

GENERAL INFORMATION

Title	Gender equity in traditionally male-dominant subjects (information technology)
Key words	Gender equity, information technology, career opportunities
Objectives	Assuring equal study opportunities in information technology (IT) for both genders; transforming ways of thinking about IT
Phase of studies (<i>Choose all phases it applies</i>)	Access X Retain X Graduation X Transition to work-life X
Type of degree (<i>Choose all degrees it applies</i>)	Bachelor's X Graduate X Master's X
Level (<i>Choose all levels it applies</i>)	International National Institutional Faculty X Group X Individual X
Name of the institution	University of Jyväskylä
Location (<i>City and country</i>)	Jyväskylä, Finland
Target group/s	All high school and university students interested in IT careers
Stakeholders involved	Teachers, administrative staff, subject associations, ex-students (alumni), experts in the field, student ambassadors, and students at the faculty.
Description of the organisational process	The mission of faculty is to holistically integrate the perspectives of technology, information, organisations, business and people. In the recruitment phase , teams in charge of recruiting students (teachers, administrative staff and student ambassadors in the faculty) communicate studying opportunities by visiting schools and participating in student fairs and organizing other events. The holistic

mission is presented to upper secondary school students. The team questions, for example, ideas female students may have on IT as being separate from working with people. Studies on IT are presented broadly so that people, male and female, can find their own areas of interest within the human-computer interaction, which currently takes place in all sectors of society. **In the selection process**, unlike many other universities in Finland, faculty does not only look for grades in science and math studies but considers aspirants' high grades in languages and any other subjects they excel. **In the beginning of studies**, there is 6-month period during which students, males and females alike, are supported in integrating in the student community by means of various group-activities and events. **During the studies**, teachers invite ex-students (alumni) and other experts working in the IT sector to talk about their work. Both male and female representatives are selected. Both genders are also invited to present in faculty events, seminars and celebrations. Specific events such as sauna nights with faculty women (students and staff) have also been organized. The broad perspective of IT is brought up during the studies: Everyone, no matter of personal interests or gender-based preferences, can find something motivating in these studies. Instead of letting traditional gender boundaries influence their decisions, everyone is encouraged to make them based on their individual preferences. Female students are encouraged to take more part in the coding, designing and developing of IT. As additional support work, the faculty has also participated in projects such as a project for Understanding and Providing a Developmental Approach to Technology Education (UPDATE) aiming at examining why girls drop out from Technology Education at different stages of their education and create new educational practises to encourage them to continue with a technology-enhanced personal curriculum.

A. FORMAL EVALUATION CRITERIA

A1. ACCESS TO INFORMATION

Provide sources of information (URL, websites, literature, materials)

Faculty of Information Technology (in English): <https://www.jyu.fi/it/en>
 Survey results (in Finnish): <https://www.jyu.fi/it/opiskelu-ohjeet/pikaohjeet/palautteet>
 Understanding and Providing a Developmental Approach to Technology Education (UPDATE) project outcomes (in English): <https://agoracenter.jyu.fi/projects/updatex/publications>

A2. TIMEFRAME

Since when has it been in use? What is its maturity level (initial, intermediate, advanced)? Describe if there is evidence of its duration in the long run

It has been more usual to have women highly represented in the faculty since 1970', especially in the Computer Science and Information Systems department. The department of Mathematical Information Technology continues to be more male dominated. For example, having more female coders is a relatively new phenomenon. Since the definition of a broad faculty mission (approx. 5 years), more systematic work has

	<p>been made in highlighting the importance of different and complementary perspectives in IT from all individuals representing both genders.</p>
<p>A3. NUMBER OF STUDENTS <i>How many students are involved? Is the number representative considering the target group?</i></p>	<p>The Faculty mission applies to all aspirants and students. Particularly in Masters' studies, there is a relatively high percentage (around 30 %) of female students. The department of Mathematical Information Technology continues, however, to be more male dominated than Computer Science and Information Systems department.</p>
<p>A4. SCALABILITY ("volume") <i>Describe how it has been or can potentially be scaled up and practiced in a wider scale. Or, has it been or can it potentially be scaled down (e.g., from larger to smaller institutions)?</i></p>	<p>Similar practices can be scaled up or down. There may be, however, a need to better model these practices and be more systematic so as to assure the scalability. At this moment, practices are still more based on general culture and natural ways of working providing all participants with autonomy and trusting that they consider gender equity aspects in their individual practices.</p>
<p>A5. TRANSFERABILITY (from one context to another) <i>Describe how it has been or can potentially be transferred and applied to different (a) target groups, (b) institutions, and (c) societies. If possible, name also some practices that this initiative was developed from or has inspired to.</i></p>	<p>While the proportion of female students is relatively high, the proportion of female faculty teachers and research professors is still quite low. Gender equity could still be better in these groups. Some practices such as considering not only math and science subjects but also other subjects within which aspirants excel, could be transferred to other faculties, institutions and societal contexts so as to foster diversity in IT students. The same principles of valuing differences can be applied to any issues related to equity. Transferring practices to other cultural contexts may be challenging as these practices reflect societal values related to gender equity and equity in general. Due to societal and cultural contexts, many things work automatically without a need to pay excessive attention to these issues. In other cultural contexts, there may be a need for a more systematic approach to these issues.</p>
<p>A6. ASSESSMENT <i>Describe how it has been evaluated. How has it proved its relevance as the most effective way to achieve the objective? How it was successfully adopted? How it has had a positive impact on people? How the impact has been measured? Shortly describe how various forms of evaluations have been used in the assessment (A6.1 User evaluation, A6.2 Self-evaluation, A6.3 Peer evaluation, A6.4 External expert evaluation). Provide references, if possible.</i></p>	<p>There are some statistics of student access and retention which are used to evaluate the gender balance within the faculty. Also past projects such as UPDATE provided evaluation data. In addition to this, student surveys provide data. Gender-issues have not been explicitly evaluated in these surveys. Open-ended questions give, however, an opportunity to express concerns related to gender. However, no such issues have been expressed by students.</p>
<p>A7. CONTACT <i>Who can be contacted so as to seek support and networks for implementing</i></p>	<p>Eija Hatanpää (eija.hatanpaa@jyu.fi) Head of the Faculty Academic Affairs Study and degree matters of the IT Faculty</p>

the practice (name, position, e-mail)?

B. CONTENT EVALUATION CRITERIA

B1. SOCIAL JUSTICE PRINCIPLES (see Nelson & Creagh, 2013)

	Very weakly	Weakly	Well	Very well
<p>B1.1 Self-determination</p> <p><i>(how students have participated to its (a) design, (b) enactment and (c) evaluation and how they can (d) make informed decisions about the participation)</i></p>	Very weakly <input type="checkbox"/>	Weakly <input type="checkbox"/>	Well <input checked="" type="checkbox"/>	Very well <input type="checkbox"/>
<p>Students, and especially female students, are actively involved, for example, through students' subject associations.</p>				
<p>B1.2 Rights</p> <p><i>(how it is assured that all participants are treated with dignity and respect. How have their individual cultural, social and knowledge systems been recognised and valued?)</i></p>	Very weakly <input type="checkbox"/>	Weakly <input type="checkbox"/>	Well <input type="checkbox"/>	Very well <input checked="" type="checkbox"/>
<p>Approach highlighting everyone's individual traits instead of categorizing people based on their gender or other characteristics, respects everyone's rights.</p>				
<p>B1.3 Access</p> <p><i>(how it is assured that there is an active and impartial access to the resources (e.g., curriculum, learning, academic, social, cultural, support, and financial resources)</i></p>	Very weakly <input type="checkbox"/>	Weakly <input type="checkbox"/>	Well <input checked="" type="checkbox"/>	Very well <input type="checkbox"/>
<p>Access to all individuals is provided equally. Issues related to gender equity could be, however, better documented, systematized and articulated so as to assure the shared ways of working in this respect. This has not, however, been done as cultural practices seem to work well without extensive documentation or systematization.</p>				
<p>B1.4 Equity</p> <p><i>(how if it openly demystifies and decodes dominant university cultures, processes, expectations and language for differently prepared cohorts)</i></p>	Very weakly <input type="checkbox"/>	Weakly <input type="checkbox"/>	Well <input checked="" type="checkbox"/>	Very well <input type="checkbox"/>
<p>While gender equity has been well achieved, there seems to be gender-based preferences. For example, women tend to focus more on teaching, management, cognitive science and user-centeredness. There are more men focusing on coding. While breaking the traditional role divisions is encouraged, it is possible that, for example, different cultures between two faculty departments influence individual's thinking and choices.</p>				
<p>B1.5 Participation</p>	Very weakly <input type="checkbox"/>	Weakly <input type="checkbox"/>	Well <input checked="" type="checkbox"/>	Very well <input type="checkbox"/>

<p><i>(how it has led to socially inclusive practices. How does it increase students' sense of belonging and connectedness?)</i></p>	<p>Students, and especially female students, participate actively, for example, through students' subject associations. There may be, however, a need to support male students in their social relations. Women seem to have stronger social networks than male students. This can be one factor also explaining why female students often advance better in their studies than male students.</p>
<p>B2. COLLABORATION <i>Describe what kind of collaboration there is between various stakeholders.</i></p>	<p>Teachers, administrative staff, subject associations, ex-students (alumni), experts in the field, and students at the faculty collaborate closely and contribute in fostering and maintaining gender equity.</p>
<p>B3. STUDENT SATISFACTION <i>Describe the student perception of this initiative. Is there evidence of their satisfaction? (see also A6.1)</i></p>	<p>Based on student surveys, gender equity is not viewed as problematic by students. In these surveys, approximately 50% of students are satisfied with their studies in general.</p>
<p>B4. STUDENT WELLBEING <i>How does it influence on students' (a) psychological, (b) social, (c) academic, and (d) physical wellbeing? What kind of evidence there is?</i></p>	<p>Based on student surveys, approximately 50% of students are satisfied with their studies in general. When it comes to psychological and social wellbeing, based on overall observations, male students may require more support than female students.</p>
<p>C. FINAL REFLECTIONS (based on the previous description of you good practice)</p>	
<p>Success factors <i>What are the factors required for the successful implementation?</i></p>	<p>The success in gender equity requires cultural and societal support. In accordance with the Act on Equality between Women and Men (609/1986) the University has a duty to promote gender equality as an employer and as an educational institution.</p> <p>This is also a shared view at the university. It is also important that each individual at the faculty shares these views and contributes to ensuring gender equity.</p>
<p>Sustainability <i>What is needed for the practice to sustain? What resources are required? How it contributes to environmental, economic or social sustainability?</i></p>	<p>Projects related to gender-issues have enabled working with these issues in a more systematic manner. The challenge is how to sustain these practices after the project funding. When projects end, people working with these issues do not necessarily continue at the university or their job description changes, which makes continuity challenging. Many issues such as organizing events and inviting people require time and resources. Many practices described do not, however, require much resources but are more dependent on attitudes. The current tendency of increasing work efficiency may, however, obstruct working with these issues. They may be forgotten in the busyness of everyday life.</p>

Challenges

*What are the constraints identified?
How easy it is to learn and implement?*

Instead of perceiving gender issues as particularly challenging, there is a concern about both gender's level and motivation on subjects such as mathematics. Further, instead of providing equal opportunities for girls, there is a need to encourage boys to pursue studies. It is also challenging to keep the continuity in work often funded by limited project funding. In implementing these practices elsewhere, the challenge is that good practices described are yet no highly explicit and include cultural tacit knowledge and ways of working. Teachers, for example, are not pushed to work with these themes but it is trusted that they consider gender equity in their work. A more systematic model may need to be created if the practice were implemented in other contexts.

Sources

Kunttu, K. 2005. The study ability model. The Finnish Student Health Service (FSHS). (http://www.yths.fi/filebank/692-ENG_OPISKELUKYKYMALLI_pdf.pdf)

Nelson, K & Creagh T. 2013. A Good Practice Guide: Safeguarding Student Learning Engagement. Queensland University of Technology. Brisbane, Australia. (http://safeguardingstudentlearning.net/wp-content/uploads/2012/04/LTU_Good-practice-guide_eBook_20130320.pdf)