Dr. Björn Fisseler

Symposium Four: New Practices

Proceedings from the Ed-ICT International Network:
Disabled students, ICT, post-compulsory education & employment:
In search of new solutions

October 16 and 17, 2018
FernUniversität in Hagen
Hagen, Germany

Content

New Practices

Funded for three years by The Leverhulme Trust, this International Network is co-organised by Jane Seale (The Open University, UK); Tali Heiman (Open University, Israel); Sheryl Burgstahler (University of Washington, US); Catherine Fichten (Dawson College, Canada) and Björn Fisseler (FernUniversität in Hagen, Germany).

The focus of the Ed-ICT International network is to explore the role that ICTs— including computers, assistive technologies, online learning, social networking sites— play or could play in causing the disadvantage or removing the disadvantage that students with disabilities in post-compulsory education experience generally and specifically in relation to social, emotional and educational outcomes.

The network will also examine the practices required of educators and other stakeholders can play to mediate successful and supportive relationships between learners with disabilities and ICT.

The Network will:

- Synthesize and compare the research evidence that is available across the five countries regarding the relationship between students with disabilities, ICTs and post-compulsory education;
- Construct theoretical explanations for why ICTs have not yet brought about the reductions in discrimination, disadvantage and exclusion that were predicted when equality and discrimination related laws were published across the five countries;
- Provide new perspectives about potential future solutions regarding how post-compulsory education institutions can better use ICTs to remove the ongoing problems of disadvantage and exclusion of students with disabilities.

In order to meet these objectives, we will hold five international symposia over the next three years with five broad themes:

- Effective models, frameworks
- Stakeholder perspectives
- New designs
- New practices
- New solutions

For each symposium, we will invite 20 local stakeholders from any or all of the following groups:

- students with disabilities
- faculty (lecturers, professors);
- professionals responsible for support services for students with disabilities (e.g. access technologists) in post-compulsory education;
- professionals responsible for faculty/staff development;
- campus information technology staff;
- digital textbook and resource publishers;
- Other individuals who work to support the academic success of students with disabilities and
- senior institutional managers.

About the symposium

The Hagen symposium followed the idea of a working-conference. There were only a few paper presentations.

A variety of experts has been invited to ensure representation among the key stakeholders such as transition specialists, technology specialists, service providers, faculty, researchers and people with disabilities. The aim of this working-conference was to identify problems or challenges during transition processes, and discuss possible solutions for both individuals and institutions.

Questions that we worked on included:

- How can technology (individual, commonly available ICT, ...) help people with disabilities with transitions in the education system?
- What are typical problems that people with disabilities experience with technology and the accessibility of technology during transitions?
- Who are the different stakeholders involved, and do we need other or different stakeholders?
- What role does technology play in the different settings of the education system?

Symposium Agenda

Day 1: 16th October 2018

8:30 - 9:00 Registration

9:00 to 9:15 Event Kick-Off

Prof. Jane Seale, PhD and Ed-ICT network leader, gives a short introduction to theme and goals of the symposium.

9:15 - 9:30 Welcoming Address

Prof. Dr. Sebastian Kubis, Vice President for Studies and Diversity, welcomes the participants to the Hagen symposium. Prof. Kubis gives a short presentation on the diversity audit process the FernUniversität in Hagen finished a year ago. He also information on what the university is doing and will be doing specifically for students with disabilities.

9:30 – 10:15 Icebreaker activity

To get to know each other, the participants form groups of two and alternately answer questions. The questions follow the idea of the Fast Friends Procedure developed and evaluated by Aron et al. (1997).

10:15 - 11:00 Research perspectives on New Practices

Dr. Björn Fisseler

11:00 - 11:20 Coffee break

11:20 - 12:30 International perspectives - Ed-ICT Network Partners

- Canada, Alice Havel
- USA, Sheryl Burgstahler
- UK, Jane Seale
- Israel, Dana Kaspi-Tsahor
- Germany, Christian Bühler

12:30 - 13:00 COMPARE / Access & Use

Detlev Fischer, DIAS GmbH

13:00 - 14:00 Lunch & Networking

14:00 - 15:30 Students & Technology - Virtual student panel

15:30 - 16:00 Summary of day 1

Jane gave a short summary of the impressions and discussion results of the first day of the symposium.

Day 2: 17th October 2018

8:30 - 9:00 **Registration**

9:00 - 10:00 **Idea Storming**

10:00 - 11:15 **Stakeholder panel discussion: Transition, Technology and People with Disabilities**

11:15 - 11:30 **Coffee break**

11:30 - 12:15 **Promising practices that address technology access and other challenges for students with disabilities in transition**

Sheryl Burgstahler, Ph. D., University of Washington / DO-IT

12:15 - 13:45 **Lunch & Networking**

13:45 - 14:45 **World Café**

14:45 - 15:00 **Coffee break**

15:00 - 15:30 **Postsecondary Students with Disabilities: How Research Informs Practice**

Catherine Fichten, Laura King, Alice Havel, and members of the Adaptech Research Network

15:30 - 16:00 **Closure & farewell**

Presentation Summaries

Introduction to the theme and goals of the symposium

By Jane Seale, The Open University, UK

Good morning everyone! My name is Jane Seale. I am a professor of education at the Open University in the UK and leader of the project called ED-ICT that has organized this two-day event. It is my pleasure to welcome you to this symposium being hosted by Bjorn Fisseler and FernUniversität. The focus of this symposium is transition, the practices that might support the transition of disabled students to and from post compulsory education. Before I introduce you to the aims of the symposium, I wanted to explain why I am speaking in German. When I was a little girl, I lived in Germany for about five years and this began my love affair with the German language. When I returned to the UK, I studied German at school but sadly I forgot it all when I left. This is the first time I have been in Germany since I left in the 1970's and I wanted to take the chance to practice my German. So, I hope you forgive me if my pronunciation is awful, but hopefully you will be able to understand me!

The ED-ICT International network consist of partners from five countries, Germany, UK, Israel, Canada and the US. You will get to hear from the partners later on today in the International Panel. The aim of the Ed-ICT International network is to explore the role that ICTs—including computers, mobile devices, assistive technologies, online learning, and social networking sites—play or could play in creating barriers and mitigating disadvantages that students with disabilities in post-compulsory education experience. It is also examining how practices of educators and other stakeholders can craft successful and supportive relationships between learners with disabilities and ICT. We are doing this by organizing a symposium in each of the 5 partner countries. For each symposium we invite a range of stakeholders including: students with disabilities; faculty and professionals responsible for faculty/staff development; professionals responsible for support services for students with disabilities; campus information technology staff; digital textbook and resource publishers; and senior institutional administrators.

The ED-ICT Network has three objectives:

Firstly, to synthesize and compare the available research evidence across the five countries regarding the relationship between students with disabilities, ICTs and post-compulsory education;

Secondly to Construct theoretical explanations for why ICTs have not achieved the dramatic reductions in discrimination, disadvantage and exclusion hoped for when equality and discrimination related laws were published across the five countries;

Thirdly to Provide new perspectives about potential future solutions regarding how post-compulsory education institutions can better use ICTs to remove the ongoing problems of disadvantage and exclusion of students with disabilities.

In order to meet these objectives, we have been focusing on five main themes: Effective models and frameworks, New perspectives, New designs, Effective practices and New solutions.

The focus of this symposium in Hagen is transition. The kinds of questions we are interested in exploring with you over two days are:

- How can technology help disabled students with transitions in the education system?
- What are typical problems that disabled students experience with technology and the accessibility of technology during transitions?
- Who are the different stakeholders involved, and do we need other or different stakeholders?
- What role does technology play in the different settings of the education system?

In considering the potential answers to these questions I want to encourage you to adopt a critical approach. By this I mean that we need to question those things that are ‘taken-for granted’ as truth or fact in the field in order to give voice to new possibilities and future directions in both our research and our practice. OK, now it is time for me to hand over to our hosts. I hope you enjoy the two days, but also that it challenges you in some way.

New Practices: What individual and institutional practices can support the transition to and from PCE and from PCE to employment?

By Björn Fisseler, FernUniversität in Hagen, Germany

Note: This is a shortened version of the article prepared for the Hagen symposium. The full version is available on the Ed-ICT website.

The goal of the fourth symposium, held in Hagen, is to identify, criticize, discuss, and develop ideas for effective practices on the question: What individual and institutional practices can support the transition to and from PCE and from PCE to employment?

This question is a broad one, as it leaves much to everybody's imagination what might be important, what is already there, and what should be developed and implemented. To make things easier for the reader – but also for me as the author – I will try answer to the following sub-questions:

- What practices of designing transition for people with disabilities can be observed, and how successful are these practices?
- What are models and considerations that underlie these practices?
- What is the role of technology for successful transition, and how does the role of technology change?

Nancy Schlossberg's Transition Theory (Evans, Forney, Guido, Patton, & Renn, 2010) defines transition as "any event or non-event that results in change relationships, rou-tines, assumptions, and roles". An event can either be anticipated, for example apply-ing for college and attending college, or unanticipated, e.g. when your medical condi-tion gets worse before actually attending college; a non-event is an event that is anticipated, but doesn't occur. Schlossberg further looks at the context of the transition, and at the level of impact the transition makes on the individual's life and the lives of other persons indirectly involved. The question is, what does this have to do with technology and new practices?

How an individual is coping with transition revolves around the elements of the 4S model: situation, self, support, and strategies. Professionals can work on and with these four elements in order to help the individual with transition. E.g. when a student with a disability moves into post-compulsory education, that could mean for example:

- Situation: How does the role of the student change, e.g. in relation to taking care of assistive technology or learning about new technologies? What are cur-rent sources of stress and what does technology have to do with this?
- Self: Personal and demographic characteristics affect how an individual views life as well as her or his current situation. Developing "self-resources" like self-determination or self-advocacy might help to cope with transition.
- Social support: The more social support an individual gets, the better the transi-tion can be cope with. This means for example assessing the institutions and stakeholders that can provide support for certain technical problems.
- Strategies: These might (1) modify the situation, (2) control the meaning of the problem, or (3) aid in managing the stress in the aftermath.

Technology can be seen as a potential resource that helps in coping with a transition, thus consultants can take the 4S as a model to integrate technology into the transition process and use it for a positive outcome. On the other hand, technology

can also be a barrier, in which case the 4S-model can help in assessing the situation and identifying possible support and strategies.

Madaus, Banerjee, & Merchant (2011) argue, that “technology skills are a critical component of preparation for a knowledge-based, digital society” (p. 578). In the past, that meant for people with disabilities to focus on learning how to operate and work with their personal assistive technology. But todays reality is far more complex, as for example in higher education all students “need technology to participate in the learning process, engage in social networking, expand their knowledge base and understanding, and extend their individual capabilities as learners” (p. 578).

For students with disabilities transitioning to college the focus is on assistive technology (AT). But Madaus, Banerjee, & Merchant (2011) state that “AT alone is no longer sufficient, fluency with broader learning technologies is now an essential element of college survival”.

Parker & Banerjee (2007) found that students with disabilities are far less comfortable with general learning technologies, and also less fluent in technology skills. Therefore, students who want to pursue post-compulsory education should receive assessment and training in the use of various learning technologies.

Technology has at least two roles in preparing students for PCE:

1. Technology can be an enabler, and support students in getting more independent learners. This is the case, for example, for software that helps students to organize their learning, to take notes, and in general to support them in their learning experience. Coordinating accommodations can also mean to teach students how to use certain assistive technologies for learning, but also how to deal with non-optimal solutions, e.g. when services in PCE are sub-optimal.
2. But technology can also be a barrier, when the technology students are expected to use in PCE is absolutely in-accessible for students with disabilities, and there are no services and reasonable accommodations available to students helping them with such situations.

Lindsay et al. (2018) tried to identify best practices and components of post-secondary transition programs for students with disabilities. All of the programs they included in their review reported an improvement in one of three components: post-secondary enrollment, self-determination, and transition skills. They highlight several results of their review:

- Different types of transition programs can be used to positively influence transition outcomes. These programs can instructor-led and group-based, or self-direct in various settings including online.
- Also, the format of successful programs varies, e.g. the can include curriculum, online, self-directed or multi-component based.

Young people with disabilities often have fewer opportunities to develop self-determination skills. Improving self-determination, self-efficacy, and other skills related to transition are therefore important, as these skills are associated with graduation and academic outcomes.

The concept of self-determination and self-advocacy is central to many concepts especially in North America, and many researchers see it at the heart of successful transition for students with disabilities (Skinner, 1998; Korbel, McGuire, et al., 2011; Roberts, Ju, & Zhang, 2014; Stamp, Banerjee, & Brown, 2014). Often enough, the

students who lack self-esteem and confidence because they are dependent on others don't apply for PCE (Reed & Curtis, 2011, p. 554).

The main objective of this address is to provide some ideas and input about what to consider during the discussions and presentations of the fourth Ed-ICT symposium on the topic of new practices. While there is a lot of literature especially on the subject of transition to post-compulsory or post-secondary education, there are still open questions:

- What importance do digital media have in secondary education, post-compulsory education, and in employment?
- Transitioning from secondary to post-compulsory education can be supported through corresponding transition plans. How should technology be integrated into these plans?
- What does digital literacy mean? How can it be integrated in the curriculum and/or job training?
- If technology is part of the problem, can it also be part of the solution? E.g. by delivering an web-based training on digital literacy? Would there be one training for all, or would it have to be specific for different types of impairment?
- What are specific barriers of transitioning to employment?

There is enough to think about during the two-day symposium, and I hope that we will come up with some new questions, some new ideas, and also some new solutions for new practices.

COMPARE / Access & Use

Detlev Fischer, DIAS GmbH

- COMPARE
  - COMPARE compares accessibility ratings for web content
  - COMPARE is an Erasmus + Strategic Partnership project with DIAS (DE), Funka (SE) and BrailleNet (FR)
  - Accessibility testers, as well as users, are invited to enter web content cases, ratings or usability tests into a wiki-based directory, the COMPARE repository: https://compare.accessiweb.org/
  - The COMPARE Access & Use module shows common usability problems for people with disabilities, referencing the cases: https://accessuse.eu/en
  - The COMPARE idea: Create a place where evaluators and developers can document specific cases and reconcile ratings, moving towards consensus
- Access & Use: a self-learning module
  - cover important interactive components (dialogs, pop-up menus, tab lists, etc.)
  - Provide core recommendations for accessible implementation
  - Show user problems clearly (with videos)
  - link to the COMPARE repository
  - refer to good sources for implementation

Promising practices that address technology access and other challenges for students with disabilities in transition

Sheryl Burgstahler, University of Washington / DO-IT

- DO-IT goal: To increase the success of individuals with disabilities in postsecondary education & careers, using technology as an empowering tool.
- Evidence-based transition support practices for women & racial/ethnic minorities
    - Summer academic/bridge enrichment programs
    - Mentor, peer support
    - Academic, career awareness/advising & networking
    - Skills-building programs (e.g., ICT, study)
    - Work-based learning (e.g., Internships)
    - Research experiences
    - Combinations are most effective
- DO-IT Highlights
    - Faculty interaction
    - Training on design of accessible websites
    - Informal science accessibility reviews
    - Including student perspectives in publications
- DO-IT participants gain:
    - Sense of belonging (both academic & social integration)
    - Involvement (in academic & social life)
    - Sense of purpose (through internships, workshops, networking, mentoring, …)
    - Self-determination skills (skill building, practice)

Postsecondary Students with Disabilities: How Research Informs Practice

Catherine Fichten, Laura King, Alice Havel, and members of the Adaptech Research Network

- Adaptech Research Network, focusses on
  - College/university students & grads with disabilities
  - Information and communication technologies
  - Free or inexpensive assistive technologies
- Enrollment of sudents with disabilities
  - Self-reported disability: 11%-17% of students
  - ≈ 2/3 not registered for campus disability services
  - ≈ 50% have multiple disabilities
- Students with/without disabilities graduate at the same rate
  - Higher graduation rate of students with disabilities (not significant)
  - Students with disabilities take an extra term
- ICT used by students with learning disabilities
  - Students often use software not recommended by experts
  - Vice versa, experts often recommend software that students don't actually use
- Barriers students faced in using technology
  - Prohibitive cost (>$1000) of adaptive technologies
  - Lack of knowledge of available products
  - Inadequate opportunities to try products before purchasing
  - Lack of information about where to purchase products

Panel Summaries

International Panel

The international panel illustrated the issues students with disabilities experience during transition situations, but also experiences with promising practices. The presentations are available online on the Ed-ICT Network's website (http://ed-ict.com/workshops/hagen/programme/).

Canada

- Primary & Secondary
  - School board purchased technology
  - School loaned technology
  - Ministry approved technology
  - Minimal training
- Postsecondary / Tertiary
  - Student provides device
  - Institution loans software
  - Needs-based accommodation
  - Assistive technologist
- Rehabilitation
  - Government approved list
  - One time purchase
  - Only for some disabilities
  - Training integrated
- Work
  - Multiple funding sources

    - Adapted work stations
    - Work related software
    - No training

USA

- Transition challenges
    - diminished support systems after high school
    - little access to successful role models
    - inadequate self-advocacy skills
    - lack of or ineffective accommodations
    - low expectations on the part of people with whom they interact
    - inadequate access to ICT—mainstream & assistive technology (AT)—that could increase independence, producitivity, and participation
- ICT challenges
    - Support takes place at specific institutions
    - Most efforts are for secure AT for individuals, not on universal/inclusive design of mainstream ICT
    - No adequate training & support for stakeholders
    - Funding for AT and other ICT varies
- Conclusion
    - Employees & students at all levels should have access to the AT & support they need.
    - All ICT should be accessible to people with disabilities

UK

- Transition practices and experiences
    - At a national level practice is driven by legislation not evidence
    - Legislation and related policy influence what happens in each sector-but there is nothing to mandate how transition between sectors should be managed
    - When disabled students leave school, they have to apply for equipment
    - In university, most students will be supported with equipment, but there is no guarantee that any adjustments made will be continued when employed
    - No research into transition for students with disabilities
- Transition practices at the Open University
    - When entering the university, students can disclose their disabilities
    - Challenges: not all students disclose, or students don't follow up or answer phone calls
    - Tools integrated into the OU website prompt students to think about their study choices, for example how they will fit study into their lives
    - These tools also provide information about the accessibility of study and reminders about
- Transition to employment
    - We say to students is that if a strategy or support from a certain type of technology worked for them in their study, then this could also be applicable to the workplace
    - We are also careful to signpost students to voluntary sector organisations which have expertise in supporting those with specific disabilities in all aspects of life transition

Israel

- What practices are used to support the transition of people with disabilities?
  - Several accessibility laws and regulations in Israel
  - Before entering post-compulsory education, all students have to do a psychometric entrance test
  - Higher education institutions are required be fully accessible
  - When moving from post-compulsory education to employment…
    - Employers shall not discriminate against applicants because of their disabilities
    - The state shall participate in the costs of all adjustments made for employees with disabilities
  - Collaboration with the National Insurance Institute
  - Professional Career Unit available at post-compulsory institutes
- What are challenges related to technology?
  - Vocational training
  - Technology training
  - Localization of ICT to Hebrew
  - Priorities

Germany

- Transition process is a joint responsibility of
  - The individual
  - The institution (educational or vocational)
  - The support mechanisms
  - Can be seconded by peer counselling
- Higher education institutions
  - Are obliged to provide equal access
  - In practice
    - Representative for students with disabilities
    - Psychological advice, support services, accommodation services
    - Individual negotiations with lectures
    - Compensation for disability related disadvantages
- Post-compulsory education to employment
  - Supporting agencies: Federal Labor Agency, Inclusion Agency
  - Different online platforms
- Challenges related to technology
  - Access to mainstream information and communication, to physical environment, and public transportation
  - Individual set of assistive technologies
  - Often inaccessible documents, software, and platforms
  - Often proprietary software which is not accessible

Virtual Student Panel

The FernUniversität in Hagen is a distance teaching university; therefore, getting students with disabilities to participate in the symposium was difficult. We finally managed to interview two former students, one female (F) and one male student (M), recorded the interviews on video, and showed the videos during the symposium.

What technology do students use?

- M
  - Computer with screen reader and braille terminal
  - Smartphone with screenreader software
- F
  - Computer
  - Smartphone

How did they learn how to use the technology?

- M
  - Teachers in secondary school taught how to use the computer and assistive technology
  - Continuous process
  - Today, a personal assistant helps him learn how to use new technology
- F
  - In university, students often learn how to use technology in contact with fellow students, through trial-and-error, and partly dedicated trainings
  - Peer-support for learning how to use new technologies

What changed for them in terms of technology when they began studying?

- M

    - Technology has always been important
    - Internet has been a huge plus, with the possibility to get in contact with other people and exchange information
    - Internet also important in terms of getting in contact with professors and other students
- F
    - Internet has been on the verge of becoming popular
    - Library technology and subject-specific technology was hard to learn, similar to other freshmen

What were typical problems regarding technology and accessibility did they experience?

- M
    - Inaccessible websites are a problem
    - Employers often have no idea about accessibility and special technologies for people with disabilities
- F
    - 20 years ago, technologies for people with disabilities weren't very advanced, often stationary, and complicated to use
    - Today, it depends very much on the individual needs and the need for technological support
    - Still room for improvement, as it's hard to meet many seemingly divergent requirements
    - Technology in higher education is an interplay between at least three stakeholders: the instution and its staff members, the students, and also the developers of the technology
    - Combination of peer-support and institutional support needed to cover the demand of technology training

How can or could technology support the transition processes?

- M
    - Higher education institutions can help to inform about accessibility
    - University as a connector between study and employment
    - Raise awareness about the possibilities technology represents for people with disabilities
- F
    - Technology makes it easier to get in contact with other people
    - Professional networks can bring together employers and employees
    - Technological knowledge is not a question of disability; all people differ in their individual knowledge of how to use technology and their needs for training

Stakeholder Panel Discussion

Traditionally, the stakeholder panel discussion gives room to a variety of stakeholders. While students were represented in the virtual student panel (see above), the participants of this stakeholder panel discussion came from the field of post-compulsory institutions as well as institutions helping people with disabilities during their education.

Questions we discussed were:

- What is your or your institution's role with regard to technology?
- What kind of technology do people with disabilities use in your institution/from your experience?
- What changes for people with disabilities in terms of technology when they come to your institution/from your experience? (For example, the types of technology they need to use, or the role that technology plays in supporting their learning)
- What are the typical problems with technology & accessibility of technology that people with disabilities experience at your institution/from your experience?
- How can technology support transition processes within PCE and/or from PCE to the job?

The following stakeholders engaged in the discussion.

Isabel Zorn

Isabel Zorn is professor at the Institut für Medienforschung und Medienpädagogik (Institute for Media Research and Media Education) at the TH Köln/University of Applied Sciences.

Steffen Puhl

Steffen Puhl works as the "Coordinator Barrier-Free Study Information Systems" at the Justus Liebig University (JLU) Gießen.

Michael Große-Drenkpohl

Since 2002, Michael Große-Drenkpohl is the contact person for the specialist service for visually impaired people at the LWL Inclusion Office in Westphalia.

Chetz Colwell

Chetz works as a Senior Learning & Teaching Development Manager at the OU and supports her colleagues in making their materials accessible to students with disabilities.

Idea Storming

The idea for this activity came from an article by David E. Houchins, who used the Delphi method to identify technology topics related to secondary and post-compulsory transition issues. Themes that emerged from the original study are professional knowledge, improving self-determination, using best transition practices when using assistive technology, and establishing a technology infrastructure to support transition Houchins, 2001). The questions from the original study were used and supplemented by an additional question for a replication of Houchins' study. The participants, who sat at the same table, worked together on one of the five questions. The results of this one round delphy are presented below.

Houchins, D. E. (2001). Assistive Technology Barriers and Facilitators During Secondary and Post-secondary Transitions. *Career Development for Exceptional Individuals*, 24(1), 73–88. https://doi.org/10.1177/088572880102400106

Delphi question #1

Please indicate, and describe if necessary, at least five issues or practices which affect the technology needs of individuals with disabilities that are most challenging and hindering their progress as they transition from secondary education to a post-compulsory institution.

- Students must know what they need
- Students must ask for what they need early – often delays
- IT needs is on top of many other transition issues (housing, assistance, orientation, …)
- Limitations regarding staff support as so many students arrive at the beginning of a term.

- Laws regarding accessible IT not fully implemented
- Lack of effective coordination/cooperation between responsible bodies (within institution & with outside agencies)
- Students in special schools (e.g., for students who are blind) face specific transition issues when entering integrated settings

Delphi question #2

Please indicate, and describe if necessary, at least five issues or practices which have been most effective in meeting the technology needs of individuals with disabilities as they transition from secondary education to a post-compulsory institution.

Currently

- Individual
  - Seeks tools
  - Gets training about tool
  - Invests lots of time
- Institution
  - ▯ Hardly tools
  - ▯ Hardly training for teachers
  - 😀 Invite high-school students -> explain expectations
  - 😀 Shows tech to students
  - 😀 360° counseling – no tech

Needs

- Individual
  - Training for university skills
  - Guidance
- Institution
  - Specification of university skills
  - Tech innovator position at university
  - Money
  - Description of course tech required
  - Didactics/behavior for teachers
  - Tech-counseling institutionalized
  - Tech-ed for teachers

Delphi question #3

Please indicate, and describe if necessary, at least five issues or practices which affect the technology needs of individuals with disabilities that are most challenging and hindering their progress as they transition from a postsecondary institution to employment.

- Finding a job
- Transportation to the job
- Physical barriers at job
- Ads & applications & interview for job not accessible
- Incompatibility between access technology and company software
- Lack of access technologists to provide support
- Inaccessibility of campus employment websites
- Ergonomic workstations not provided
- Inaccessible ways of communicating with employees
- Complex language use
- Environment
    - Too noisey for hearing
    - Too hectic to focus on work
- Lack of technology for hearing loss/impairment
- Problems
    - Finding job
    - Getting to job & around workplace
    - Hardware/software compatibility & adaptive tech.
    - Job environment itself
    - Communication

Delphi question #4

Please indicate, and describe if necessary, at least five issues or practices which have been most effective in meeting the technology needs of individuals with disabilities as they transition from post-secondary education to employment.

1. Career service in the college environment
   - internship matching
2. Accessible job matching & application process
3. Transfer of AT from education to employment
   - Cost
   - Accessibility
   - Compatibility
   - Support
4. Examples of work-place adaptations
   - inform

Delphi question #5

Please indicate, and describe if necessary, at least five issues or practices which affect the technology needs of individuals with disabilities that are most challenging and hindering their progress as they transition within a post-compulsory institution.

Most challenging

- Many platforms
- Awareness of professors
- Different subjects
- Technology changes all the time
- Time/extra work
- One challenge is money
    - Depends on disability
    - Depends on institution
- Own devices often not allowed -> mobile technologies/policies
- Expectation that technology is known

World Café

Participants were asked to read and write their responses and reactions to five questions related to the symposium's topic. The participants worked for 20 minutes at the start table, scribbled down their ideas and comments, and then worked on another topic at another table. There was a total of three rounds, during which the participants had the opportunity to discuss, interact, think, and reflect. Questions focused on the topic of ICT and transition, e.g. what an inclusive technology curriculum look like or what post-compulsory institutions should do to support the transition of students with disabilities.

Question #1: What could an inclusive technology curriculum in post-compulsory education look like?

- Encouraging: a problem-solving mindset so not afraid to try any technology, AT or mainstream
- Don't just teach about technology, teach about disabilities, too
- Communication methods between students and lecturers and administrative staff
- Tools must be accessible (lke LMS, polling, library, lecturer capture, registration), because we expect stuff to be accessible
- Teach the professors pedagogy
- Judge on teaching ability, not just subject matter expertise
- Understanding accessibility and disability should be part of the curriculum for everyone
- Financial aspects

- Methods for students with disabilities to use successfully PowerPoint presentation with the help of new technology
- Enabeling pedagogy (Ermöglichungsdidaktik) -> Exploratory learning -> but well supported by instruction
- Help students build “their own” learning materials
- Cover non-digital technology (e.g. elevators, artificial limbs, self-driving vehicles, street lights)
- Curriculum should contain the subject of working with the mainstream technology using their AT
- Every course teaches one keyboard shortcut
- Students should learn which alternative AT they could use, and in what situation technology is not a solution
- Content should be open (file standards and copyrights)
- Why curriculum and not pedagogy as well?
    - -> curriculum as manifestation of pedagogic concept – the one builds up on the other
    - Why not! Should be combined -> both offline and online education would be possible
- Who is it for? Students and/or faculty/admin?

Question #2: How should students with disabilities prepare for post-compulsory education?

- Continuity of information (sharing) between high school & higher education
- Online self-assessment of personal strength, weaknesses, etc. before starting postsec.
- Option of enrolling in (optional) course to acquire skills lacking
- Go to “open house” – visit the university
- Specific introductory week (orientation) for those that self-identified as a student with disability
- Go to university counsellor before semester begins to arrange for services and accommodations
- [otherwise may loose 1st semester & learning group]
- Should start early – a process
- Speak to current/former students
- Learn about their rights and how to speak their legal wishes
- Get good grades
- Acquire skills to join & participate into group work
- Ask for financing & ICT
- Counsellor from dept. services for the blind (or=) to accompany them through transition
- Student to take ICT training before higher education -> where?
- Cooperation between compulsory and post-compulsory institutions and both that support
- Early childhood education built-in

Question #3: How can post-compulsory institutions support the transition of students with disabilities?

- Change their key performance indicators to include activities based on transition, e.g. no. of disabled students supported into employement
- Map of employers who employ disabled people (as per OER world map)
- Virtual reality -> future research agenda / uni-simulator + employer
- DO-IT scholars model – has evidence base
- Carrer psychologists
- Build a community online to connect:
    - Students to students
    - Teachers to teachers
    - Students to teachers
    - Employers to employers
- Self-diagnostic test “Am I ready?”
- Support for finding internship & educating employer about disability
- Higher education -> they do NOT support students in transition from school -> university # reply: This is not an answer
- One-stop shop for educational and career advice inclusive of disabled students
- Career service have focus on needs and support for disabled students
- Embracing failure!
- It is the responsibility of everyone (all levels) in the career services
- Providing AT + training
- Curriculum for persons who become teachers for disabled students should be broadened with respect to AT
- Sheryl: “No-one owns the transition space”
- Developing resilience for all of us! -> resilience is built on failures as well as successes -> won’t be afraid to try & sometimes fail
- Classes for school students re: expectations of uni, + AT, + sign language, etc.
- Embrace a Universal Design paradigm
- It is part of career services roles
- Shortclips and videos about the education program

Question #4: What is digital literacy for the 21st century?

- Definition?
  - Basic competencies are needed
  - Critical use
  - Ability to use digital technology to achieve education goals
- Knowing how to change software
- Understand effects of tech for learning
- Social media
  - Work
  - Private life
- Start in early childhood
- Different in different countries
- The more digital techs students learn, the more prepared they will be to learn other digital techs
- Begin supported to develop digital social capital & digital cultural capital
- Understand power-hierarchies mediated by tech -> lack of certain technologies (China)
- Literacies
  - General
  - History
  - -> important
- 4C 21st century skills
- Affordability
- Accessibility
- Constant update your knowledge
- Ability to use WhatsApp, Twitter, Snapchat, Instagram, Messenger
- Infrastructure & devices
- The web as all-engulfing medium
- Dominance/control digital media
- Data literacy
- Communication switch off

Addendum

- OER?
- Code for all
  - Yes! Improve the open-source community
  - Everyone in the world can code (badly)
  - Learn to use tools properly, e.g. styles in MS Word
- Understanding and interpreting raw data
- Background/behind the scenes
- Every country has its own meaning
- Black mirror
- Connect with tech people
- The social effects
- Who teaches this stuff anyway?
- Critical evaluation skills
- Working with and understanding the importance of metadata

Question #5: What should technology look like in order to support the transition of students within post-compulsory education?

- Tools should be platform-agnostic
- Platform independent
- Compatible with university, school & employer's technical infrastructure
- Online, personal, video support
- Foundational tech such as operating systems, LMS, etc must be accessible
- User friendly tech
- Beautiful (= [means what]?)
- = UD, easy, intuitive, compatible, accessible
- Mainstream UD adaptable
- Accessible
- UD/UDL
- Content-sensitive
- Context-sensitive
- Mainstream UD
- Adaptable
- One system (single sign on, …) -> YES!!!
- Easy to learn
- Easy, intuitive, standards driven, transparent
- Small, compact + simple
- Growing with experience and requirement

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