Nordic Journal of Educational History
Vol. 12, no. 2 (2025), pp. 113–135
ISSN (online): 2001–9076
ISSN (print): 2001–7766

Special Tools: Educational Technologies for Children and Adults with Disabilities in Switzerland, 1970s to 1990s

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Abstract • This article examines the history of computer-based technologies for children and adults with disabilities. Using Switzerland as an example, it demonstrates how special hardware and software for people with disabilities became a national policy issue in the last decades of the twentieth century. The focus is on private and public actors, and the historical sources are publications, newspapers, magazines and archival documents. Starting with early regional efforts to develop specialised electronic devices in the French-speaking part of Switzerland, the article first shows the enthusiasm that accompanied the development of new tools for people with disabilities in the 1980s. From the late 1980s, experts in special education and technology development began to network with national stakeholders in computer education. However, this did not generate significant momentum, highlighting the limits of ambitious educational policies in the so-called post-liberal welfare state.

Keywords • history of education, disability history, computers, educational technology, Switzerland

Introduction

Children, young people and adults with disabilities have not featured prominently in research into the history of educational computing. Given the debates about computers and other electronic devices in special education since the 1970s, this is more than surprising.[1] To date, historical research has focused mainly on computer literacy campaigns and the computer as an educational tool.[2] Specific target groups are only rarely addressed.[3] Computer-based technologies adapted for people with physical or

1 The historical research documented in this article was supported by a grant from the Swiss National Science Foundation (SNSF) (project number 182217). See, for example, J. D. Fletcher and Patrick Suppes, "The Stanford Project on Computer-Assisted Instruction for Hearing-Impaired Students," *Journal of Computer-Based Instruction* 3, no. 1 (1976), 1–12; Arthur Boothroyd and Harry Levitt, "Computers and the Education of Hearing-Impaired Children: Possibilities and Limitations," in *Uses of Computers in Aiding the Disabled: Proceedings of the IFIP-IMIA Working Conference on Uses of Computers in Aiding the Disabled, Haifa, Israel, 3–5 November, 1981* (Amsterdam: Elsevier Science Pub. Co., 1981), 285–93.

2 Carmen Flury and Michael Geiss, eds., *How Computers Entered the Classroom, 1960–2000: Historical Perspectives* (Berlin, Boston: De Gruyter Oldenbourg, 2023).

3 At most, programs for girls and women have been analysed or the privileged situation of early users of educational computing. See Joy Lisi Rankin, *A People's History of Computing in the United States* (Cambridge, MA: Harvard University Press, 2018); Rosalía Guerrero Cantarell, "Technology as a Woman's Call: The Efforts of the Fredrika Bremer Association to Promote Women's Education in Technology 1978–1999," *Nordic Journal of Educational History* 9, no. 2 (2022), 125–47.

intellectual disabilities, or the educational consequences of computers for them, have barely been considered.[4]

This article explores how individuals, private associations, foundations and public authorities in Switzerland have made educational technology for people with disabilities a policy issue, with a particular focus on computer hardware and educational software. Historically, this has happened in two ways: firstly, in understanding microcomputers as an "assistive" technology or as a complement to already existing "assistive" hardware. Secondly, with regard to the development of specialised learning software that should also be suitable for children and adults with disabilities. In so doing, the article adds a European perspective to the few existing studies on the history of "assistive" educational technologies, and it offers a view of the history of educational computing that does not further ignore technologies for people with disabilities.

From a methodological perspective, the article is informed by historical institutionalism. In other words, it examines the interventions of organised groups over time and the resulting institutional consequences. The focus is on both state actors and private organisations. Special attention is given to the institutional context in which private and public actors operated, particularly within what Christine Trampusch has termed a "post-liberal welfare regime."[5] To give a voice to those who are not part of the established Swiss institutional setting, the statements of the Swiss disability rights movement on computer technology are also taken into account.

The article is based on publications (journals, brochures, edited volumes, studies, conference reports) of the main Swiss organisations in the field of disabilities, special needs education and computer education, the Swiss daily press and the archival holdings (correspondence, minutes, memos, newsletters) of the Swiss Centre for Information Technologies in Education. It analyses how the issue of educational technologies for people with disabilities was put on the political agenda in Switzerland and which actors collaborated to achieve this.

First, the historical study will be situated in the current state of research. Secondly, the methodological approach and the historical sources will be described. Thirdly, the article presents the educational computing movement in Switzerland, and beyond, as an important historical background against which the discussions and experiments on the use of computers by people with disabilities took place. It then shows how the roots of the development of tools for people with disabilities lie elsewhere, in so-called "assistive" electronic devices. It was, however, only with the expanding educational software market that the computer education advocates in the public authorities came into contact with special education experts. The final section focuses on the coordination of activities between private and state actors in the 1990s. The article concludes with a brief summary of the main results.

4 The exception to this rule is Elizabeth Petrick's important historical study of how closely private computer companies, educators and disability activists in the United States worked together to make computers accessible to young learners with disabilities in the last decades of the twentieth century. See Elizabeth Petrick, *Making Computers Accessible: Disability Rights and Digital Technology* (Baltimore: Johns Hopkins University Press, 2015).

5 Christine Trampusch, "The Welfare State and Trade Unions in Switzerland: An Historical Reconstruction of the Shift from a Liberal to a Post-Liberal Welfare Regime," *Journal of European Social Policy* 20, no. 1 (2010), 58–73. https://doi.org/10.1177/0958928709352539.

State of research

The history of computers has been written from the perspective of the able-bodied and able-minded. The perspective of children and adults with disabilities is only marginally represented in the main works on computer history.[6] The same is true of historical research on educational computing. While race, class, and gender are – at least sometimes – addressed, people who do not physically or intellectually conform to the norm are largely absent in research on the role of computers in education.[7]

There are, however, exceptions to this rule: a few historical studies focus explicitly on computer applications for people with disabilities. The benchmarking historical study here is Elisabeth Petrick's *Making computers accessible: disability rights and digital technology*.[8] Petrick shows how the history of computers can only be understood by considering the practical attempts of disability rights activists and technology developers to ensure greater accessibility. For Petrick, placing people with disabilities at the centre of computer history highlights how optimising computers for diverse needs enabled their evolution into the powerful, all-purpose devices integral to everyday life today.[9]

Petrick's central findings also serve as a foundation for interpreting historical developments in Switzerland in this article. In her historical study, she first illustrates how the question of computer-based assistive technologies and the general role of computers for people with disabilities spurred numerous developments and initiatives even before the advent of the microcomputer in the late 1970s. She emphasises that, unlike the broader discussion around a computerised future, this movement was not primarily driven by visions and utopias but rather by the search for practical solutions in everyday life. In the early 1980s, small US-American companies then developed highly specialised applications for a relatively limited number of potential users with a variety of disabilities. Many of these innovations, which enhanced accessibility but had little scaling potential, were later integrated as standard features in microcomputer architecture. Petrick also examines the role of major tech companies (especially IBM and Apple Computer) in accessibility efforts since the mid-1980s, highlighting their collaboration with disability advocates. This intersection of big tech philanthropy and the disability rights movement is the central focus of her book.[10]

6 Martin Campbell-Kelly et al., *Computer: A History of the Information Machine*, 3rd ed. (New York: Routledge, 2019); Thomas Haigh and Paul E. Ceruzzi, *A New History of Modern Computing* (Cambridge, MA: The MIT Press, 2021). This ignorance is even though, for example, blind people were one of the target groups and early users of important general innovations in computer technology, such as optical character recognition (OCR), which was later scaled up. See Ray Hazan and Anita Hunt, "For Once the Blind Came First: The History of the Kurzweil 1970–1990," *British Journal of Visual Impairment* 8, no. 2 (1990), 45–47.

7 Rankin (2018); Flury and Geiss (2023); Victoria Cain, *Schools and Screens: A Watchful History* (Cambridge: MIT Press, 2021).

8 Petrick (2015).

9 Elizabeth Petrick, "The Computer as Prosthesis? Embodiment, Augmentation, and Disability," in *Abstractions and Embodiments: New Histories of Computing and Society*, ed. Janet Abbate and Stephanie Dick (Baltimore: Johns Hopkins University Press, 2022), 399–415.

10 Petrick (2015).

Petrick's historical study has since inspired others and is the starting point for my case study on Switzerland.[11] However, mainstream history of educational computing also provides lessons for this article. The general computer euphoria since the late 1970s mobilised policymakers, civil society groups, and corporations on a large scale.[12] In her book on the Apple II, however, Laine Nooney argued that the computer could only become widely accepted once a differentiated and specialised software landscape was in place. Only when people knew what to do with the computer could the vision of a computerised society become a reality.[13] As will be shown in the following, this has been the case not only for office software and other applications, but also for hardware and software specifically tailored to people with physical or intellectual disabilities.

This article advances the state of research in two ways: firstly, it adds a European case study to the small body of already existing research on the history of educational technologies for people with disabilities. Previous findings have been heavily based on contexts and experiences in the USA, with its dynamic technology industry and huge computer firms like IBM or Apple. Secondly, the article refines the research focus on technologies for people with disabilities within the history of computerisation and educational computing.

Theory, methodology and sources

Methodologically, the article draws on historical institutionalism. This means that it focuses on the relationship between state and non-state actors and examines the extent to which state authorities, private associations or foundations, and other organisations, have been able to bring their interests to bear. The focus is on the interventions of different stakeholders, the coordination of interests between them and the resulting institutional effects.[14]

How the relationship between the various state and non-state political actors in Switzerland can be theoretically defined depends first and foremost on the analysed policy field. In public education, the pronounced federalism with a strong fiscal and administrative role of the municipalities and cantons must be emphasised. To date, there is no overarching Swiss public-school law and, despite trends toward harmonisation, the governance of public education still varies considerably between cantons, language regions or even individual municipalities.[15] Only in the field of vocational

11 Di Wu, "Cripping the History of Computing," *IEEE Annals of the History of Computing* 43, no. 3 (2021), 68–72; Philipp Macele and Jan Müggenburg, "Playing with the Eyes. A Media History of Eye Tracking," in *Disability and Video Games: Practices of En-/Disabling Modes of Digital Gaming*, ed. Markus Spöhrer and Beate Ochsner (Cham: Springer International Publishing, 2024), 117–43.

12 Flury and Geiss (2023).

13 Laine Nooney, *The Apple II Age: How the Computer Became Personal* (Chicago: The University of Chicago Press, 2023).

14 Kathleen Thelen, *How Institutions Evolve: The Political Economy of Skills in Germany, Britain, the United States, and Japan* (Cambridge: Cambridge University Press, 2004); Lukas Graf, "Historical Institutionalism in Education and Globalization," in *Oxford Handbook on Education and Globalization*, edited by Paolo Mattei, Xavier Dumay, Eric Mangez, and Jacques Behrend (Oxford: Oxford University Press, 2023), 74–94.

15 Gunther M. Hega, "Federalism, Subsidiarity and Education Policy in Switzerland," *Regional & Federal Studies* 10 (2000), 1–35. https://doi.org/10.1080/13597560008421107; Anja Giudici and Patrick Emmenegger, "Education policy," in *The Oxford Handbook of Swiss Politics* (Oxford: Oxford University Press, 2023), 604–22.

education and training does a national education act exist. However, in this context professional and employer associations and other private organisations are heavily involved in what has been labelled a "collective skill formation system."[16]

When it comes to children and young adults with disabilities, it is not only the governance of education that determines how state and non-state actors in Switzerland can intervene or participate in policymaking. Welfare state measures and social policies have also to be considered.[17] In Esping-Andersen's classic typology, Switzerland has been labelled a "liberal welfare state;" others have emphasised that the Swiss welfare regime is "notoriously difficult to classify."[18]

Although there has been a shift towards the continental model of the welfare state since the 1970s, the Swiss system retains a distinctly liberal character. Historically, Switzerland is considered a latecomer in the development of the welfare state. A national disability insurance scheme was not introduced in Switzerland until 1960. It was used to fund, among other things, labour market integration and technical aids, and to subsidise special schools for people with disabilities.[19] Like in public education, federalism continues to structure the Swiss welfare state to this day. Like in vocational education and training, the role that private organisations play in providing services is noteworthy. The result is a "fragmented welfare state with several coordination problems."[20]

Historical institutionalism tends to reproduce the power relations in the historical field analysed. Less powerful and marginalised social groups and individuals are not, or rarely, represented here – this includes people with disabilities. In the historical field at the centre of this article, people with disabilities are often spoken for rather than speak for themselves, particularly when policies or coordinated actions are being negotiated. The article attempts to mitigate this by including the position of members of the Swiss disability rights movement.[21]

When this article talks about "physical," "intellectual" or "learning" disabilities, these are the classifications that were made in the professional, scientific and political fields in Switzerland between the 1970s and 1990s. The same applies to electronic and digital technologies, which were framed during these decades as "aids" or "assistive"

16 Philipp Gonon and Markus Maurer, "Education Policy Actors as Stakeholders in the Development of the Collective Skill System: The Case of Switzerland," in *The Political Economy of Collective Skill Formation* (Oxford: Oxford University Press, 2012), 126–49.

17 Trampusch (2010).

18 Hanspeter Kriesi and Alexander H. Trechsel, *The Politics of Switzerland: Continuity and Change in a Consensus Democracy* (Cambridge: Cambridge University Press, 2008), p. 155.

19 "Behinderungen," in *Geschichte der Sozialen Sicherheit in der Schweiz* (Bern: Bundesamt für Sozialversicherungen, 2013). https://www.geschichtedersozialensicherheit.ch/risikogeschichte/behinderung.

20 Giuliano Bonoli and Flavia Fossati, "Social Policy," in *The Oxford Handbook of Swiss Politics* (Oxford: Oxford University Press, 2023), p. 705.

21 On the role of power and the problem of institutional perspectives in disability history see Elizabeth Bredberg, "Writing Disability History: Problems, Perspectives and Sources," *Disability & Society* 14, no. 2 (1999), 189–201; Catherine J. Kudlick, "Disability History: Why We Need Another 'Other'," *The American Historical Review* 108, no. 3 (2003), 763–93; Alfredo J. Artiles, Sherman Dorn and Aydin Bal, "Objects of Protection, Enduring Nodes of Difference: Disability Intersections With 'Other' Differences, 1916 to 2016," *Review of Research in Education* 40 (2016), 777–820.

tools for people with disabilities.[22] The sources analysed for this article very rarely reveal where computers were experienced and understood as "assistive" by users with certain disabilities. Where explicit statements could be found in the historical material, these are mentioned in the article.

The historical analysis documented in this article is based on published and archival sources. Firstly, publications by government agencies, disability organisations, special education experts, the Swiss disability rights movement, and academic scholars will be considered. Secondly, the Swiss daily press will be analysed. Thirdly, the historical holdings of the Swiss Centre for Information Technologies in Education (SFIB) in the State Archives of Lucerne (StALU) will be examined. The correspondence, minutes, memos and newsletters available here provide an insight into the main negotiations, particularly in the 1990s.

Background: the advent of the microcomputer and early educational computing initiatives in Switzerland

Switzerland never developed a significant computer industry, but it was an important place in Europe for research and development into new technologies during the entire twentieth century. It became a hotspot for the engineering industry during the period of high industrialisation, and Swiss companies and business associations became closely intertwined with technical universities and colleges. Since the 1950s, the technical universities and colleges remained vital to the country's industrial innovation and supply of skilled workers to compete with other highly industrialised countries (and the Cold War enemy behind the iron curtain).[23]

Although Switzerland was not able to develop its own competitive computer industry, groundbreaking inventions in the field of computer technology were made at Swiss universities. One of the first electronic computers in Switzerland, the ERMETH (*Elektronische Rechenmaschine der ETH*), was developed at the Federal Institute of Technology Zurich (ETH) in the late 1940s and then used for many years. "Lilith," a microcomputer with graphics and a computer mouse, was also developed at ETH and was in use at the end of the 1970s. ETH Zurich also played a central role in the development of programming languages. The global company Logitech, founded in Switzerland in 1981 and known worldwide for its computer mice, had very close links with the *École polytechnique fédérale de Lausanne* (EPFL).[24]

22 Mara Mills, "Technology," in *Keywords for Disability Studies*, ed. Rachel Adams, Benjamin Reiss, and David Serlin (New York: New York University Press, 2015), 176–79.

23 Fritz Hummler, "Bemerkungen zum Problem des wissenschaftlichen und technischen Nachwuchses," *Mitteilungsblatt des Delegierten für Arbeitsbeschaffung* 11, no. 3 (1955), 55–61; David Gugerli, Patrick Kupper, and Daniel Speich, *Transforming the Future: ETH Zurich and the Construction of Modern Switzerland 1855-2005* (Zurich: Chronos, 2010), 191–217.

24 Juri Jaquemet, "ERMETH – Computer Made in Switzerland," *Swiss National Museum – Swiss History Blog* (blog), February 20, 2018, https://blog.nationalmuseum.ch/en/2018/02/ermeth-computer-made-in-switzerland/; Tobias Wildi and Andreas Nef, "Informatik an der ETH Zürich 1948–1981. Zwischen Wissenschaft und Dienstleistung," in *Computergeschichte Schweiz – Eine Bestandesaufnahme*, ed. Peter Haber (Zurich: Chronos), 9–58; Adrian Knoepfli, "Logitech," in *Historisches Lexikon der Schweiz (HLS)*, version of October 21, 2018. Online: https://hls-dhs-dss.ch/de/articles/055500/2018-10-21/.

In the 1980s, the computer was suddenly everywhere, in homes, in small offices, and on the educational agenda. General availability called for a certain level of computer literacy to operate, and to work or play with the computer. This also applied to Switzerland. People now needed (and wanted) to know about the computer, what it was and how it could be used for gaming, working or daily administration. Computer education was on the political agenda and was also a major concern of teachers' associations and other educational stakeholders in Switzerland and beyond.[25] In this context, even a Swiss educational computer called "Smaky" was developed, which in the French-speaking part of Switzerland for a time rivalled the popular Apple products.[26]

Special hardware

Long before the advent of the microcomputer, Swiss disability organisations realised that electronic computers could open up new opportunities for their clientele. In 1970, the "*Office romande d'integration pour handicapés*" reported on, already, seven years of training of clients with physical disabilities. After the organisation had decided to implement electronic data processing, an IBM minicomputer was used here, which took up less space than earlier mainframes and cost considerably less.[27] Minicomputers were smaller and cheaper than mainframes, but unlike the later microcomputers (home computers, personal computers, etc.), they were not yet suitable and affordable for home use.[28]

Swiss media published detailed reports on single cases and general developments in computerised work for people with disabilities.[29] With the advent of the microcomputer, the discussion about computers and disabilities then gained momentum. While members of the state authorities and teachers' associations were still puzzling over why and to what end computers in public schools should be used, it seemed easy to spot promising applications for children and adults with physical disabilities.[30]

Starting with very rudimentary devices in the late 1970s, different organisations helped to develop scalable products for different contexts or uses and different disabilities over time. As with computer literacy, the impetus for innovation came from the French-speaking part of Switzerland. At the end of the 1970s, the *Castalie Centre Médico-Éducatif* in Monthey, near Lake Geneva, was experimenting with electronic aids that could be used to control lights and motors via switches. The design of this equipment was also suitable for use by children. In 1982, a member of staff at the centre acquired a computer for himself and started developing software for people with disabilities. In

25 Michael Geiss, "Computer Education in Switzerland: Politics and Markets in a Highly Decentralized Country," in *How Computers Entered the Classroom, 1960–2000*, edited by Carmen Flury and Michael Geiss (Berlin: De Gruyter Oldenbourg, 2023), 147–70.

26 Fabian Grütter, "The Smaky School Computer. Technology and Education in the Ruins of Switzerland's Watch Industry, 1973–1997," *Learning, Media and Technology* 49, no. 1 (2024), 49–62; Geiss (2023).

27 "Der Computer im Dienst körperlich Behinderter," *Neue Zürcher Nachrichten*, October 10, 1970.

28 Haigh and Ceruzzi (2021), 90–96.

29 "Blinde als Programmierer," *SVEA-Nachrichten*, May 7, 1975; see also the reports in "MIXTURA," *Die Tat*, March 18, 1966; "MIXTURA," *Die Tat* May 8, 1971; "Computer-Fernkurse für Blinde," *Bieler Tagblatt*, November 11, 1971; "Berufsausbildung," *Wir Brückenbauer*, February 25, 1972.

30 Riccardo Bonfranchi, "Informatik in der Heil-, Sonder- und Sozialpädagogik: Was bringt der Computer Behinderten?" *Schweizer Heimwesen: Fachblatt VSA* 63, no. 4 (1992), 231–37.

1984, the centre acquired its first computer, and the following year established an expert group of teachers to study and train in the use of computers for children with disabilities. Parents of children with disabilities in the region also began to take an interest.[31]

However, the opportunities that the use of computers could open up for people with disabilities were not only seen by disability organisations and educational institutions for children with disabilities and their parents. Members of the Swiss disability rights movement, which in other cases were highly critical of recent technological developments, also carefully weighed up the pros and cons of electronics and computer-based technologies. They saw advantages, for example, when wheelchairs now could be better controlled and other everyday devices could be made easier to use by people with physical disabilities. In addition, input and output speech devices seemed to provide completely new communication opportunities for people with severe disabilities. However, members of the Swiss disability rights movement, like many others in the 1980s, were also deeply concerned about being rationalised away by automation.[32]

In 1982, a new historical actor appeared on the Swiss scene who was particularly committed to providing technological aids for children and adults with disabilities. At the end of 1982, the *Fondation suisse pour les Téléthèses* was established by the Swiss Paraplegics Foundation in Basel and the Swiss Foundation for Children with Cerebral Palsy (Cerebral Foundation) in Berne. The *Téléthèses* foundation was based in Neuchâtel and specialised in the development and testing of electronic tools for people with physical disabilities.[33] Jean-Claude Gabus served as the Foundation's Executive Director.[34] Gabus was born in 1950 and grew up in Le Locle. He then studied at the *Technicum in La Chaux-de-Fonds*. In the 1970s, Gabus helped to develop "CARBA-LINGUADUC," an assistive tool which could be operated using the tongue, for example to call a nurse. Gabus remained active as Executive Director at the Téléthèses Foundation until his death in 2003, helping to develop and disseminate various applications for people with disabilities and building strong networks in Switzerland and beyond.[35]

At the time, electronic aids for children and adults with disabilities were not suitable for mass production as the solutions had to be tailor-made and could not be commercialised. The newly established *Téléthèses* Foundation was therefore funded by grants and donations, and received input directly from users and special education institutions. The devices developed by the foundation ranged from conventional electronic aids to computer-based tools. From the outset, the *Téléthèses* Foundation also developed aids especially for (or adapted to) children to enable them to participate more fully in social and educational life.[36]

31 "Informatique et handicapés," *Le nouvelliste*, October 9, 1986; see on home computers like the Commodore Gleb J. Albert, "Der vergessene 'Brotkasten': neue Forschungen zur Sozial- und Kulturgeschichte des Heimcomputers," *Archiv für Sozialgeschichte* 59 (2019), 495–530.

32 Linus Flüeler, "Behinderte und Computer," *Puls: Drucksache aus der Behindertenbewegung* 28, no. 3 (1986), 45–48.

33 ["Fondation suisse pour les Téléthèses,"] *FAN – L'express*, May 31, 1983.

34 *Schweizerisches Handelsamtsblatt* 101, no. 105 (1983), 1566.

35 "B.A.Bar orphelin," *L'impartial*, March 20, 2003, 3; Élisabeth Cataix-Nègre, *Communiquer autrement: accompagner les personnes avec des troubles de la parole ou du langage: les communications alternatives*, 2nd ed. (Louvain-la-Neuve: De Boeck, 2017), 29.

36 "Fondation suisse pour les téléthèses," *La liberté*, September 19, 1984, 113.

The term "*Téléthèses*" was a made-up word used to describe an extended form of prosthesis that was not worn on the body but was intended to replace or support a human function. The microcomputer became a particularly interesting device in this context, but it had to be augmented with a number of additional instruments so that it could be operated by people with severe physical disabilities. For many of those, a keyboard was not suitable as an input device and alternative input aids were needed. However, the *Téléthèses* Foundation also developed its own microprocessor-controlled tools like the "Hector" speech computer. "Hector" was designed to give children and adults a voice who could not articulate or could only articulate with great difficulty. It was connected to an output device that was able to produce a synthesised voice. Output on a screen or via a printer was also possible.[37]

The "Hector" speech computer attracted a lot of public attention and was even featured on Swiss television in a report showing its use in the classroom by children.[38] It was designed for adults and children with severe motor disabilities. A special keyboard was available for "Hector," which could also be equipped with pictograms if someone was unable to read and write. The first four "Hector" prototypes were used in 1984 in Zurich, Lucerne, Lausanne and La Chaux-de-Fonds. The aim of this early phase was to demonstrate the benefits of "Hector" so that the costs would be covered by Swiss disability insurance in the future.[39]

"Hector" was also the big attraction at a congress in Interlaken in 1986, which focused on the role of new technologies in special education. The congress had been organised by the Swiss Society for Special Education (*Schweizerische Heilpädagogische Gesellschaft*) and supported by the European Association for Special Education. According to press reports, over 300 people from Switzerland and abroad took part. In the view of one of the organisers, the reluctance to use computers for instructional purposes in special education was due to the fact that although the hardware was available, the necessary software was still lacking.[40]

The euphoria reported by congress participants was not shared by everyone. At the 1986 congress, Gabus had presented his tool for the first time to a larger public including academic experts. His practice-oriented talk was followed by a practical presentation by a person with severe speaking disabilities as well as the head of a school for children with cerebral palsy in the city of Zurich, who also reported on his experience with "Hector." Criticism came particularly from academic special education. The critique neither targeted the technical shortcomings of "Hector" and other voice output tools nor the unavailability of the software, but centred on the lack of a sound educational concept for the implementation of new computer-based technologies. From a professional and institutional perspective, however, the *Téléthèses* Foundation

37 Heinz Moser, "Sprechen mit 'Hector,'" *Schweizer Schule* 73, no. 9 (1986), 27–29.

38 *Karussell, "'Sprach-Computer'" aired 11 March 1985, SRF, https://www.srf.ch/play/tv/karussell/video/sprach-computer?urn=urn:srf:video:76bab1f3-a42c-4e84-af88-719f3c5cc575*.

39 "Sprechender Computer für Behinderte," *Neue Zürcher Zeitung*, March 1, 1985.

40 "Computer helfen den behinderten Menschen," *Freiburger Nachrichten*, October 1, 1986.

did seem to fulfil a need: 30 educational institutions in Switzerland already reported that they were planning to implement "Hector."[41]

Research on "Hector" was generally welcomed by Gabus and the *Téléthèses* Foundation. Andreas Bächtold, a professor at the Institute for Special Education at the University of Zurich, took general excitement around "Hector" as an opportunity to set up a pilot study group to evaluate the tool from a scientific perspective. In collaboration with a team of researchers from Neuchâtel, the Zurich pilot project was to focus on two aspects in particular: the linguistic challenges of using "Hector" and the language development of children with a speech disability.[42]

Both the feedback from the field and the initial scientific findings were implemented into the revised version of "Hector." The developers had programmed the first version of "Hector" in BASIC, the rather simple and not very powerful "Beginner's All-purpose Symbolic Instruction Code" programming language developed at Dartmouth College in the USA. The second version of "Hector" was programmed in machine language and was therefore able to process signals much faster. Instead of 900 words or speech acts, 2,100 separate outputs could now be stored, of which 700 had already been defined in advance by the developers. Applied linguistics experts from Neuchâtel had analysed the types of common usage and identified the most important words or speech acts that should be available to all users. It was also possible to adapt the tool to children and adults who needed a simpler device. Finally, the main controls were adapted for the second version: the device no longer had 25 main commands, but only five.[43]

In the public debates around "Hector," people with disabilities had appeared in three roles: as users of the new tools, as participants in scientific studies, or in public demonstrations of the potential of the devices. In 1987, the editors of the magazine *Puls*, the main Swiss publication of the disability rights movement, now asked their readers to comment on computer-based technologies and report their experiences. In particular, the readers were asked to what extent everything that now seemed possible was also desirable, and what this meant for the role of conventional analogue aids.[44]

It was, however, a different debate on new technologies that dominated in publications of the Swiss disability rights movement at the time: the controversies around prenatal diagnostics and eugenics. With scientific progress in this area, members of the disability rights movement feared that the distinction between a life worth living and a life not worth living would become much more pronounced in the future. This debate even intensified and became more heated in the second half of the 1980s with the controversy surrounding the positions of the Australian philosopher Peter Sing-

41 Margrit Balbi and Andreas Bächtold, "HECTOR – ein neuer Fall für die Sonderpädagogik?" *Travaux neuchâtelois de linguistique*, no. 12 (1987), 99–114.

42 Ibid.; René Jeanneret, "HECTOR, problèmes lexicaux," *Travaux neuchâtelois de linguistique*, no. 12 (1987a), 41–62; René Jeanneret, "La téléthèse de communication HECTOR," *Travaux neuchâtelois de linguistique*, no. 12 (1987b), 9–12. Bächtold's pilot study was followed by an extensive project funded by the Swiss National Science Foundation (SNSF). See Evi Graf and Stefan Weber, *Lautsprachbehinderte Zerebralparetiker: Kognition, Sprache und technische Kommunikationshilfsmittel* (Bern: Lang, 1992).

43 Véronique Zülli, "HECTOR II," *Travaux neuchâtelois de linguistique*, no. 12 (1987), 121–22.

44 Jiri Gajdorus, "Vorschau: Hilfsmittel," *Puls: Drucksache aus der Behindertenbewegung* 29, no. 6 (1987), 31.

er.[45] A sceptical attitude also accompanied some of the publications from the disability rights movement on computers and other technologies. Experience, human interaction, understanding and optimism seemed to be in danger of being lost in favour of the benefits of rationalisation. The criticism was directed at a highly formalised social life in which people, with their needs, challenges and aspirations, were no longer at the centre – the computer, when used for anything other than accounting or administrative routines, seemed a harbinger of this dystopia.[46]

The more specific statements from members of the disability rights movement on specialised computer-based technologies for people with a physical disability were, however, less dismissive. In one of the responses to *Puls* magazine's call for comments on new technical aids, Heidi Huber described the new possibilities "Hector" had opened up for her. Suddenly she had been able to communicate in a way not imaginable before. She no longer had to cope with the projections of those around her but could express her thoughts herself. Huber described how she first had to learn how to use the new technology and build a relationship with it. Despite the human name, she did not consider "Hector" to have a personality of its own but simply saw it as an intermediary for her wishes, thoughts and feelings. Huber even turned one of its technical disadvantages into an advantage: unlike people without a speech disability, users of "Hector" always had to think first about what they wanted to say before starting to talk. Susanne Schriber, a member of *Puls'* editorial team, was less enthusiastic about the new electronic aids, but also stressed that they were a great step forward in the lives of people with physical disabilities.[47]

"Hector" was expensive. In 1988 it cost between 14,000 and 19,000 Swiss francs, which would be between 21,000 and 29,000 Swiss francs today (2025). Disability insurance (social welfare) now supported the purchase of "Hector" if it could be shown that the device was necessary to communicate with other people. Customers, however, were also found in France, Italy and West Germany. In addition to "Hector," the *Téléthèses* Foundation developed a second much cheaper device, which was widely used. This tool was called "James" and was an infrared remote control that could store 234 command functions. For people who were not able to use their fingers to operate the remote control, additional devices were available to give commands using the tongue or breath pressure.[48]

Educational software as a policy issue

"Hector" and "James" were hardware solutions for people with physical disabilities. They aimed to make everyday life easier for children, young people and adults, and to increase their social, professional or educational participation. Without advances

45 Brian McGowan, "Die Zeitschrift PULS – Stimme aus der Behindertenbewegung," in *PULS – Druck-Sache aus der Behindertenbewegung. Materialien für die Wiederaneignung einer Geschichte*, edited by Erich Otto Graf, Cornelia Renggli, and Jan Weisser (Zurich: Chronos, 2011), 13–73.

46 P. Klöckler, "Achtung: Sozialtechnologen im Anmarsch!" *Puls: Drucksache aus der Behindertenbewegung* 29, no. 1 (1987), 20; Ruth Buchmann, "Professionelle Sozialarbeit total im Jahre 2000," *Puls: Drucksache aus der Behindertenbewegung* 29, no. 6 (1987), 20.

47 Susanne Schriber, "Telethesen: Prothesen für alte Hoffnungen," *Puls: Drucksache aus der Behindertenbewegung* 30, no. 1 (1988), 26–28.

48 "Im Dienste der Behinderten," *Neue Zürcher Nachrichten*, March 21, 1988.

in microprocessors, neither of these devices would have been possible. From the very beginning the educational use of "Hector" in schools and the target group of learners with disabilities played an important role in the *Téléthèses* Foundation's mission. However, the tools were first designed without accompanying educational research and comprehensive instructional concepts.

In 1986, the *Téléthèses* Foundation embarked on another project for children, where it was even more difficult to find solid and sustainable solutions. This new project had again a catchy and easy to remember name: It was called "LOGIBABA." Whereas the focus of "James" and "Hector" had been on hardware for people with physical disabilities, the new project was dedicated to learning software for people with intellectual disabilities and learning difficulties. According to a member of the project team, the acronym "LOGIBABA" stood for "*logiciels pour le B-A-BA des acquisitions*," which can be translated as "software as the ABC for learning."[49]

At the same time as "Hector" was attracting a lot of public attention, Gabus began to look for political support and to organise funding for a pilot project on learning software. The launch of a project dedicated to software for learners with intellectual disabilities was then made possible by a parent association, the *Fédération suisse des associations de parents d'handicapés mentaux* (FSAPHM). The pilot project was intended to help Gabus and his team at the *Téléthèses* Foundation to decide whether it was worth tackling the main software project at all.[50]

In order to realise the pilot project, the *Téléthèses* Foundation hired André Baechler, an employee of the *Castalie Centre Médico-Éducatif* in Monthey, in a part time capacity. At the time, members of the Castalie Centre had already written rudimentary software to be used by children or adults with intellectual disabilities, but Baechler thought the self-written software was too "amateurish" to be implemented on a broader scale. The aim of the pilot study was, however, not to perfect the software, but rather to prepare testing in other Swiss educational centres. A total of four educational institutions participated in the project, all based in French-speaking Switzerland. As part of the pilot study, five software programs were to be evaluated for their benefits and challenges. In addition, Baechler had already contacted a number of different researchers at universities in French-speaking Switzerland who would be available for advice and support.[51]

The participating educational institutions were sent a comprehensive questionnaire by the project manager to document their experiences with the software.[52] Both adults and children were part of the sample, which raised the question of whether it would be appropriate to work with the same software for both target groups. The project leader emphasised that such a project would only be worthwhile if it met actual

49 Sylvie Grandguillot and Armin Murmann, "The Use of Computers in Special Education: The Example of French-Speaking Switzerland," *International Journal of Sociology and Social Policy* 10, no. 4/5/6 (1990), 165–75; André Baechler, "Forum über die neuen Technologien im Dienste der geistig und mehrfach Behinderten," *Schweizer Heimwesen: Fachblatt VSA* 62, no. 3 (1991), 187–88.

50 André Baechler, "Avant-projet FST et FSAPHM," in *L'informatique, outil d'application pour handicapés physiques et mentaux: un inventaire des expériences en Suisse Romande* (Geneva: [éditeur non identifié], 1989), Annexe 1.1.

51 Ibid.

52 André Baechler, "Questionnaire expérimentation de logiciels, August 1987," in *L'informatique, outil d'application pour handicapés physiques et mentaux: un inventaire des expériences en Suisse Romande* (Geneva: [éditeur non identifié], 1989), Annexe 1.2.

practical needs. Finally, he reported that all the participating institutions wanted the project to continue.[53]

For the larger follow-up project, decided on in 1988, the aim was to involve the other Swiss language regions as well and to find available software that already met the needs of the field and only needed to be adapted or translated. Only when the existing software was not sufficient did the project team want to develop new applications. All age groups should be considered, and a wide range of institutional settings should be taken into account. A minimum of three years was planned for the follow-up project, if only because of the rapid progress in technological development. For the *Téléthèses* Foundation, this meant a significant expansion of its portfolio. The software project was considered to be much more complex than the earlier endeavours. Until now, the Foundation's expertise had been in the field of hardware for people with physical disabilities. This is why the *Téléthèses* Foundation wanted to collaborate with partners in Switzerland who already had extensive experience in this field or who could bring new networks and expertise to the table. The project manager of the main project, again André Baechler, also saw the need to collaborate with national and cantonal universities, to use the services of private software developers if necessary, or to employ its own software developers. Regarding international expertise, the contacts that the *Téléthèses* Foundation had already established abroad should also be used for the "LOGIBABA" project. In terms of hardware, the appropriate devices were considered to be the Commodore 64, the Amiga 500 or the Amiga 2000. These machines were widely used and well known, they were relatively cheap, and a lot of useful software was already available.[54]

In 1984, when the Swiss Conference of Cantonal Ministers of Education (EDK) began to coordinate activities in the field of computer education in compulsory schools, special education or software and hardware for learners with disabilities did not yet play a role. In 1985, the EDK set up a working group on "Informatics in primary schools" and began to survey the current situation in the cantons, to inform cantonal actors and to develop guidelines. While significant progress had been made in the cantons in terms of hardware, there was a lack of the necessary software to enable effective computer-based teaching in the classrooms. In 1989, EDK decided to support and help establish a coordination centre dedicated to educational computing in Switzerland, the *Schweizerische Fachstelle für Informationstechnologien im Bildungswesen* (SFIB) at the *Film Institut*. The *Film Institut* had been one of the most important players in Switzerland in the twentieth century when it came to media literacy. Founded already in 1921, it was particularly involved in film education. The affiliated SFIB centre was now tasked with documenting the many initiatives in Switzerland dedicated to educational computing

53 "Synthese de la réunion du 5 octobre 87 et des quatre questionnaires remplis par les institutions à l'issue del'expérience de l'avant-projet: FST expérimentation de logiciels," in *L'informatique, outil d'application pour handicapés physiques et mentaux: un inventaire des expériences en Suisse Romande* (Geneva: [éditeur non identifié], 1989), Annexe 1.3.

54 "Projet F.S.T. – Développement et application de l'informatique comme soutien pédagogique aupres des handicapes mentaux;" "Projet FST LOGIBABA – L'informatique au service des handicapes et des jeunes enfants," in *L'informatique, outil d'application pour handicapés physiques et mentaux: un inventaire des expériences en Suisse Romande* (Geneva: [éditeur non identifié], 1989), Annexe 2.1, Annexe 2.2; André Baechler, "Développement et application de l'informatique comme soutien pédagogique auprès des déficients mentaux," *appel*, no. 2 (1988), 34–35.

and networking the key actors, documenting the existing software, dealing with legal issues and with the further development of educational media. The EDK also launched a multi-year plan with the aim of introducing a longer-term perspective for the use of information technology in schools. However, it saw itself primarily as a platform for coordination, documentation and networking. In a highly decentralised country like Switzerland, it could not guarantee the actual financial resources to implement new technologies on a larger scale. This money had to be provided by the cantons and municipalities, which were (and still are) responsible for compulsory education in Switzerland, both in terms of finance and control.[55]

In the first years of its coordination efforts in the field of computer-based education, EDK did not explicitly address computers in special needs education. Nor was there any dialogue between the EDK experts with those at the *Téléthèses* Foundation responsible for "Hector," "James" and "LOGIBABA." This changed at the end of the 1980s. While the "LOGIBABA" project was already running, several political actors finally started coordinating efforts in the area of computer use for children and adults with disabilities in Switzerland at the national level. EDK now helped establish a new working group that also included representatives of the *Schweizerische Heilpädagogische Gesellschaft* (SHG), a professional association established in 1889 and dedicated to special education. In 1989, the SHG provided opportunities for a more intensive exchange on computer use in special education in which both the regional and international developments in the field were discussed. At the end of the year, a symposium organised by the EDK brought the cantonal experts for the use of new information technologies in education up to date with developments in special needs education. The aim was now to set up a national cooperation to network the various experts. In the medium term, this network was to extend even beyond national borders.[56]

In the spring of 1990, representatives of the SHG, the *Schweizerische Zentralstelle für Heilpädagogik* (SZH) and the *Téléthèses* Foundation initiated a study group on "Informatics in Special Education," in which other educational institutions and experts were also to participate. The aim of this study group was – again – to coordinate, network, document and inform, but also to initiate joint projects. The SZH, founded in 1972 as the Swiss coordination centre for special educational training institutions, was to become one of the important actors in the national establishment of the policy field of computer use by people with disabilities.[57]

The funds for the extension of the SFIB portfolio came from the *Schweizerische Stiftung für das cerebral gelähmte Kind* (Foundation for the Cerebral Palsy Child). "LOGIBABA" became part of the SFIB's activities portfolio in January 1991 and was fully integrated there on 1 September 1991. The Cerebral Foundation contractually

55 Dominik Jost, "Informatikunterricht und Sonderpädagogik," in *Congrès 'Technologie et Handicap': Publication des Actes*, edited by Schweizerische Stiftung Elektronischer Hilfsmittel für Behinderte (Neuchâtel: [éditeur non identifié], 1990), 124–134.

56 Jost (1990). Regarding the SHG, see the few historical details in Hans Brunner, "100 Jahre Schweizerische Heilpädagogische Gesellschaft: auf dem Wege von der Integration zum Mitmensch- und Mitseele-Sein," *Schweizer Heimwesen: Fachblatt VSA* 60, no. 12 (1989), 805–806.

57 Jost (1990). Regarding the 'Schweizerische Zentralstelle für Heilpädagogik' (SZH) see Barbara Egloff, Alois Bürli and Romain Lanners, *50 Jahre SZH: von einer Vereinigung der Ausbildungsinstitute hin zum nationalen Kompetenzzentrum für inklusive Bildung* (Bern: Edition SZH/CSPS, 2023).

guaranteed its financial support until 1994. The *Téléthèses* Foundation was now to focus primarily on hardware development, adaptation and implementation. The SFIB was responsible for all matters relating to educational software. In order to make the transition as smooth as possible, the staff previously responsible for "LOGIBABA" were retained for a limited period. The SFIB was to act as a point of contact and advice for schools and parents of children with disabilities. The aim was to use the expertise and knowledge already built up within "LOGIBABA" for this purpose. In addition, the activities, which were still largely limited to French-speaking Switzerland, were to be extended to German-speaking Switzerland and Italian-speaking Ticino. SFIB guaranteed that the employee responsible for the special educational needs' portfolio was at least bilingual.[58]

The transfer of the "LOGIBABA" project to the SFIB centre meant that activities would now be national in scope. However, this did not mean that there would be a significant increase in staff. The SFIB had to operate on a shoestring budget and only one person was responsible for all matters relating to special education.[59]

The following year, the SFIB took part in a special education congress in Davos, where it organised four seminars and more than 10 workshops. The centre now began issuing licences for educational software that could be used both in primary schools with young children and in special education settings.[60] It also ran two demonstration rooms for software, one in Zurich and one in Neuchâtel. French and German programs could be tested here. The SFIB repeatedly pointed out that the software installed was not only suitable for people with disabilities but could be used in all primary schools. Various hardware was available in the demonstration rooms, including a Macintosh and an IBM PC as well as an Amiga computer. The SFIB also published a bulletin dedicated to special education and organised training for teachers in the use of educational software in schools for people with disabilities.[61]

The complicated structure of public and private funding, and the involvement of several authorities at the national and inter-cantonal levels, made it difficult to develop a sustainable model for the SFIB coordination centre. From 1995, a new solution had to be found as the SFIB was evaluated and put on a new footing and the Cerebral Foundation had only agreed to provide initial funding.[62] However, the structure of the SFIB agency remained complicated. This reflected the challenges of educational governance in a system with almost no centralised control. The joint sponsorship of the SFIB by a federal authority, *the Bundesamt für Industrie, Gewerbe und Arbeit* (BIGA), and the EDK was extended. The Study Group on New Information Technologies in Special

58 Jahresbericht SFIB 1990/1991 (StALU/A1572/578); SFIB Info 1/1991 (StALU/A1427/1661); Protokoll der Vorstandssitzung SFIB vom 20. Juni 1991 (StALU/A1427/1180).

59 Guido Buser, "Interview mit dem Leiter der SFIB," *Interface*, no. 2, 8–9.

60 Protokoll der Vorstandssitzung SFIB vom Freitag, 2 Oktober 1992; Protokoll der Vorstandssitzung SFIB vom Dienstag, 16 Juni 1992, 9.00–12.00 Uhr; SFIB Info 3/1991 (StALU/A1427/1661).

61 Jahresbericht SFIB 1993 (StALU/A1453/135); Jahresbericht SFIB 1994 (StALU/A1453/556).

62 Protokoll der Vorstandssitzung SFIB vom Freitag, 22 April 1994 (StALU/A1453/135); Jahresbericht SFIB 1994 (StALU/A1453/556). The distinction between national and intercantonal initiatives highlights the complexity of educational governance in Switzerland. The three political levels – communal, cantonal, and national – are complemented by institutionalised intercantonal coordination efforts.

Needs Education of the EDK was dissolved at the end of 1995 and its tasks transferred to the SFIB. The special education portfolio was now financed by the SZH which had already been a member of the now dissolved study group. The SZH concluded a contract with the Film Institut, with which the SFIB continued to be part of.[63]

The transfer of the software portfolio from the *Téléthèses* Foundation to the SFIB Centre did not create any particular momentum in the 1990s. The nature and scope of the SFIB Centre's involvement in special education issues remained rather similar until the end of the millennium. Indeed, starting from the autumn of 1998, there was even a six-month gap in the special education dossier. The main task of the SFIB specialist in special education was to provide telephone and written advice to interested people who contacted the centre. The SFIB was also responsible for in-service training and events at educational institutions. The centre's own public events included inputs on developments related to special education. Conversely, the SFIB Centre also tried to be present at special education congresses and helped publishing books dedicated to computer use by people with disabilities. Finally, at the end of the millennium, it launched a special needs section on its website. The SZH remained on board as sponsor and contact for special education issues.[64]

In the 1990s, members of the disability rights movement were still ambivalent about the latest technological boon. In a published discussion between a group of people with disabilities and some experts for electronic aids in 1992, they saw the implementation of new devices and software as a "balancing act" between the pros and cons of technology use. The gains in autonomy for people with disabilities brought about by new technologies, particularly computer-based technologies, were welcomed, and even a glossary of the most important terms in the field of "assistive" technology was published in the main magazine of the Swiss disabilities' rights movement. At the same time, the panellists emphasised that there was no one-size-fits-all solution and sought to ensure that advanced technologies did not become a barrier, but that the wishes, needs, and life plans of people with disabilities were at the centre of all future developments.[65]

Concluding Remarks

Computers held both promise and threat for people with disabilities. On the one hand, computer-based technologies seemed to offer many opportunities to improve social, economic and educational participation. Depending on the nature of the disability, computerised workstations seemed to facilitate access to the labour market. Speech computers offered new ways for people with severe speech disabilities to interact with their environment and reduce dependency on others. Early forms of online communication promised to enable people with motor disabilities to travel long distances in a

63 EDK Jahresbericht 1995, 50–51; Jahresbericht SFIB 1995 (StALU/A1453/556).

64 Jahresbericht SZH 1999, p. 15; Riccardo Bonfranchi, ed., *Wir können mehr als nur Schrauben verpacken. Der Einsatz des Computers bei Menschen mit geistiger Behinderung.* Medien und Bildung 1 (Bern: Film Institut, 1995); Elisabeth Schweizer and René Albertin '*Jetzt bin ich dran…'. Handreichung für den Computereinsatz in der Schule.* Medien und Bildung 2 (Bern: Film Institut, SFIB, CBT Schweiz, 1995).

65 "Gratwanderung ins Hightech-Paradies: Gespräch mit Bernhard Rüdisüli Hofmann, Röbi Kohli, Heinz Bossert und Daniel Brönnimann," *Puls: Drucksache aus der Behindertenbewegung* 34, no. 3 (1992), 21–27; "Lexikon aus Cyberland," *Puls: Drucksache aus der Behindertenbewegung* 34, no. 3 (1992), 37–38.

short time, at least virtually, and educational software seemed to optimise learning for children and adults with intellectual disabilities. On the other hand, computers threatened to destroy jobs, increase individual productivity and thus worsen the economic participation of people with disabilities. From the perspective of social responsibility, it was seen as crucial to ensure that the use of computer technology did not finally become a constraint for children and adults with disabilities.

Which developments and outcomes were considered possible depended, however, not least on the economic and political contexts in which the various stakeholders operated. Like the United States, Switzerland has been characterised as a "liberal welfare state" in the now-classic Esping-Andersen terminology. Although clear trends toward the continental model have emerged in Switzerland since the 1970s, the welfare state retained many of its liberal features.[66] The same persistence (but also a slow adaptation to international standards) shows in the highly decentralised public education system with strong fiscal federalism, which significantly limits the possibilities for central control.[67] Accordingly, the development of assistive technologies for young learners and educational software for children and adults with disabilities in Switzerland was driven by bottom-up initiatives and soft inter-cantonal coordination.

As in the US, the initiatives in Switzerland were shaped less by utopian ideas and grand visions than by practical projects aimed at directly enhancing participation. Unlike the United States, however, Switzerland did not have large computer companies with dedicated internal disability departments or close ties to the disability rights movement. On this key point, developments in Switzerland differed significantly from those described by Petrick regarding the United States. The first endeavours were mainly driven by private disability organisations, foundations, educators and dedicated technical experts in French-speaking Switzerland. They, initially solely focused on hardware for people with physical disabilities, particularly voice computers and other "assistive" technologies. These seemed to offer great opportunities, especially for the education of people with disabilities.

While rapid successes and public attention were achieved in this area, the issue of educational software for people with intellectual disabilities proved to be much more complex. The dynamic field of software development did not seem to be able to be organised on a purely regional basis. Established actors and institutions in special education, along with Swiss disability organisations, therefore joined forces with inter-cantonal and national stakeholders who already had years of experience advocating for educational computing and computer-assisted instruction. However, this did not generate any particular momentum. The coordination efforts failed to sustain the dynamism that had characterised former regional and local initiatives. This is where the limitations of a weakly subsidised inter-cantonal coordination became evident, particularly in a complex field like the development and provision of educational software.

This article focused almost exclusively on the interventions and negotiations of established organisations in Switzerland. The role of people with disabilities in the development of new computer-based technologies or their experiences in using beta versions of new tools was not considered. This would require other historical sources

66 Trampusch (2010); Bonoli and Fossati (2023).

67 Giudici and Emmenegger (2023).

and methodological approaches that would reveal the educational, social and economic role of computers in the lives of people with disabilities. The historical analysis presented here provides some starting points for such a follow-up study.

Acknowledgements
This article is a belated contribution to the project "Education and the European Digital Agenda: Switzerland, Germany, and Sweden after 1970," funded by the Swiss National Science Foundation (SNSF, project number 182217), which concluded some time ago. Only recently have I felt adequately prepared to address this topic, which recurred frequently in our historical sources. I am grateful to Raphael Zahndt for his feedback on an earlier draft and I would like to thank the reviewers and editors for their helpful comments and suggestions. Any remaining errors or misinterpretations are my sole responsibility.

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