MOTIVES FOR CHOOSING A DOUBLE DEGREE PROGRAMME:
A CASE STUDY IN ENGINEERING AND EDUCATION

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A practitioner research project

The project is related to my assignment as Programme Director for the dual degree programme Master of Science in Engineering and in Education (Civilingenjör och lärare)
Background: Few applicants to teacher education in STEM

Estimated need of new teachers and admitted students to teacher education (2015)

Need:

Admitted:

A double degree programme: Master of Science in Engineering and in Education

- An innovative effort to increase interest in teacher education
- 5 year study programme, 300 ECTS
- Double degrees: MSc in Engineering and MSc in Education
- Collaboration with Stockholm University
- Started 2002
- 60 students admitted yearly
The programme prepares for three roles:
- Pedagogical engineer
- Teacher with the engineering perspective
- Researcher in technology and learning

Four optional specializations:
- Math and Physics
- Math and Chemistry
- Math and Information and Communication Technology (ICT)
- Math and Energy and Environmental Technology (since 2011)
Three foci for studies of this double degree programme

• Motives for choosing the programme (in retrospective, data from old exit surveys)
• Competences developed by studying the programme (49 questionnaires, 14 interviews)
• Students’ careers 2-9 years after graduation (49 questionnaires, 14 interviews)
Aim and research question

We wish to study the impact of graduated alumni from the programme, as engineers and as teachers.

Starting point: What motives once attracted our graduates to the programme?

Exit surveys have been sent out to graduates within one year after graduation. These may provide some answers.

Research question

*What motives are expressed by alumni for having chosen a double degree programme in engineering and teaching?*
Available data

• Data come from exit surveys distributed every year from 2010 to 2015.

• Some answers have been lost. Data are available from 48 respondents (18 women, 21 men, and 9 unknown gender). About 100 students graduated during the period, so the total dropout is about 50%.
Methodology

A contents analysis was performed on answers to the question ”Why did you choose the study programme Master of Science in Engineering and in Education?”

Focus on manifest as well as latent content (Graneheim & Lundman, 2004).

Codes were generated from the data. Many codes are connected to feelings, and the feelings were used to categorize the codes.

Findings

Many expressed motives based on broad personal interests or the view that the areas involved reinforce each other. This is expressed by 40 of 48 respondents (83%).

- “The width attracted”
- Interested specifically in both technology and pedagogy, or both engineering and teaching
- “I thought the combination of competencies has many synergies”
- “The combination of subject knowledge and the ability to teach”
Findings

Motives for choosing the programme often include uncertainty or fear (37 respondents, 77%):

- Uncertainty about career choices, what to do, and identity: “I did not know who I would want to be”
- Fear of being trapped in teaching
- Fear of being trapped in the lab
- "A security factor in the ability to get a job”
- "Good with a plan B”
Findings

Other motives include considerations regarding the status of the university or profession (6 respondents, 12%):

- “attracted […] by the KTH brand”
- “I wanted to be a teacher but […] the teacher training collage had quite bad reputation)”
- "I wanted to be a teacher but my environment (read community) gave me the idea that it was not to bet high enough – not fine enough”

or strategic motives (5 respondents, 10%):

- ”Double degrees for as many points tempted”

or that it was a second choice (3 respondents, 6%), not being admitted to e.g. Engineering Physics or Industrial Management.
Conclusions

• The combination of degrees/subjects appears to be well chosen:
  - matching personal combinations of interests
  - enabling synergies

• Many students express that they were attracted to the program because they were uncertain of career choices, identity or future possibilities. Fear of being trapped in one profession may concern teaching as well as the lab.

• Some mention that KTH has a good reputation, but this motive seems to be less important.