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New Digital Education Plan

- Position Paper -

The Weizenbaum Institute for the networked society

About the Weizenbaum Institute

The Weizenbaum Institute conducts interdisciplinary and basic research on the transformation of society through digitalisation. It aims to improve understanding of the dynamics, mechanisms and implications of digitalisation. To this end, the Weizenbaum Institute investigates the ethical, legal, economic and political aspects of digital transformation and creates an empirical basis for shaping it. The Weizenbaum Institute also develops options for policy, the economy and civil society by combining interdisciplinary, problem-oriented basic research with exploring concrete solutions and opening a dialogue with society at large.

The 'Weizenbaum Institute for the Networked Society – The German Internet Institute' is a joint project funded by the Federal Ministry of Education and Research (BMBF). The consortium is composed of the four Berlin universities – Freie Universität Berlin (FU Berlin), Humboldt-Universität zu Berlin (HU Berlin), Technische Universität Berlin (TU Berlin) and University of the Arts Berlin (UdK Berlin) – the University of Potsdam (Uni Potsdam), the Fraunhofer Institute for Open Communication Systems (FOKUS) and the WZB Berlin Social Science Centre, which serves as the coordinator.

Introduction

In 2018, the European Commission adopted an action plan for digital education comprising 11 fields of action. The action plan focuses on the concrete implementation of measures to promote the use of digital and innovative forms of teaching and the development of digital skills in education. Various stakeholders in the education sector include companies, research institutions, non-governmental organisations (NGOs) and, where relevant, non-formal education institutions. The action plan comprises three priorities: (1) better use of digital technologies in teaching and learning, (2) development of relevant digital skills and competencies for digital change and (3) better education through more meaningful data analysis and forecasting.

A consultation on the new respect extended action plan was published on 18 June 2020. The consultation will gather experiences and expectations during the COVID-19 crisis and formulate possible implications for the future design of digital education. The Weizenbaum Institute participated in the consultation by answering the online questionnaire and formulating an accompanying position paper on 04 September 2020. The position paper aims to address

selected issues from the consultation process and highlight the Weizenbaum Institute's observations on these issues.

The paper discusses several key issues related to digital education, focusing on three central theses (general educational framework conditions, digital competences and educational inequalities) and two more advanced theses (technology development and data sovereignty), which correspondent with the topics of the questionnaire.

The focus of the paper is on school education – this area reflects the interaction and dependence of several actors, including children, parents, teachers and educational institutions. However, the phenomenon of increasing educational inequalities in context of digital education can also be applied to the university sector.

Therefore, especially with regard to the current action plan's third priority area – improving education and training through better data analysis and anticipation – we would like to emphasise furthermore on the importance of considering the current impact of the COVID-19 crisis also on higher education. While such a broadening of horizons allows for a direct strengthening of transfer efforts between relevant research results in the field of digitisation of education and a direct application in the field of education and training, the experiences of higher education that are gained from the crisis can be understood as a space for reflection on school education. The transfer and cooperation character are reflected in our work on the digitisation of higher education and currently on the impact of COVID-19 on this educational sector. To establish successful and sustainable digital learning concepts for the long term, it is especially necessary to qualify teachers, consider curriculum differences (and the related professional peculiarities) and review students' technical equipment as well as the development of their digital skills, which are often taken for granted by this generation (‘digital natives’). Several approaches, such as co-creation of learning content with the participation of students and the development of new innovative learning concepts, are becoming increasingly important.

Central theses

1. General framework conditions for digital school education

It is important to create a standardised framework for **decision-making, competence development and networking for both institutions and individuals**. One insight gained during the school closures in the context of COVID-19 concerns the diversity of solutions and approaches (e.g. in individual implementations of curricula and concepts). It has become clear that the development of successful concepts for digital teaching cannot be managed by individual schools without central support from political decisionmakers and multipliers. In the medium and long term, the lessons learned from the crisis should lead to comparable learning models **to provide all school children with the same educational prerequisites and rights, regardless of their place of residence or school affiliation**. To this end, it is important to have **appropriate sets of rules that successfully combine standards at the European level and**

freedoms at the national level. For digital school education, the principle of subsidiarity should be considered in the search for regulations. Central coordination of standards at the

European level would make it possible to equally assist educational institutions in the European Union (EU) on their path towards the development of digital and hybrid learning concepts while maintaining a balance between standard European framework conditions and possibilities for a different learning organisation in the national context.

It is necessary to plan for the crisis and the long-term handling of the experience by involving resources and decisionmakers at a higher level. However, it is equally as important to enable **key stakeholders (students, teachers, parents, educational institutions and providers from the business community) to network in a targeted manner, both formally and informally**. A starting point could include platforms for exchange at the national and European levels or the collection of experience in the form of reports. Ideally, these should be scalable to enable local, national and European networking.

In developing standardised concepts for the sustainable support of schools, the key role of organisations that act as mediators between the micro-level of the individual educational institutions and the macro-level of political decision-making (e.g. school boards in Germany) must be emphasised. These can support schools on individual level to analyse their individual status, develop long-term learning concepts, apply for the necessary financial support and accompany the hiring of own IT experts (often ignored and underestimated), which will be necessary at every school in the medium and long term. It is necessary to involve these organisations in political decisions at the national and European levels to a greater degree because they bring concrete practical experience and a comprehensive understanding of the concept.

2. Development of digital and didactic skills of teachers during their study and training and establishment of lifelong learning concepts

Although technical equipment and infrastructure are prerequisites for digitalisation of teaching and learning, access to or use of a device only cannot be considered as education. **Technical, pedagogical/didactic and conceptual competencies and skills of teachers should be developed in a suitable and coordinated manner during studies and regularly reviewed and further developed**. There is a need of suitable didactic concepts that will allow teachers to design their teaching process in a goal-oriented manner and prepare pupils and students to act not only as consumers of digital learning offerings but also as **co-designers and self-determined critical users** (see Thesis 4 in this paper). For this reason, current models and curricula in the context of teacher training need to be adapted to the changing demands of society and coordinated at the EU level to continue providing students with the advantages of the European Education Area. **Flexibility, openness, creativity, innovation and understanding of the basic principles of digitalisation** are skills that should be consistently integrated into teacher education. A focus on technology would be misguided because, among other things, technology is developing too fast.

There exists a need for **lifelong learning among teachers**. Free (e.g. open source) and qualitatively tested digital learning offers and services for teachers as well as platforms and networks for the exchange of experiences and challenges are important for supporting also the independent, non-intended competence development. Furthermore, models and applications for

self-evaluation of digital literacy should be offered, including the option of anonymous comparison with other teachers at the local, national and European levels.

Online learning environments are increasingly becoming standard support for most university teachers and students. Their use requires appropriate skills and abilities among teachers and students. The European Commission has developed the DigCompEdu reference framework for teachers to help guide the acquisition of skills that are needed now and in the future. This is based on the DigComp 2.1 frame of reference in terms of content and concept. **However, these concepts should not remain a rigid construct but rather should be developed continuously and dynamically**. There is still a lack of differentiation in the school education sector. The aspect of technology design, both in the DigComp 2.1. and in the DigCompEdu, still leaves potential for enlargement and is only addressed under the competence area 'Content Creation'. The critical handling of technology should also be given more emphasis, and a more precise delimitation or linkage of the terms 'digital competence', 'digital literacy' and 'digital fluency' is needed for the training and continuing education of teachers.

3. Consideration of the discourse on educational inequalities in the context of age group-specific differentiation and in terms of long-term health risks

It is well known that access to and the use of digital technologies can narrow performance gaps between learners from socioeconomically strong and socioeconomically weak families. During the COVID-19 crisis, it became clear that **not only access to digital devices is essential but that the conditions in the parental home and the competences of learners must be considered to reduce educational inequality**. Learners in the first two grades in particular are in the child development phase and require special consideration. Younger learners are developing necessary skills, such as self-reflection and self-organisation, which are essential for independent distance learning. The action plan should consider differences in each child's potential and between age groups.

We would like to note that digital education can be accompanied by increased screen usage and social isolation. Long-term negative consequences of passive screen usage should be considered, and the total passive screen time, especially of young learners, should be minimised. Statistics show that children from socio-economically weak families spend more time in front of screens. Therefore, there is a need to promote digital literacy in terms of screen time among learners as well as raise awareness among parents and teachers to avoid digital dependency in learners and strengthen digital sovereignty. The role of school psychologists, who must develop specific skills to help school children with problems arising from increased media consumption, takes on new significance.

It is also important to **exploit the benefits of the physical and virtual spaces and understand digital teaching in a complementary way**. The clarification and explanation of certain learning content (especially new content) can be less effective online than in face-to-face learning, especially for children. In particular, digital learning lacks support through non-verbal cues or observing the interactions of others. Studies have found that social contact in the context of education is a critical success factor for conveying learning content as well as behavioural patterns and basic attitudes for life. For all the advantages that a digital learning environment offers, it is important to consider how these can be combined with the advantages of face-to-face teaching, especially for children.

Especially during the COVID-19 crisis and in the home-schooling context, the different **challenges of school children depending on the situation in their families** have become clear. Learning with a smartphone offers a different learning quality than learning on a computer. The aim should be to recognise these inequalities and offer all children the same opportunities. This means stronger, better and more organised cooperation between parents and schools and considering important factors, such as dignified treatment, transparency about the possibilities for support from the school and the protection of sensitive personal data. Decisions and regulations at the national level are particularly relevant in this respect to best consider the specific circumstances of each European country.

Further theses

4. Support participatory approaches in the design of educational technologies

Regarding the third priority area of the current action plan – improving education and training through better data analysis and anticipation – it is necessary to **focus more on the potential of learning and educational data** in corresponding educational programmes (see, among others, AI Campus) for learners and teachers. Participatory strategies that involve all stakeholders (i.e. science and research, economic actors, policymakers, educational institutions, teachers and learners) in the design processes of educational technologies can, for example, solve the current challenges posed by a lack of or limited willingness to use them and can thus also be conducive to a more efficient and comprehensive collection of relevant learning and educational data. These data are essential for the **development and implementation of learning analytics and AI applications in education** so that the EU remains internationally competitive in educational technology markets. This accompanies the need to create **better framework conditions for economic activities with and around learning and educational data** to maximise their usefulness and social and economic values while **protecting private and public interests** that are in turn representative of Europe's ethical and social values. The innovative potential of the relevant technologies can also be used to better exploit the advantages of digitised learning and teaching processes to optimise educational processes for the benefit of learners and teachers. In this context, it is also essential that teaching content and methods are better investigated to **strengthen educational research and the use of research synergies within Europe**.

5. Supporting concepts for stronger self-determination

The increasing datafication of society is also reflected in the education sector and requires stronger involvement of learners and teachers as participating actors in the data economy. This makes it increasingly important for all actors to **gain a fundamental understanding of the benefits of their learning or educational data** and how and for what purpose their data can be used by third parties. Consequently, the action plan must emphasise the **personal interests of learners and teachers** in addition to those of the private and public sectors while simultaneously defining a package of measures to ensure that the respective interests and goals are met. It is then necessary for the expanded action plan to enshrine the promotion of data sovereignty and self-determination in the use of the personal data of learners and teachers, both in the sense of facilitating more individual control over data through legal rights and technological measures and in the sense of investing in the skills and data competence of the actors. **Promoting data literacy skills and the establishment of a data culture** in educational institutions (the willingness to work with digital data within an institution/organisation) should

thus be highlighted as core tasks within the individual measures of the third priority of the action plan to strengthen individual (and collective/organisational) data sovereignty. Without sovereignty over the handling of one's learning or educational data, personalised and adaptive learning systems are uncontrollable and do not contribute to self-determination. **The sustainable and responsible implementation of learning analytics and AI applications in educational institutions also requires learners to retain autonomy over their data** (e.g. by introducing data accounts and data trust centres).

Another way to improve informed decision-making on the use of appropriate educational technologies is through information and knowledge provision, both at the general level of improving data literacy and at the individual level (e.g. by using information tools, such as standardised data protection symbols that clearly and comprehensibly identify risks and consequences for the individual) (see Position Paper of the Weizenbaum Institute on the EU Data Strategy, June 2020). In addition, regulatory intervention (e.g. in the form of General Data Protection Regulation [GDPR]certifications for educational technologies or data traffic lights) is necessary as a supplement, especially when actors are not in a position (e.g. due to technical complexity) to make well-founded decisions about their learning or educational data independently.