Future Skills

The future of learning and higher education

The Future Skills Report
  International Delphi Survey

Annex B – Questionnaire Round 1

03/2019

Disclaimer

The Future Skills Report presents information and data that were compiled and/ or collected through a research team from Baden-Wurttemberg Cooperative State University in Karlsruhe, Germany. This document entails Annex B of the Delphi study.

This work is published under the responsibility of
Prof. Ulf-Daniel Ehlers – www.ulf-ehlers.net
Baden Wurttemberg-Cooperative State University – www.dhbw-karlsruhe.de
Karlsruhe/ Germany
ulf-daniel.ehlers@dhbw-karlsruhe.de

in cooperation with
Sarah A. Kellermann

Information about the Project
This Delphi Survey is part of the Research Initiative on "Future Skills – Future Learning and Future Higher Education", which started in 2015. It includes research on learning and change on organizations pathways to the future, their conceptions of the future workplace and the definitions of futures skills and involves data- and methodological triangulation in three separate modules building on each other.

Module A: Analysis of future organizations competence and skill development concepts through expert ratings from a sample from more than 120 business and public organizations in order to identify advanced future organizations (2015-2017).

Module B: In-depth interview series with more than 20 HR-, change- and business experts as well as students on future skills, future learning and future higher education from 17 different future organizations (2017-2018).

Module C: Delphi Survey on future skills, and drivers and scenarios for future learning and future higher education (2018-2019).

Get more information on the projects here:
www.next-education.org – Information on the research group and related projects
www.nextskills.org – Information about the Future Skills Project

Annex B

Delphi Survey on "Future Skills – Future Learning – Future Higher Education"

Introduction

Dear Expert!

Thank you very much for your participation in the Delphi Study on "Future Skills – The Future of Learning and of Higher Education". The study is part of a larger research process and follows an in-depth interview analysis asking leaders from the world of work about skill demands of future graduates and employees. Through the Delphi Study we wish to elicit the likelihood for different scenarios about the organization of higher education in the future, about important skills for future graduates, and about learning design & study experiences of future higher education from a student's perspective.

There will be two rounds in the Delphi study:

Round 1 is asking you about your assessment on scenarios and statements about future skills, studying & learning and higher education in the future. In addition - for each statement - you have the opportunity to comment and reformulate the statement, so that it better fits your view on the matter. This will take place from 7th of September until 17th of September online. The results will be compiled into a refined set of statements and scenarios. These will be the basis for the round 2.

Round 2 will be focusing on the pace of change, asking your assessment about the 'time-to-adoption' for the scenarios and statements. Round 2 will take place from October 5th until October 15th online.

Each round will take about 15 minutes of your time, depending on the intensity of your engagement. We will ask you to enter your email and contact information in the end, so that we can invite you for round 2. However, your answers and information given will be kept with highest confidentiality and just for the purpose of this study.

In case of your agreement your name, job title and institution will be included in the final publication in acknowledgement of your participation to this Delphi study.

Future Skills – The Future of Learning and Higher Education
International Delphi Survey

Delphi Survey on "Future Skills – Future Learning – Future Higher Education"

Round 1 of the Delphi Survey: Part 1

In this first part of the Delphi we would like to engage with you into an exercise of envisioning the future development of higher education, and thinking about different possible scenarios. There are two steps to this:

Step 1: Here we would like to know your opinion about the driving factors for changes in higher education, and
Step 2: Here we would like to know your view on four scenarios about higher education of the future.

Thank you again for supporting the Delphi Survey on "Future Skills - The Future of Learning and Higher Education"!

Future Skills – The Future of Learning and Higher Education
International Delphi Survey

Delphi Survey on "Future Skills – Future Learning – Future Higher Education"

Part I: Scenarios for the future of higher education

Step 1: Driving factors

An analysis of research literature on changes in higher education reveals many important factors which influence higher education development, amongst them policy priorities, national and international legislation, resources and financing of higher education systems, changed skill demand from the world of work, changing demographics, digitalization and the knowledge society. Based on an analysis of these underlying drivers of change in which higher education is situated in Europe (and globally) we derived the following <u>key consequences</u> for the purpose of this Delphi study which are central to how higher education institutions will operate in the future.

Please state your level of agreement and give your opinion on the key consequences presented below.

After stating your level of agreement, a commentary box will be presented where you can provide an improved version of the statement in case you want to refine it or add some comments.

Consequence 1: A new focus on future skills will radically change the current higher education definition of graduate attributes.

Description: The current focus in higher education on academic and valid knowledge (learning as a means to correct answers for known questions, curriculum focused on defined skills for fixed professions) will be replaced thorough a "next mode" of studying: Learning through applying & reflecting knowledge, creatively developing new knowledge, and innovating methods while applying knowledge, focus on future skills will increase (please note: Future skills are defined in part 2 of the Delphi below).

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
◯	◯	◯	◯	◯

In case of disagreement please state here an improved version of the statement or enter your comment(s).

[ ]

Future Skills – The Future of Learning and Higher Education
International Delphi Survey

Delphi Survey on "Future Skills – Future Learning – Future Higher Education"

Part I: Scenarios for future higher education

Step 2: Scenarios for future higher education

We have taken these four consequences and turned them into four (mutually not exclusive!) scenarios from a student's perspective in which the degree of intensity of each of the four key consequences varies. Here is an overview:

Overview on the four scenarios

Key Consequences	Scenario: Today	Scenario: Future 1	Scenario: Future 2	Scenario: Future 3	Scenario: Future 4
Future Skills	Low intensity	High intensity	High intensity	High intensity	High intensity
Multi-Institutional	Low intensity	Low intensity	High intensity	High intensity	High intensity
Personalization	Low intensity	Low intensity	Low intensity	High intensity	High intensity
Lifelong	Low intensity	Low intensity	Low intensity	Low intensity	High intensity

Please tell us a) the level of your agreement with each scenario and optionally b) state your comments below each scenario.

Scenario today:

Higher education is generally institutionally bound – students enroll in the institution in which they later also graduate from, usually directly after leaving high-school. They study with given pre-defined curricula and content in order to achieve pre-described competences (learning outcomes) which are related to/ derived from a system of fixed professions. Study programs are rooted in academic disciplines & schools of the current academic system.

Future Skills – The Future of Learning and Higher Education
International Delphi Survey

Consequence 2: Higher education will become a multi-institutional study experience.

Description: The provision of higher education will in tendency move from a 'one-institution' model to a 'multi-institution' model in which higher education will in tendency be provided through alliances of several institutions.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
○	○	○	○	○

In case of disagreement please state here an improved version of the statement or enter your comment(s).

Consequence 3: Students will build their own personalised curriculum in collaboration with educational professionals.

Description: The elements of choice in academic programs will dramatically enlarge. The curriculum of academic programs will move from a predefined and 'up-front' given structure to a personalized and participatory model in which students actively participate and collaborate with educational professionals in curriculum building of their higher education program.

Strongly disagree	Agree	Neither agree nor disagree	Agree	Strongly agree
○	○	○	○	○

In case of disagreement please state here an improved version of the statement or enter your comment(s).

Consequence 4: Lifelong higher learning will become as important as (the current) "up front" mode higher education

Description: The current "preparatory model" in which higher education prepares (up front) for a profession will in the future be equally balanced with higher lifelong learning.

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
○	○	○	○	○

In case of disagreement please state here an improved version of the statement or enter your comment(s).

Future Skills – The Future of Learning and Higher Education
International Delphi Survey

Future Scenario 1: Focus on future skills

Future higher education will be organized around the main objective to enable the development of graduates' future skills: e.g. complex problem solving, dealing with uncertainty or developing a sense of responsibility. The current focus on preparing students through defined, knowledge oriented curricular for fixed professions will lose importance. Students will focus on reflecting experiences made while applying and creatively developing new knowledge, as well as innovating known academic methods. Main point of orientation is developing skills for acting successful in future unknown contexts in their field of profession.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
○	○	○	○	○

In case of disagreement please state here an improved version of the statement or enter your comment(s).

Future Scenario 2: Multi-institutional

In addition to scenario 1, the provision of academic programs will not be bound to one single institution any longer. 'Digital import' and 'digital export' of parts of the curriculum will play a significant role. Academic programs will be provided by several institutions, and institutional boundaries will dissolve progressively. A specialization of academic providers will take place with institutions specializing in certification while others are focusing on delivery & learning.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
○	○	○	○	○

In case of disagreement please state here an improved version of the statement or enter your comment(s).

Future Skills – The Future of Learning and Higher Education

International Delphi Survey

Future Scenario 3: Personalized

In addition to scenario 2, the degree of autonomy of students will be significantly higher and students will play a more important role in choosing and assembling their own academic study program/ portfolio from across several academic programs and academic institutions. There will be no more disciplinary boundaries for academic programs and together with educators/ professors from across different academic disciplines students develop their study pathways and their own personalized curriculum. Boundaries of academic disciplines and faculties as leading structures for academic programs will dissolve progressively. Leading point of orientation will be students' personal study needs and future professional context.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
○	○	○	○	○

In case of disagreement please state here an improved version of the statement or enter your comment(s).

```


```

Future Scenario 4: Lifelong higher learning

In addition to scenario 3, higher education will progressively shift from an 'up-front mode' of higher education to a new form of seamless lifelong higher learning. Students choose with high autonomy their portfolio of modules according to their personal/ professional skill needs and competence demands throughout their lifetime. Institutions will offer microcredentials, which will be portable and can be assembled into larger compatible degrees on basis of students' choice

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
○	○	○	○	○

In case of disagreement please state here an improved version of the statement or enter your comment(s).

```


```

Thank you very much for your opinions!

The second part of the survey focusses on futures skills, and how they can be defined and formulated.

Future Skills – The Future of Learning and Higher Education
International Delphi Survey

Delphi Survey on "Future Skills – Future Learning – Future Higher Education"

Part II: Future skills and future learning

On the following pages you find statements on future higher education and future skills. Please state to which extent you agree with the following statements:

Topic 1: Individual learning experience and skill development

1.1: The greatest challenge students need to be prepared for through higher education institutions will be the constant need for 'adaption through learning' in constant changing future work environments.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
○	○	○	○	○

In case of disagreement please state here an improved version of the statement or enter your comment(s).

[ ]

1.2: The ability to successfully deal with uncertainty will become the most important skill in future work environments.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
○	○	○	○	○

In case of disagreement please state here an improved version of the statement or enter your comment(s).

[ ]

Delphi Survey on "Future Skills – Future Learning – Future Higher Education"

Part II: Future skills and future learning

Topic 2: Future Skills

The following is a list of future skills for future graduates. Please (a) state the level of importance from your point of view (first column) and (b) how well you feel higher education is currently equipped to support their development (second column).

2A. Subject-related skills (individual skills)

	Importance	Current higher education support
Self-efficacy (one's own conviction to be able to act successfully on a given task)	⬍	⬍
Autonomy (capacity to make an informed, uncoerced decision and act accordingly)	⬍	⬍
Self-initiative (personal initiative (individual ability to take an active and self-starting approach to work goals and tasks)	⬍	⬍
Self-management (ability to lead and regulate oneself to decide in a self-responsible way)	⬍	⬍
Need/ motivation for achievement (individual's desire for significant accomplishment, mastering of skills, control, or high standards)	⬍	⬍
Personal agility (positive attitude, resilience and openness to changes, being comfortable in ambiguous and changing situations)	⬍	⬍
Autonomous learning competences (ability to continuously adapt through learning, know learning methods, evaluate own progress, ability to learn motivated)	⬍	⬍

Please state here if you feel one of the items above needs reformulation.

Future Skills – The Future of Learning and Higher Education

International Delphi Survey

2B. Object-related skills (instrumental skills)

	Importance	Current higher education support
Agility (ability to orient oneself in fast changing contexts)	[▲▼]	[▲▼]
Creativity	[▲▼]	[▲▼]
Tolerance for Ambiguity (ability to deal with uncertainty and in different roles)	[▲▼]	[▲▼]
Digital literacy	[▲▼]	[▲▼]
Ability to reflect (ability to critically analyse made experiences and learn for future contexts)	[▲▼]	[▲▼]
Need/ motivation for achievement (individual's desire for significant accomplishment, mastering of skills, control, or high standards)	[▲▼]	[▲▼]

Please state here if you feel one of the items above needs reformulation.

2C. Organization-related skills

	Importance	Current higher education support
Sense making (ability to identify with and make sense of given organizational rules and values for one's own life and work)	⬍	⬍
Future mindset (ability to continuously learn and develop one's skills and to be open for new and unknown challenges)	⬍	⬍
Cooperation skills (ability to cooperate in teams and have social and intercultural skills)	⬍	⬍
Communication competence (ability to actively create dialogue, achieve consensus and criticize)	⬍	⬍

Please state here if you feel one of the items above needs reformulation.

Delphi Survey on "Future Skills – Future Learning – Future Higher Education"

Part II: Future skills and future learning

For the last topic we would like to ask for your judgement on statements which deal with the organization of higher education in the future.

Topic 3: Institutional level and development of study process

3.1: In the future, the ability to act successful in unknown and complex future contexts will become a leading concept in higher education over knowledge transfer.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
○	○	○	○	○

In case of disagreement please state here an improved version of the statement or enter your comment(s).

3.2: In the future assessment for learning (formative and peer assessment) will become more important over assessment of learning (summative assessment).

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
○	○	○	○	○

In case of disagreement please state here an improved version of the statement or enter your comment(s).

3.3: In the future, certification of small, modularized study experiences in form of microcredentials will become more important over certification of entire degree programs.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
○	○	○	○	○

In case of disagreement please state here an improved version of the statement or enter your comment(s).

Future Skills – The Future of Learning and Higher Education
International Delphi Survey

3.4: In the future, students will study in several higher education institutions sequentially or in parallel, making an academic study an "institutional patchwork" study experience.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
◯	◯	◯	◯	◯

In case of disagreement please state here an improved version of the statement or enter your comment(s).

3.5: The future standard form of higher education will be organized as an episodical patchwork of study experiences through recognizing prior learning and existing competences.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
◯	◯	◯	◯	◯

In case of disagreement please state here an improved version of the statement or enter your comment(s).

3.6: Key competences/ future skills will not replace knowledge transfer but become more important.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
◯	◯	◯	◯	◯

In case of disagreement please state here an improved version of the statement or enter your comment(s).

3.7: Future higher education models will be more likely structured in from of learning communities (learning with each other) than knowledge transfer-oriented (e.g. teachers lecture).

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
◯	◯	◯	◯	◯

In case of disagreement please state here an improved version of the statement or enter your comment(s).

Future Skills – The Future of Learning and Higher Education
International Delphi Survey

3.8: Future higher education systems will be more divers, open to non-traditional target groups, alternative study pathways and more permeable.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
◯	◯	◯	◯	◯

In case of disagreement please state here an improved version of the statement or enter your comment(s).

3.9: Learning design will turn away from presentation and knowledge transfer methods and focus more on interactive socio-constructive designs.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
◯	◯	◯	◯	◯

In case of disagreement please state here an improved version of the statement or enter your comment(s).

3.10: Future higher education will involve more peer-validation of learning (student-to-student assessment) than today.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
◯	◯	◯	◯	◯

In case of disagreement please state here an improved version of the statement or enter your comment(s).

3.11: In the future new quality standards will have to be developed for higher education ensuring a focus on capabilities and competencies of future graduates that will equip them not only to be 'work ready' for today but also 'work ready plus' for tomorrow.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
◯	◯	◯	◯	◯

In case of disagreement please state here an improved version of the statement or enter your comment(s).