

## **Peer feedback on a test exam and self-reflections on academic English – tools for reducing failure rate in the written exam in Nutrition Physiology, after change of language into English**

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### **Introduction**

Nutrition Physiology (NP) is a mandatory course for students taking a Master's degree in Human Nutrition, in Clinical Nutrition or in Gastronomy and Health. The course is in the first block in the first year of the Master's programme. The course is theoretical, with lectures and theoretical exercises, and the evaluation is a final four-hour written examination with all aids allowed (except computer/internet). The course runs in parallel with Experimental Nutrition Physiology (Nutrition) or Hygiene and Sanitation (Gastronomy and Health).

The Master's programmes admit graduates with a university BSc degree (for example, Sport Sciences, Biology, Food Science, Health and Production), referred to as UB, or a professional BSc degree (for example, Nutrition and Health, nurses, physiotherapists, lab technicians), referred to as PB, with additional courses in biochemistry, physiology, nutrition and statistics equivalent to what would have been obtained with a BSc degree in Food Science with the Food, Health and Nutrition subject-specific course package.

In 2009, the language of instruction and examination for NP changed from Danish to English, and 82 students took the four-hour written exam. In contrast to previous years, the percentage of students who passed the exam was only 75% and the grade point average was 3.9.

After evaluating the 2009 course, the low pass rate was mostly ascribed to problems with written academic English in the context of the course

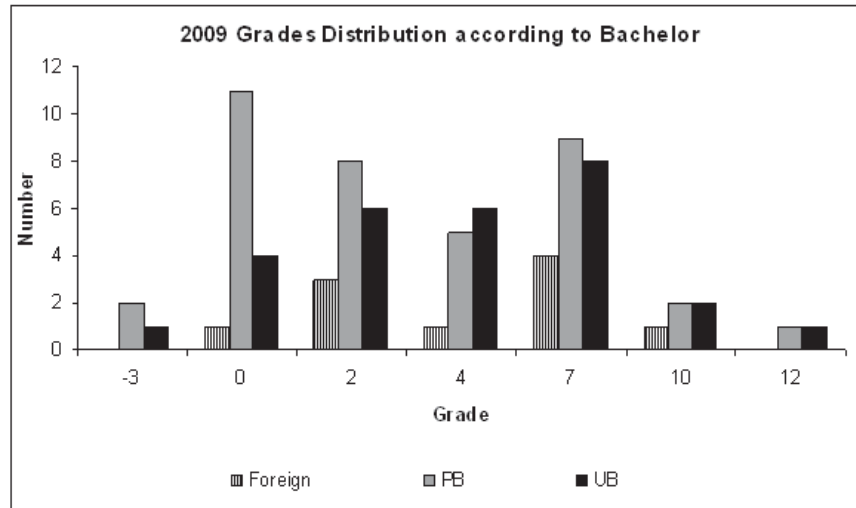
topics and additionally some of the problems could be due to students' difficulty in understanding academic English. Difficulty with the English language could increase the students' anxiety before the exam, and increase the time spent on understanding the exam questions, considering the answer to the problem by rephrasing from mother tongue to English, correcting spelling and grammar, and writing the answers in English.

Based on the conclusion that the academic English level seemed to be the obvious reason for the observed fall in the pass percentage, it was decided to offer the student a short English course from at the university's Centre for Internationalisation and Parallel Language Use (CIP) during the introduction week to make them aware of their own English abilities and give them tools to practise in the areas where their current level was not adequate.

For the NP course, we would ideally align the teaching with the exam and include a written assignment with feedback to the students from the lecturer in every lecture. This would give the students the opportunity to structure their knowledge, read and understand the questions in English, formulate and write an answer in English, and receive the necessary feedback to get a view of the requirements for fulfilling the learning objectives and passing the exam. In reality, however, with a course with multiple lecturers this is not feasible. Instead, we decided to ask all the lecturers to include theoretical exercises in their lectures, to encourage the students to use English as their main language when doing the exercises, and to discuss the assignments with the students.

Additional analyses of the 2009 exam results showed that the PB students had nearly double the failure rate (34%) of the UB students (18%) (Fig. 13.1). These results made us wonder if the UB students might have evolved strategies to deal with the exam situation (because they had previously been in similar exam situations) and have better study techniques (university-based) than PB students.

The evidence that not only English competence but also the BSc educational background influenced the exam results suggested that we should use additional measures to increase the constructive alignment between lessons and assessment beyond just requesting multiple lectures (see above) to add additional exercises and encourage the use of written English (in reality it is difficult to ask lecturers to make sure that everything on their slides are in English). We decided to introduce a mock exam and peer feedback session (PFS) mid-way through the course. The peer feedback (PF) would give the students an opportunity to gain experience with writing a full exam



**Fig. 13.1.** 2009 NP exam results for students divided according to BSc educational background. Foreign, students from abroad; PB, profession Bachelor's degree; UB, university Bachelor's degree.

in English within a four-hour time limit, evaluate their own performance, give and receive feedback from one of their peers, have a group discussion of the problems and their solution during the exam, and exchange exam strategies. Our goal was to reduce the likelihood that, in addition to inadequate written English skills, lack of experience with the exam situation at the university would detract from the students' abilities, independently of BSc background, to adequately show fulfilment of the intended learning outcomes for the course at the exam.

The aim of this project was to evaluate if the students had engaged in self-reflection on their English ability (with or without participation in the CIP course), to evaluate if the students found the peer feedback session useful, and to evaluate whether these tools could reduce the failure rate in the written four-hour NP exam compared with the previous exam (2009).

## Methods

### The CIP test

The CIP test was arranged by the CIP at the University of Copenhagen as an aid for the students in the first year of the Master's programme to diagnose their English skills and their possible need for improvement of

English competences. The students were free to take the CIP test before the beginning of block 1 of the first year of the Master's programme. In this report, we have evaluated the answers of the students on the NP course who took the CIP test with regard to any subjective effect on the students' approach to their English skills during the NP course.

### **The peer-feedback session (PFS)**

As part of the NP course this year, we have introduced a mock four-hour exam set as an assignment uploaded on Absalon for the students to work on individually and a PF process where the students could read and comment on each other's answers in the PF groups. The PF groups have been formed to allow as much variation in academic background as possible in order to share competences. The groups were also used for theoretical exercises before the PFS to give the students the opportunity to get to know their group members. The assignment enabled students to experience the exam situation, and reflect on how they could best convey all their academic knowledge in a precise manner within a limited period of time. The students could attempt to complete the work in the restricted time with the exam set and they had the opportunity to see and correct another student's work. As the last part of the PFS, the students were to have a meta-discussion of the exam situation based on their experiences with the mock exam. The results were one page of student-to-student advice on managing the exam situation without compromising their academic level. The students were asked to evaluate the PFS afterwards.

### **The exam results from 2009 and 2010**

We compared the results of the exam from 2009 and 2010 and used them as an element to evaluate the effects of the new initiatives at the start of and during the NP course.

### **Statistics**

SAS program (version 9.2; SAS Institute Inc., Cary, NC, USA) was used for data analysis and the bivariate associations between the selected variables were tested by Pearson's correlation coefficients.

## Results

From all the students registered for the exam in NP in 2010 ( $n=68$ ), 31 (46%) returned the questionnaire, among whom two individuals did not participate in the PFS and 29 (43%) participated in the PFS. At the lecture after the PFS, the students were asked to fill out questions one to four to evaluate the value of the CIP, however, none of the students returned the questionnaire. Of the 29 students who participated in the PF and returned the questionnaire, one student did not state academic background and thus this response was omitted from the analysis. Of the remaining 28 students, 50% had a PB and 50% UB background.

### Evaluation of CIP

The CIP evaluation was based on the 29 students who participated in the PFS: 57% of PB and 53% of UB students took the CIP test and course, respectively. Only 14% of all students who took the CIP test decided to practise their academic English skills during the course (11% of PB and 4% of UB students, respectively). There was no significant correlation between students' background and the consideration of the language before taking the course, or between the consideration of the language before taking the course and the difficulty in keeping the academic level of the written exam test.

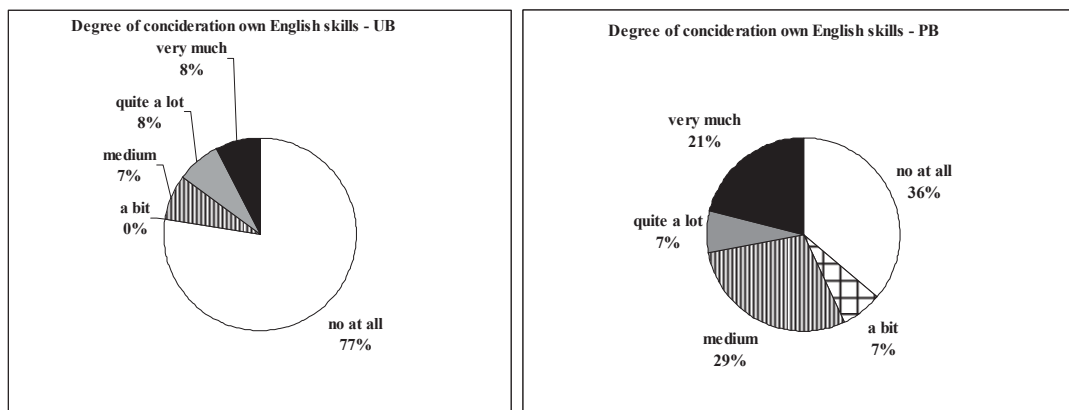
The most common reasons for not practising English skills were:

- a) "But not as much as I would like to ... lack of the time"
- b) "I am using English dictionaries to increase my vocabulary"

The most common reasons for not practising the English skills were:

- a) "I was placed in the top category, so I did not find it necessary"
- b) "I don't consider my English as an obstacle"
- c) "I don't have time"
- d) "no, but I will consider it"

Half of the PB students evaluated their English skills while only 21% of UB students did so before taking the NP course (Fig. 13.2). Of the UB students, 71% did not evaluate their English skills before taking the NP course.



**Fig. 13.2.** Degree of evaluation of own English skills before applying for the NP course by profession Bachelor students (PB) and by university Bachelor students (UB).

### Evaluation of PFS

Of all students who registered for the exam on the NP course, 41% ( $n=28$ ) took part in the peer feedback session. The students reported their expectations that the PFS would give them a better overview, help them to understand what the exam will look like and what the expectations are, would be a good opportunity to practise for the exam and to get feedback on the academic and structural part of the exam as well as to get advice on exam strategies.

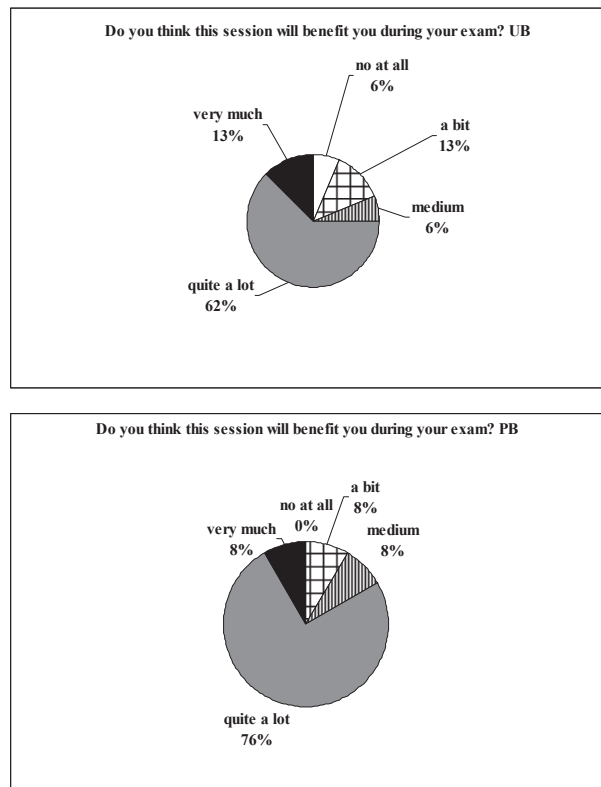
All but one student wrote the answers in English. Regarding the difficulty of keeping a high academic level in English while answering the exam questions, 57% and 36% of the PB and UB students, respectively, answered that it was very or quite difficult. The majority of PB students thought that it was quite difficult, while the majority of UB students thought that it was only a bit difficult. There was no significant correlation between students' background and the difficulty of keeping the academic level of the written mock exam.

For 64% of PB and 78% of UB students, it took longer than expected to write down the answers in English. In many cases, for the PB students the English was an obstacle. It took them longer time to read the questions, understand them and to formulate the answer in English, especially, the English was not academic enough. For one student the calculations took a long time and a few students did not have an overview of the curriculum. In contrast, for most UB students, it was difficult to figure out the depth of

the questions and how specific one should be in answering them. Many of the students had not read the entire curriculum yet and some made a lot of breaks while answering the questions. For one student, there were too many questions and it took too long time to look it up and explain properly.

After the PFS, 15% of PB and 47% of UB students did not consider at all changing their previous opinions about their own English skills based on CIP. 62% of PB and 27% of UB students had changed the previous evaluation of their own English skills only a bit. The majority of both kinds of students thought that the PFS would benefit them during the exam; 84% and 75% of PB and UB students, respectively. However, 6% and 13% of the UB students thought that the session did not benefit them at all or only a bit, compared with 0% and 8% of PB students, respectively (Fig. 13.3).

Regarding receiving and giving peer feedback, 55% of the PB and UB students answered that the degree of benefit was “medium”.



**Fig. 13.3.** The degree of benefit of the peer-feedback session for the profession Bachelor students (PB) and university Bachelor students (UB).

## Evaluation of the exam from 2009 and 2010

In 2009, 25.6% of the students failed the exam and the grade-point average was 3.9. In 2010, just 4.5% of the students failed the exam and the grade-point average was 5.6.

## Discussion

Overall, 46% of the students filled in the questionnaire and 43% took part in the PFS session. The students who took part in the PFS were equally divided between PB and UB educational backgrounds. Overall, the students found that they benefitted from the mock exam and the PFS. Only a minority of the students had taken the CIP test and course, and only 14% of the students had worked on their academic English after the CIP course and a majority of these were PB students. The PB students had also reviewed their English skills before enrolling in the Master's programme much more frequently than UB students.

The PFS process was changed on the last day, as many students had not exchanged their work, as indicated by most students stating that they had received only medium feedback from their peers. Instead, solutions to the assignment were handed out to the students and the groups were aided with work sheets to get to the meta-discussion. All groups were very good at discussing, they handed in the results of their discussions, and the summing-up of the discussion indicated that the exam situation had been discussed. The student-to-student advice notes on exam strategies were uploaded on Absalon for all students to see. As stated earlier, most students evaluated that the PFSs session were beneficial for them. However, in the general course evaluation, some students suggested improvements to the organization of the PFS. Some of the students (i) would like to be informed at an earlier time point about the PFS; (ii) did not appreciate the predefined groups because six members were too many; people with different competencies slowed down the group progress and they preferred to work alone or in pairs; (iii) did not feel comfortable sharing their work with fellow students or felt they did not have the skills to evaluate other students' work; (iv) felt that this way of teaching was not university level but more kindergarten level.

The first trial of the PFS and the evaluations from the students suggested that we should modify the PFS by an earlier introduction with more details to relieve any anxiety and for the students to understand what the intended benefits could be from the session. The PFS should also have been



much more structured to keep the group discussions focused and should be divided into smaller sessions, working with one work sheet at a time and summing up on the blackboard after each session. We would like to keep the predefined groups to mix the students so they can benefit from each other during the learning process. From previous years, we know that the students do not mix in block 1 when they are allowed to form their own groups, however, as the parallel courses are also using group work, it might be possible to use the same groups or maybe have smaller groups.

The CIP test was introduced as part of the introduction week to give the students an opportunity to review their level of academic English and work to improve the level if needed. This project also asked the students about their self-reflection on their English abilities before and after taking the CIP test. However, the results are limited as only a minority of the students who participated in the PFS participated in the CIP test during the introduction week. The result of the CIP test had a relatively low impact on students' evaluation of their English skills, especially among the UB students. Slightly more PB than UB students reviewed their English skills before taking the course, but there were no significant correlations between these two factors.

The exam results for 2010 had a very low failure rate (5%) and two of the students who failed were students from 2009 retaking the exam. The results from 2010 indicate that the additional CIP introduction course, although only about half of the students participated, increased the students' awareness of their level of academic English. However, many students stated in the evaluation that they lack time to practise and, in the general evaluation of the course, some students said they would like to have more exam assignments to practise the curriculum but also the use of academic English. Most students also appreciate all the exercises and would like to have more exercises during the lectures (and some would like separate lectures and exercises). We will include more exercises for the students next year, and we will discuss with the CIP course leaders if it is possible to integrate the tools for practising academic English with the NP exercises.

This project has some limitations that impede the interpretations of the results: the exam sets were not identical, the students represent two different student bodies and only about half of the students answered the questionnaire. As two different student bodies are compared with regard to exam results, other factors could have played a part in determining the difference in pass percentages for 2009 and 2010. One main factor is the admission requirements: in 2010, several PB students were declined admission as they

had not fulfilled the requirements in physiology, biochemistry and statistics while most applicants were admitted in 2009. As a consequence, the exam results might also reflect a difference in the student body from 2009 to 2010. As only 46% of the students who signed up for the exam answered the questionnaire, we are left guessing what the other half of the students think. It is possible that the students who participated in the peer feedback are the students who are already very active and have a very high study capacity, as one student wrote in reply to “Why you are participating in the peer feedback session”: “I’m always there when something is planned/goes on”. However, most students wrote that they thought that they needed to discuss or get to know exam strategies, so the PFS could have activated the students who might have contemplated the exam situation at great length before.

In 2011, we will also give the students the opportunity to take the CIP course in the introduction week as the results from 2010 have shown that this will force the students, participating or not, to reflect upon the issue of English as a learning language. As most of the students who participated in the exam test and PFS found it beneficial, we will offer a similar session in 2011. At present, we are considering offering some additional seminars for the students, working with student services, to introduce students coming from outside the university to the university environment.

All contributions to this volume can be found at:

[http://www.ind.ku.dk/publikationer/up\\_projekter/2010-3-1/](http://www.ind.ku.dk/publikationer/up_projekter/2010-3-1/)

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