Secondary school students’ reactions to descriptions of engineering and nursing in university catalogues

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The text in a university catalogue is an expression of an educational program’s self-image

Bachelor of engineering education & nursing education compared

- 3 years
- All over the country
- Recruit from the same socio-economic group
- Gender unbalanced
All educational programs "want to be" gender balanced…

…but all have their traditions based on educational and professional discourses.

The programs are organized differently:
  prepared track – freedom of choice
  courses - projects

Similar phenomena are described by different words:
  group work – project work
  education in a work context - internships

Different aspects are emphasized
  'responsibility' 'leadership' 'stimulating'
  'advanced' 'competence' 'exciting'
Interest in people or in technology

• The program is right for you if you are outgoing and find it stimulating to meet people, and if you wish to have freedom of choice in regard to your future workplace.

• The program in computer engineering is right for you if you have a general interest in computers, or have a particular interest in programming and networks.
Qualities or skills

During the program the students will develop their ability to have good relationships with the patients and their relatives, based on an ethical approach.

Game development focuses on the technical side of game development and you will become a good programmer. Here you will learn how to use OpenGL, graphic tools, real time graphics and simulations to build realistic virtual worlds.
Reproduction or production

- Nursing care is a nurse’s independent professional field of work and includes, among other things, estimating needs, planning and conducting different interventions and evaluating the care that is given.

- The engineering program with an orientation towards product and production development aims at educating engineers who master the latest tools for highly effective construction and production
Communication

- After the program you will be a certified nurse and can work with promoting health and preventing illness, be responsible for the care of patients, contribute to and in some cases independently perform examinations and treatments, inform and instruct patients and their relatives, supervise students and staff, follow and contribute to research and development, plan your work, work in groups, lead a team and co-operate with other health personnel.

- Above all, you must be good at presenting yourself and your solutions, to be successful.
School or work

• During the whole duration of the program, theoretical studies, studies in the work context and laboratory practicals will be mixed. The theoretical studies of care include, for example, knowledge about central concepts such as health and illness, care and caregiving and what it implies to live with different ailments. This knowledge is deepened during the program.

• Project work comes in early in your education, because it is the most common work model for you as a computer engineer. Your knowledge of project work will culminate during year three, when you do a project for an external client.
Collective or individual

• As a hospital nurse you will be in demand both nationally and internationally

• You can, for example, create a profile further towards construction, materials technology or automation, but you can also read courses in design, energy technology or environmental technology. If you wish you can also supplement the education with, for example, languages, economics or law.
Does this matter for which sex will be attracted?
Questionnaire to 366 secondary school students on theoretical programs in a middle sized town and rural areas, with weak academic traditions.

Based on 4 descriptions on educational programs where subject content is removed, but the phrasing borrowed from descriptions of nursing and engineering programs.

Answer:

No, the formulations do not seem to be important in a gender perspective. If the subject matter is removed, the descriptions attract girls and boys in approximately the same numbers.

However, descriptions of nursing programs are more attractive to both girls and boys than descriptions of engineering programs.
What is important for this group of students

To get a job after graduation
  preferably a choice of different jobs
  preferably anywhere in Sweden
  preferably even abroad (girls also want to study abroad)

The town where the university is located is important
Personal development is important
Getting profound theoretical knowledge is also good
Most important

<table>
<thead>
<tr>
<th>For boys</th>
<th>For girls</th>
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<tbody>
<tr>
<td>1. Good chances to get a job after graduation</td>
<td>1. Education gives you personal development</td>
</tr>
<tr>
<td>2. Good chances to get a job anywhere in the country</td>
<td>2. Good chances to get a job after graduation</td>
</tr>
<tr>
<td>4. Education gives you good theoretical knowledge</td>
<td>4. Many elective courses</td>
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<tr>
<td>5. Education gives you personal development</td>
<td>5. The college has a good reputation</td>
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<tr>
<td></td>
<td>Education gives you good theoretical knowledge</td>
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<tr>
<td></td>
<td>Nursing 1</td>
</tr>
<tr>
<td>------------</td>
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</tr>
<tr>
<td>Girls</td>
<td>83</td>
</tr>
<tr>
<td>Boys</td>
<td>40</td>
</tr>
<tr>
<td>Unknown gender</td>
<td>3</td>
</tr>
<tr>
<td>Sum</td>
<td>126</td>
</tr>
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Girls chose nursing: 67%
Boys chose nursing: 55%
Girls chose engineering: 33%
Boys chose engineering: 45%
Why are nursing programs more attractive?

Preferred by 62% of the students

- Personal development
- For outgoing people who like to meet other people
- Study and work abroad
- Leadership and independence
What is attractive in descriptions of engineering programs?

Preferred by 38% of the students

Freedom of choice, elective courses, breadth
Ties to working life
  working with ’real problems’
  work for wage during the education
  ”your degree weighs heavily on the labour market”
Practical knowledge

Project work is definitely NOT attractive
In general

- Getting a job was the most important aspect.
  - Descriptions of jobs were important in the catalogue texts
- Social aspects and generic capacities are more important for girls than for boys:
  - Values and ethics important to learn about
  - Communication skills important to learn
  - Critical thinking important to learn
  - Good social climate on the education important
Conclusions

- Texts in university catalogues accede to and reproduce societal gender norms. The catalogue texts seem to target the same gendered group that already inhabits the education.

- While working on broadening the recruitment base to include more women, engineering education can compare itself with female-dominated educational programs and reflect on:
  - Which features that already exist in engineering programs could be stressed more in recruitment?
  - How could engineering programs be described in more varied and different ways?
  - Which aspects that do not exist on engineering programs, or exist only in a marginalized position would be attractive and beneficial to both students and future employers?