Reverse mentoring as a way to deconstruct gender related stereotypes in ICT

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International Week 2017
Overview

• Aims of the project *re-ment*
• Gender gap in IT
• Reverse mentoring in education
• The project *re-ment* – Implementation of reverse mentoring in schools in Lower Austria and Vienna
• Evaluation
• Results
• Sustainability
re-ment – a Reverse Mentoring Approach

The project aims at

• Raising the interest of female students for ICT professions
• Deconstructing gender related stereotypes in ICT
• Change of perspectives – resources oriented approach
• Change the view of technology
• Gender gap in IT
Waning Interest

23% of girls have considered an IT career, compared to 47% of boys. But age makes a difference. While 27% of girls in middle school have considered a career in technology, that drops to 18% by high school.

http://www.channelinsider.com/
WHY SHOULD WOMEN STUDY COMPUTER SCIENCE?

Computer Science

Even with an economic downturn, new Computer Science graduates are the most likely among all majors to have received a job offer.

In 2009, female professionals employed in computer fields earned a median of $1,253 weekly, compared to $887 median weekly for education or $970 median weekly in health care.

The 2013 average salary in Computer Science is $59,977, up from $57,529 in 2012, and $10-$20,000 more than other fields most women work in.

Source: New Jersey’s Science & Technology University
Reverse-mentoring is a „young“ Concept

• 1999: General Electric/Jack Welch
• Procter & Gamble, Unilever, Dell, Time Warner, Deloitte & Touch...
• Frequently implemented in organizations/HR departments

• Advantages:
  • Mentor: networks, business culture, leadership development
  • Mentee: state-of-the art expertise, individually adjusted
  • Organizations: cost-efficient further education, improvement of intergenerational collaboration, understanding for each other
Reverse Mentoring in Education
GenYes (USA)

- Students (K12) are trained to “Student Technology Leaders (STLs)”
- The aim is to support teachers or trainers in integrating IT in their classes
- This is achieved by an online helpdesk
- GenYes has been working successfully for more than 15 years
Kaiawhina (New Zealand)

- 2 projects in schools in New Zealand
- Direct, immediate support in classes by selected – IT competent – students
- Acceptance and positive evaluation by the mentees (teachers)
Reverse-Mentoring – teach your teacher!
Weitere Infos auf www.re-ment.at
DEFINITION

“Reverse-mentoring is a specific form of mentoring and refers to a reciprocal and timely stable developmental partnership between one or more less experienced mentor/s providing specific expertise and one or more experienced mentee/s who want/s to gain this knowledge. The partnership is characterized by reciprocity and mutual respect and it aims at both, the development of the mentors and the mentees. In applying a networked perspective, it may take advantage of digital technology.”
Major Steps

• October 2015 – September 2017
• Prototype implementation is funded by the Austrian government
• Four partner schools in Lower Austria and Vienna
• Evaluation
• First findings are already published
• 2 international conferences:
  • ICERI2016 – 9th annual International Conference of Education, Research and Innovation
  • ICM2017 – 13th International Conference on Mobile Learning
• Teacher trainings and teaching material
• Module for the New Upper Secondary School
Progress of re-ment in Schools

- Meeting with school coordinators
- Coaching with mentors
- Kick-Off meetings in schools (Sept/Oct 2016)
- Implementation of reverse mentoring in schools (one semester, 5 meetings on average)
- Closing meetings in schools
- Closing conference (Sept 2017)
Coaching Sessions

- Professional coaches
- Systemic-constructivist approach
- Tree of Life
- Be aware of their (ICT) strengths
- Empowerment
Kick-Off Meetings in Schools

- Matching
- Agreement on objectives
- Documentation of mentoring meetings
  - Objectives
  - Progress
  - Minutes
Implementation of Reverse Mentoring in Schools

• Mentors: young girls, aged between 16 and 17
• Mentees: parents / teachers
• In schools (max. of 8 meetings/tandem)
• Worked on ICT issues (ICT questions that arose by mentees)
  • Excel, Word, Power Point, Photoshop, Gimp…
  • File management
  • Skype, Social Networks (Facebook)
  • Mobile devices: personalisation, transferring data
• Most ICT questions were related to personal issues:
  • Pictures
  • Household budget
  • Stay in contact
  • Teaching material, online learning platforms (teachers)
DEFINITIONS

E-mentoring
“a special form of mentoring where communication takes place online, at least partly” (Stöger, 2009, p. 229)

“Reverse mentoring is an innovative way to encourage learning and facilitate cross-generational relationships.”

„The most positive outcome for us was, that web 2.0 was a catalyst for the strengthening of our professional relationship, underpinned by deeper levels of honesty, trust and respect for each other.“ (Giddens & Phillips, 2009, p. 9)
YAMMER

https://www.yammer.com/re-ment
Closing Meetings in Schools

- Tandems
  - Relationship
  - Present results
  - End the reverse mentoring process

- Evaluation Workshop

- Certificate
Opening Conference

• September 2017
• University College for Teacher Education in Lower Austria, Campus Baden
• 2 key notes:
  • Univ.-Prof. Dipl.-Inf. Dr. phil. habil. Bernhard Ertl
  • MMag. Dr. Anita Thaler
• Project results
• Tandems present their experiences
• World cafe
Evaluation

Mentors: pre/post questionnaire; Participative workshop

Mentees: guided interviews

Coaches: focus group

Coordinators: focus groups
Pre/post Questionnaire

**technological self-concept (Vincent & Jannek, 2012)**

- ICT experience
- Fascination for ICT
- Comprehension
- Creative use of ICT
- Technosis
- Utilization of ICT
- Competence
- Self-efficacy
- Attribution
- Intuitive approach
- Opinion

**social competences (Grob & Merki, 2001)**

- Empathy
- Ability to work in teams
- Assertiveness
- Ability to establish contact
- Self-confidence
- Ability to take criticism
- Coordination skills

Likert-Scale
Results – Technosis

Dealing with technology I am afraid
• to do something wrong.
• to break something.
Results – Competence

- I consider myself very competent in dealing with technical devices.
- When working with technology, I am safer than the average.
Results – Self-efficacy

- I am able to cope with technology requirements.
- I see technical difficulties calmly.
- When I am confronted with technical problems, I find ways to solve them.
Results – Attribution External

- The functioning of technology often seems to me arbitrary.
- I have no control over technical problems that occur.
Results – Intuitive Approach

- I am not afraid to try new technical devices.
- A new technical device (for example mobile phone, tablet, laptop ...) is usually tried out intuitively by me.
Results – Ability to work in Teams

- I like working with others.
- As a rule I manage to work with others.
- Teamwork and cooperation are important to me.
Results – Coordination Skills

- I am delighted to structure and organize complex tasks.
- In the case of an extensive task, I pay attention to the development of the task.
- When working in the team, I always have an overview of who has which tasks to do.
- It is important for me to meet agreed dates.
Participative Workshop

• Girls made pictures
  • Project period (begin to end)
  • Experience
Interpretation of Visual Material

Three Approaches (Przyborski & Wohlrab-Sahr 2010)

• Planimetric composition
  • Working with lines
  • Looking for borders
  • Demonstrate the structure of the picture

• Scenic choreography
  • Proportion of different picture elements
  • Analysis of each element
    • Importance of every element
    • Possibility to cross out one element

• Comparative analysis
Results

• Requirements for mentoring
  • Respect
  • Mutual understanding
  • Motivation
  • Joy

• Mentor gains individual experience
  • Tree of life is growing

• Development of personality
  • Spring – river – ocean
  • Ocean = mentors’ knowledge
  • Mentee satisfies his/her thirst of knowledge
Summary

• Reverse-Mentoring fosters the increase of the girls’ technological self-concept.

• Reverse-Mentoring contributes to change the perception of the own concept of social competence.

• Reverse-Mentoring has an effect on the mentors and mentees.
  • Social component
  • ICT
Sustainability

• Master Programme: Student’s future career choices
  • Online
  • Closing conference

• Master Programme: Mentoring
  • Face-to-face

• Seminar
  • For teachers, students and everyone teaching at our University College
  • Starts in October 2017
  • Face-to-face and online

• Open Access Online Course
  • E-learning platform (Moodle) provided by our University College
www.re-ment.at

Re-ment is a project of MOVES-Zentrum für Gender und Diversität (www.moves.cc) and the University College of Teacher Education in Lower Austria (www.phnoe.ac.at) and was subsidised by the Austrian government (bm_vit im Rahmen der 4. Ausschreibung Talente/FEMtech)
References


