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Motivation and course selection: a student's view

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Introduction

This assessment aims to gain insight into the thoughts and motivation that are involved when university students select their optional courses - for example at M.Sc. level. Being able to design a course that match the expectations of the students has a number of considerable benefits both to the students, to the academic course coordinator, and to the host institute. First of all, the course content and design, including the wording in the course description, must appeal to the students in order to attrack their attention and ultimately make them sign up for the course. However, if the student's underlying motiviation and educational focus is essentially unknown, it is potentially very difficult to design a course that will attract a sufficient number of students and the course may therefore easily fail already at the initial sign-up stage. For example, it is important to know if you can expect that the students, you are targeting for a given course, are motivated out of pure interest and passion for the topic(s) in question, or if they are specifically selecting courses that they think are more likely to directly benefit their career. For obvious reasons, these are not mutually exclusive points but there might still be a tendency that students within some academic disciplines will speculate more directly in career advancing strategies than in others, and it is a major advantage for the course coordinator to know his/her audience in that regard.

Secondly, understanding the student's underlying motivation will make it much easier to design and carry out a course that can meet (or challenge, where appropriate) their expectations. These insights will for exam-

ple make it possible to perform a Constructive Alignment analysis (Biggs, 2011; Mørcke & Rump, 2015) where the overall goals of the course is aligned with the course activities, and the exam, in order to optimize the deep learning of the student. The result should ultimately be an increased learning outcome, less students dropping out, and in general just a better atmosphere at a course that is well-aligned with the students own motivation and expectations.

My personal motivation for addressing this topic was instigated by experiencing difficulties in attracting enough students to a new course I tried to launch at the Natural History Museum of Denmark (NHMD), where I am employed as an assistant professor. The museum acts as an institute under The University of Copenhagen but we are not heavily involved in teaching for example Biology and Geology students at undergraduate level. Instead the majority of the basic courses are being taught at other institutes. This implies that NHMD does not have a natural recruitment-flow of students to all the optional course we offer at both B.Sc. and M.Sc. level and therefore have to rely more on finding new niches and specifically tailoring courses that are not already available elsewhere. I, and other early-career scientists at NHMD, who are being at least partly evaluated by our ability to successfully establish and run university courses, have come to realize that this can be a considerable challenge.

Therefore, I decided to investigate which factors determine course selection when our students assemble their education. I figured that by obtaining a better understanding of their motivation and background, I could become better at designing new courses to meet the expectations and requirements of the students. From a less self-centred viewpoint, understanding the students motivation could obviously be helpful also on much broader terms, with the ultimate aim of creating a better and more relevant education for the students (Johannsen, Ulriksen, & og Holmegaard, 2013).

Methods

The input for this assessment was collected by two means. First I engaged in informal 'interviews' with two highly experienced lecturers, namely Assoc. Profs. Anders P. Tøttrup and Anders J. Hansen, who act as our respective directors of Education and Science at NHMD. These interviews served merely as background research in order to understand the situation

and teaching history at NHMD, allowing me to ask the right questions in subsequent questionaires to the students.

As for the actual investigation of student motivation, I designed a 1-page questionaire that was handed out to students at two courses at NHMD. The questionaire was divided into three parts (see Appendix A). The first question simply asks to the education of the student (for example *"Biology at Copenhagen University, M.Sc. level"*). The second part represents a quantitative approach, requiring the student to rate (1 to 5) the importance of nine different factors that may affect their motivation for selecting a particular course. The nine rated factors are: 1) Interest in the topic; 2) The reputation of the course; 3) The number of ECTS points; 4) Logistics in relation to other aspects of private/professional life; 5) Career opportunities; 6) Which institute is offering the course; 7) Who the teachers are; 8) Expected work load; 9) Social aspects (i.e. fellow students at the course). Lastly the students are encouraged to mention aspects that might be missing from this list. The third part of the questionaire requires the students to express in their own words a) Their main motivation for selecting the current course; b) If they had already heard about the course from fellow-students before signing up; and c) To what extent the online course description influenced their decision. The questionaire is included as Appendix A.

The questionaires were then handed out to a total of 35 students, representing two ongoing optional courses at NHMD, namely *'Origins'* (http://kurser.ku.dk/course/nbia09033u) and *'Forensic GeoBiology'* (http://kurser.ku.dk/course/nnmk13003u/). These courses are relatively successful in terms of student numbers why understanding the students underlying motivation for selecting these courses seems highly relevant. Given the relatively small number of observations, there is not basis for a detailed statistical evaluation of the results, which are merely summarised in figures and qualitatively discussed. This should be regarded as a pilot-study, probing the potential for a larger investigation of student motivation.

Results

Initial interviews and working hypotheses

The conversations with the two NHMD lecturers will not be reproduced here but I will just briefly discuss two aspects that was highlighted during these conversations. The first aspect, emphasized by both of them, was that

the students they encounter when teaching typical M.Sc. courses at NHMD (mainly Geology and Biology students) seem to generally be driven by a genuine interest in the topic of the courses they have signed up for. It is not unexpected that students who have succesfully made it through their first couple of years at university have a genuine interest in the topics they select, but nonetheless this calls for a working hypothesis, namely that the *Interest in the topic* aspect will receive a high ranking from most students when they fill in the questionarie.

The second aspect worth noting is that one of these courses (*Forensic GeoBiology*) has experienced a highly positive trend in terms students signing up since its beginning. The approximate year-to-year increase in numbers over the past five years is observed as 6, 9, 12, 18, 27 students signing up. This increase has occurred without any significant changes to the course design, the timing of the course, or the course description. Therefore, the working hypothesis is that at least for this course, a lot of the motivation for signing up must come from the course gaining a good reputation, and the students are hearing about it from their fellow students who had the course in previous years. In contrast, the other course *Origins* has experienced a negative trend with less students signing up in recent years.

The students

A total of 35 students enrolled at the Science Faculty filled in the questionaire, 20 of them assigned to *Forensic GeoBiology* (2-week M.Sc. summer course in week 34-35) and 15 to *Origins* (B.Sc. course in block 3). The students background (discipline and level) is summarized in Table 1.1, and it is evident that the composition of students differs a bit between the two courses. However, unless where highlighted in the text the results from both courses will be discussed combined.

Rating the motivation

When examining the distribution of motivation scores (1 to 5) for each of the nine categories (Figure 1.1) it is clear that one category in particular stands out by being assigned the highest score from many students, namely the *'Interest in the topic'* category. Similarly, one category stands out with a relatively high proportion of students selecting the score 1 (not important). This is the category of *'Which institute is offering the course'*,

Table 1.1: *Background* A summary of the university background of the 35 students included in this investigation.

Forensic GeoBiology	
Biology, BSc	5
Biology, MSc	3
Biotechnology, MSc	8
Molecular Biomedicine, MSc	4
Origins	
Biology, BSc	6
Biology, MSc	1
Geology, BSc	6
Computer Science, BSc	2
Total	35

which is clearly not an important consideration when students are selecting their courses. The differences in motivation scores between the nine categories become easier to observe and quantify when the sum of all motivation points is calculated for each category (Figure 1.2). Again here, it is very clear the the *'Interest in the topic'* category with a total of 168 motivation points is the single most important factor (of the ones included in the study), when these students are selecting their courses. *'Course reputation'* and *'Career opportunities'* are both getting around 100 motivation points, whereas *'Logistics'*, *'Social aspects'*, *'Expected work load'* and *'ECTS points'* achieve in the range of 87 to 76 points. Two categories stand out with only 64 and 62 points, represented by *'The teachers'* and *'The institute'* offering the course. These are clearly the least important aspects, overall. As can be seen from Figure 1.1, the number of answers differ a bit between the categories. For example all 35 students have ranked the *'Personal interest'* category, whereas only 32 have ranked the *'Institute'* category. Obviously this will have an affect on the sum of motivation points depicted in Figure 1.2, but not to an extent that influence the main conclusions.

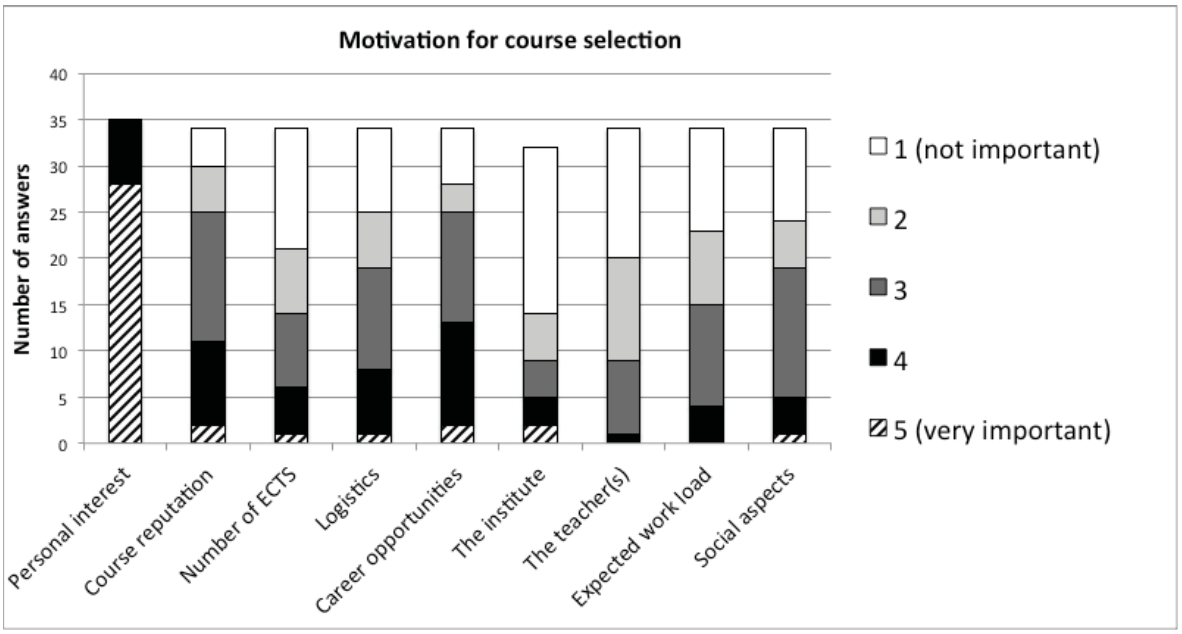

Fig. 1.1: *Overview of motivation scores* A summary of the points assigned by the students for each of the nine motivation categories listed in the questionaire.

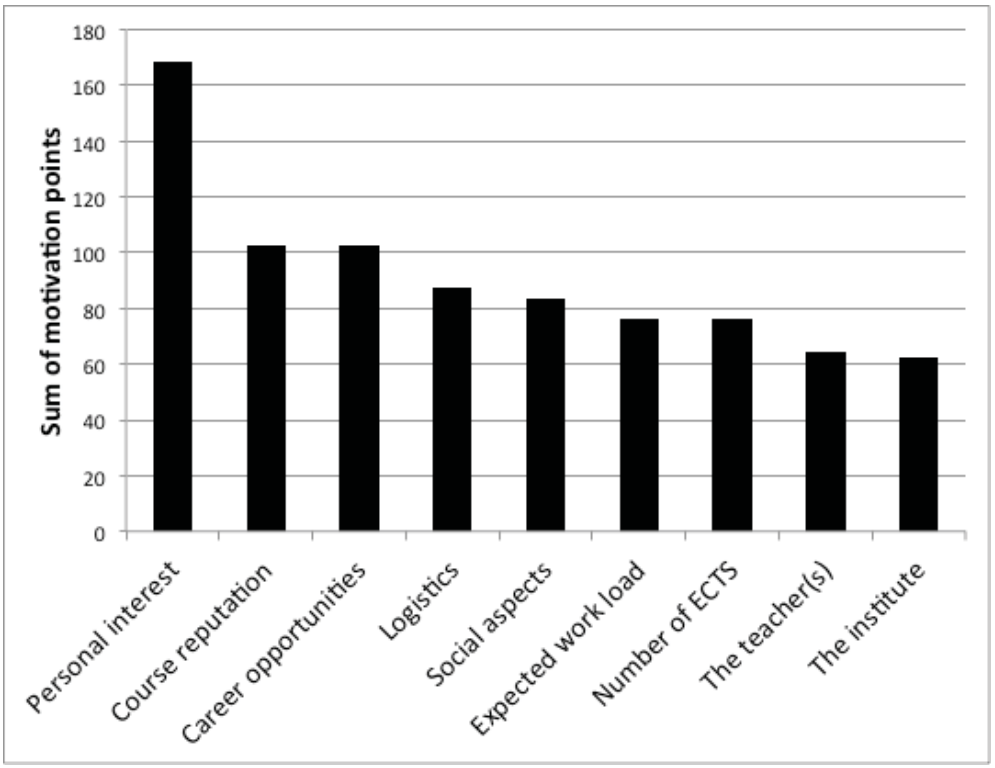

Fig. 1.2: *Sum of motivation scores:* The sum of motivation points for each of the nine motivation categories.

Other remarks

When addressing the question *"What was your main motivation for signing up to this course?"*, 30 of the 35 students (86%) apply words like *"exciting"* or *"interesting"*, clearly confirming that personal interest in the given topic is a major driver in selecting the course. Perhaps more surprising, 15 of the 20 students (75%) from the Forensic GeoBiology course, mention either the fact that they like the idea of having an intensive summer course, or something along the lines *"I needed 7.5 ECTS, and this was a brilliant way to get them fast"*. So clearly, for this course, the actual type of course and how/when it is executed, has certainly impacted its selection by the students. When addressing the question *"Had you heard about this course prior to reading the course description?"* a total of 20 students (57%) reply *"yes"*, and most of these have heard it from fellow students. In Forensic GeoBiology 12 of the 20 students (60%) confirms this, whereas slightly less (53%) in Origins course says something similar. When addressing the question *"How important was the course description in making your decision?"*, 25 of the 35 students replies in various ways that the course desciption had a lot of influence on their choice (nine students in Origins and 16 in Forensic GeoBiology). Conversely, this result implies that for roughly one third of the students, the course description has not been of major importance in their decision making. This is perahaps surprising given the considerable effort that is often expended in making these descriptions (Christiansen, Horst, & Rump, 2013).

Discussion

Although this assessment only manages to scratch the surface of a big and complex topic, several patterns have emerged. Most profoundly, it is clear that students at NHMD (at least within the two courses investigated here) are highly driven by their own interest in the topic. When it comes to selecting courses, personal interest is considerably more important than any of the other aspects offered in the questionaire - including career prospects. It is of course encouraging for any teacher to know that most of the students showing up to his/her classes will by default have a genuine interest in the topic being taught. This fact may offer more freedom and creativity for the teacher to break into new territory and, for example, dare to attempt a higher level of research-based teaching, which is an official requirement according to the Danish University Law (Bonderup & Dolin, 2013).

In terms of proposing and designing new courses, however, this high degree of *"selection-by-interest"* observed among the students could also impose a challenge. This fact might make it difficult to generate an interest for a new course if the course title or the description does not offer a direct link to a topic the students are already interested in. To stay in zoological terms, if only a 2-3 biology students per year in Denmark are intuitively interested in reptiles and amphibians, whereas a considerable proportion tend to have a fascination for whales, it is perhaps no wonder that the course *"Herpetology"* fails miserably when being proposed, while *"Marine mammals"* becomes an instant success. In those cases, it is clear that the course has to offer something else in order to catch the attention of the students and survive.

Fortunately, this little survey has shown that there are other cards to play. *Career prospects* is a relatively highly ranked category (Figure 1.2), indicating that if the course includes the acquirement of certain skills, eventually increasing the chance of getting a job, then it has a good chance of attracting students. Again, recruiting students should obviously not be the main motivator for designing a course, rather the learning outcome should always be in sharp focus. However, the high ranking of the *Career prospects* category emphasizes that these students are thinking much in terms of applied science. Thus, if the course cannot draw much attention based on sheer default interest in the overall theme, then it might be worth focusing hard on skill acquirement in favor of more classical academic knowledge. This point also emphasizes why asking the students about the motivation at the beginning of a course is a highly valuable excercise in order to achieve a more efficient constructive alignment of learning goals and course activities (Biggs, 2011; Mørcke & Rump, 2015). Many of the biology students may not care at all about reptiles and amphibians, but the general monitoring or molecular tools, potentially being offered at such course, could easily be in high demand among professional biologists.

Moreover, courses can build up a reputation over time, as observed with *Forensic GeoBiology* which has grown steadily over the past five years, and where 60% of the students reply that they had heard about the course from fellow students. This implies that it may easily take some years for a course to gain momentum. Initially, many students may not select the course if the title or the description do not appeal to their general interests. However, if the course manages to actually run, educating batches of satisfied students, then the word will start spreading and the course can grow from year to year despite perhaps not having a the most 'catchy' name. In that

sense, it is clear that having students spreading the word is at least as important, as having produced an exciting course description. Also, it should probably not be underestimated that the type of course (i.e. summer course or regular course), the time of year, and the number of ECTS all play a role. According to the answers in the questionaires, *Forensic GeoBiology* is clearly benefitting from these aspects. Interestingly, ECTS and logistics do not score high when directly ranked by the students (Figure 1.2), but when asked to express their motivation in words rather than in numbers, 75% of the *Forensic GeoBiology* students highlighted these aspects as major points of motivation.

It is not suprising that the name of the institute hosting the course, and the teachers running it, are ranked with little importance when it comes to selecting a given course. On large institutions one cannot expect the students to know all employees, let alone their teaching and research reputation. But perhaps this result does indicate that there is some unexploited room for 'marketing' when it comes to branding the different institutes in terms of their peak competences, and which facilities and teaching opportunities that are hosted at the various departments etc.

Finally I note that these results should of course be interpreted with caution. This text is based on answers from only 35 students from a rather narrow set of disciplines within the faculty if SCIENCE at University of Copenhagen. Despite this caveat, this has been an enlightening excercise, providing insight into students motivation when they are selecting their optional courses at both B.Sc. and M.Sc. level. The observations discussed above are worth keeping in mind both when it comes to designing and 'selling' new courses but also when aligning the lectures and exercises with the expectations and motivation of the students, in order to ultimately maximize the deep learning outcome (Biggs, 2011; Mørcke & Rump, 2015).

References

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A

Spørgeskema i forbindelse med projektopgave på kurset *Universitetspædagogik* på Københavns Universitet, december 2017

v. Morten Allentoft

1) Hvilken uddanelse er du igang med og hvilket trin (f.eks. Biologi på KU, MSc)?

2) Ud fra hvilke kriterier vælger du generelt dine kurser?

Giv point fra 1 (**meget vigtigt**) til 5 (**ikke vigtigt**):

- Interesse i emnet:
- Kursets omdømme:
- Antal ECTS point:
- Logistik ift mit øvrige skema og liv:
- Karrieremuligheder:
- Hvilket institut der udbyder kurset (f.eks. Biologisk Institut eller SNM):
- Hvem der står som underviser:
- Forventet arbejdsbyrde:
- Sociale aspekter (f.eks. du kender andre, der også har valgt det):
- Evt et vigtig punkt der mangler:

3) Prøv at sætte lidt ord på følgende:

Hvad var den primære grund til at du valgte dette kursus?

Havde du hørt om dette kursus allerede inden du læste kursusbeskrivelsen, og i så fald fra hvem (medstuderende, andre undervisere etc)?

Hvor meget betød kursusbeskrivelsen for dit valg?