need for a high throughput of nursing students. Within higher education in Sweden there is not only a requirement to achieve the

goals of one's course, but also a demand for students to be erudite and to be able to cooperate with others (Elmgren and Henriksson, 2014; The Swedish Higher Education Act, 1992). A report from the Swedish National Agency for Higher Education (Eriksson et al., 2009) showed that throughput (defined as the proportion of graduations in a given number of years) is higher for educational programmes leading to a professional diploma, such as within nursing and judicial educations (85% for nursing), than for programmes leading to a different kind of degree, like Bachelor of Science in engineering (37%). A general difference between sexes was also found, with women graduating at higher rates than men.

2. Learning and Teaching

Views of knowledge are not uniform, in terms of either how knowledge can be acquired or how the process of learning is defined (Säljö, 2009). Learning is considered to consist of many different aspects, and its complexity is underestimated by many (Alexander et al., 2009;

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Säljö, 2009). As Phillips and Soltis (2009) have pointed out, different types of learning have differing needs, and hence there is also a need for different teaching methods. Varied teaching methods are also considered to be needed to meet students' varying needs for learning, since they provide better conditions and opportunities for learning through supporting the students' different learning styles (Elmgren and Henriksson, 2014; Phillips and Soltis, 2009). Some students learn best through hearing and some by doing, and so a variety of teaching methods are needed in order to promote learning. It can be assumed that the subject to be learned also could be influencing. Since the ability to store things in long-term memory is suggested to be limited (Elmgren and Henriksson, 2014), students require time for reflection to allow them to take in what is said during, for example, lectures. The view of how learning should be performed has changed over time in favour of more student active learning theories (Kugel, 1993), but lectures are still the most widespread teaching method (Elmgren and Henriksson, 2014). Feedback is also considered important for students, and is described to promote further learning (Elmgren and Henriksson, 2014; Orrell, 2006) since the focus is on what the students have learned and how they can make progress in their learning.

3. Previous Research

Research shows that students' ways of engaging (or not engaging) in their education and learning is important for their performance and possibilities of passing tests and exams (Ainley, 1993). It has also been shown that students' motivation is a significant factor in their academic achievements (Mega et al., 2014). One review states that researchers agree there are clear associations between students' motivation and their achievements; the more autonomous motivation, the better students learn (Guay et al., 2008). Congruence and consistency in course organization and integrative learning, as well as critical thinking, have also been shown to affect students' achievements and lead to better grades (Karagiannopoulou and Milienos, 2015).

Studies from the area of mathematics (Meulenbroek and van den Bogaard, 2013) and economics (Allen and Webber, 2010) have shown that attendance at learning activities is of major importance for students' achievements, for passing exams, and for their grades. Allen and Webber (2010) found that students' participation in seminars had a significantly positive effect on their ability to perform in exams. For every seminar the students attended, an increase of 4.1% in exam marks could be expected. This supports previous findings from the area of economics studies, where similar results have been found (Durden and Ellis, 1995). Attendance correlated positively with performance, but the association was not entirely linear; it took a certain amount of absence for the negative effects to show. Meulenbroek and van den Bogaard (2013), who reported similar results from a course in calculus, also pointed out that being absent at the beginning of a course predicts a tendency to miss more lectures later in the course and thus should be taken as a warning signal. A discussion paper focusing on the area of nurse education concluded that there is not yet enough evidence to claim that mandatory attendance in nurse education will ensure passing of exams (Lipscomb and Snelling, 2010). A relationship between attendance and achievement (in terms of passed courses/exams) can be found in many articles, but the effects are small, and a causal relationship has not been established (Lipscomb and Snelling, 2010). It has been suggested that attendance can be viewed as a contributing factor along with a number of proxying variables, but that attendance in itself does not necessarily imply academic success (Gump, 2005).

Research on nursing students' absence behaviour has identified a number of reasons for absence, such as illness, financial reasons, poorly structured sessions, and dislike of sessions in a lecture theatre (Hughes, 2005; Young et al., 2010). However, research has also shown that student themselves hold the opinion that attendance is a requirement in nursing education programmes (Doyle et al., 2008).

An examination of relationships between elements of academic engagement and academic performance among nurses revealed that engagement in paid employment in parallel with studies had a significantly negative association with assessment scores after controlling for age, ethnicity, and homework completion (Salamonson et al., 2009). Lecture attendance was shown to have a positive association with academic performance. However, the results did not demonstrate that lecture attendance contributed directly to improving academic performance. In conclusion, previous research has described an association between attendance and attainment in higher education, and various reasons for students not to attend lectures. In nursing education, increased attendance has shown a small effect without convincing significance, and the causal relationship seems to be multifaceted. Therefore more studies are needed to reach evidence regarding the role of attendance for students' attainment. Further research is needed to examine the relation between academic performance and attendance in non-mandatory learning activities as well as enlighten factors influencing this relationship, and our study aim to address these issues.

4. Aim

The aim of this study was to describe the impact of attendance at non-mandatory learning activities on attainment, in terms of passing or failing of exams, in nursing education courses including both mandatory and non-mandatory activities.

5. Methods

The study used a prospective quantitative design with both descriptive and analytical statistics.

5.1. Design

Nursing students attending two courses, each run twice a year, within the nursing education programme at a Swedish university, with similar course outlines, were asked to note their attendance on a list at every non-mandatory teaching activity. According to the university's own guidelines, a teaching activity can only be considered mandatory if it includes an examination, and hence there is no required degree of attendance at non-mandatory learning activities. Both courses consisted of mandatory as well as non-mandatory teaching activities, and lectures were the primary teaching method. Passing the courses as a whole required both an exam pass and participation in all mandatory activities, but as noted above, attendance at non-mandatory learning activities was not required.

5.2. Sample Size Calculation

The sample size calculation gave that 330 students were needed to be able to detect a difference of 15% between the proportions of exam pass/fail, with an assumed two-sided p -value of <0.05 and a power of 80%.

5.3. Study Population

The study was conducted at a university in western Sweden. The nursing education programme at this university has admission twice a year, at spring and autumn, with approximately 100 new students every semester.

The study participants comprised nursing students from two different courses, in two classes from each course: course A, in the third term of the programme, with start in spring and autumn 2013, and course B, in the second term of the programme, with start in autumn 2014 and spring 2015. A total of 361 students participated, evenly distributed between the four classes; that is, about 90 students in each class. The

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