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Digital Education

In *The Lawnmower Man* (Brett Leonard. USA, 1992), the mentally challenged Jobe is asked by Dr Angelo to sit in a chair in the high-tech science wing of a secret military building. For weeks, the researcher has been working with his human "guinea pig" Jobe, a gardener's assistant, whom he is trying to enhance mentally and physically. This time, Dr. Angelo wants to teach the illiterate Jobe directly at the military base. After Dr Angelo has connected Jobe's brain to a computer through a bunch of electrodes, he now downloads various disks on to Jobe's brain. Thanks to chemical stimulation, Jobe is able to memorize all the information within a few hours, as if his brain were nothing more than a large hard drive. Jobe gets into a real learning rush.

"I want more information!" he says and asks for more CDs. Dr Angelo tries to slow Jobe down. Learning does not only mean passively storing knowledge, one also need time to think about what one has learned in order to reflect on it.

"Man," Dr. Angelo tries to explain to Jobe, "may evolve a thousand-fold through this technology, but the rush must be tempered by wisdom."

But Jobe does not agree. He is convinced that this technology is just perfect and is all he needs: "This technology is simply a route to powers that conjurers and alchemists used centuries ago. The human race lost that knowledge and now I'm reclaiming it through virtual reality."

Interestingly, later on, Jobe will do everything to avoid others profiting from this technology, keeping the Internet and the virtual learning process just to himself.

Is the film to be seen as a warning to what happens if—in this case—only one person has access to the Internet and virtual reality and others do not?

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Already today over the world people and governments are complaining about a "digital divide", a term coined during the Clinton years. A lack of access to digital means and lack of digital competence creates not only a division between groups but also promotes economic inequality.

Many efforts have been made to bridge the gap of the digital divide. Therefore, "digital offensives" concentrate on installing the necessary infrastructure, providing hard- and software for youngsters. This is somewhat ironic as it is precisely this older generation, called the *digital immigrants* who are supposed to teach the younger generation, the *digital natives,* a language they have themselves only painstakingly learned, while the learners have mastered it playfully from childhood.

However, mastering the programming is more typical for the generation of *digital pioneers* of today's 50- to 70-year-olds. With the increasing perfection and complexity of commercial offers of digital products, such as website programs for example, the possibilities for amateurs to further develop offered software systems The user-friendliness of these products is so highly developed that the unwillingness of younger people to deal with programming itself is understandable. Here, a development that is familiar from much older technologies repeats itself: in the first decades of motorization, for example, it was quite desirable (and sometimes necessary for survival) to be familiar enough with the technology to be able to intervene even in the event of an engine or clutch failure. Today, even licensed car repair shops increasingly limit themselves to replacing parts—repairing a car is often no longer sensible and sometimes not even possible. Today's drivers no longer need to understand anything about the technology we entrust ourselves to. It would hardly help us in practice.

In the case of digital technologies, moreover, the change of products is so rapid that user knowledge, once acquired, must be permanently renewed and is therefore not very suitable as school material.

If Wilhelm von Humboldt, the great philosopher and theorist of education (and founder of the Humboldt University in Berlin), was right in his belief that school knowledge has a canonical character—in contrast to scientific, research-oriented knowledge—and that this is still true today, then practicing how to use digital products would not part of the meaningful school subject matter. So what could digital education be? Or rather: What goals (knowledge and competencies) should it be geared towards?

16.1 Lifeworld and Non-lifeworld Orientation Knowledge

By "orientation knowledge," we mean the knowledge required to be able to make coherent decisions in certain areas. The core of this orientation knowledge is grounded in the lifeworld. Thus, before and independently of school education, we learn early on to interpret a person's behavior, facial expressions, gestures, voice, etc. as an expression of their emotive attitude, their wishes, fears, hopes, and their empirical and moral beliefs. All everyday interaction between people is based on the reliability of what is called "folk psychology." This kind of everyday psychology is not rendered obsolete by psychology as a science; rather, psychology must be compatible with our lifeworld orientation knowledge. This is where psychology finds its validation.

Folk psychology is not devalued by the digitalization of part of our communication. On the contrary, correctly interpreting people's expressions and behaviors—even if they are digitally mediated—becomes a condition of successful interaction and communication (not only in the World Wide Web). A particular problem is that this ability to interpret behavioral expressions as expressions of intentions and beliefs is exploited to make pseudoagents appear. The use of numerous bots in election campaigns, for example, is an example of this. The more perfect the simulation of human behavior and emotional expressions, the more difficult it becomes to distinguish between digital simulation and human intentionality. The challenge of folk psychology is thus becoming greater, not less, as a result of digitalization. Digital technologies may facilitate psychological research in science, but they cannot replace empathy and sensitivity. This is also due to the fact that interpreting a person's behavior is not primarily a cognitive process, as psychological research has undoubtedly made clear recently.

It is a mistake to assume that orientation knowledge is limited to the realm of everyday life. Physical findings and models enable a more or less reliable prediction of weather conditions and have penetrated everyday knowledge via generally available apps. Psychological research enables therapeutic practices, and here too the transition to lifeworld practice is fluid. For example, the popular recommendation in counselling literature to make a list of positive qualities of one's partner in the event of a relationship crisis stems from scientific psychology. Numerous other connections between scientific research and lifeworld orientation knowledge could be cited.

16.2 Expertise

Digitization is changing the way data is made available and is being archived. Wide areas of the humanities, historical, and philological research (sources, texts, interpretations) are increasingly made generally available. Previously time-consuming research and travel, as well as hours spent in special libraries, are now in many cases superfluous. The complete digitization of museum collections, which is currently underway, but also the digital documentation in the sciences will further improve this situation. As the time and financial effort to acquire data decreases, this form of accumulated knowledge will be devalued. This means that knowledge of methods will become more important than knowledge of data. This is already reflected in study programs, in that entire areas of knowledge are considered dispensable and are replaced by methodological training.

As sensible as this shift in emphasis is in the higher education sector, it is also associated with a potential danger, namely, the loss of professional competence. There could even be a rude awakening from the digital dreams.

16.3 Canon as Common Background Knowledge

How can it be that not only methodological knowledge but also expert knowledge is still regarded as highly valuable in times of free availability of every conceivable data? To understand this, we need to consider the role that shared background knowledge plays in communication. For us to be able to communicate, it is not only necessary that we develop our arguments according to essentially a common logic but also that we can refer to common, undisputed beliefs (facts). In order to be able to judge what still needs to be clarified and by what means, if any, it should be clarified, one must already have a sound body of knowledge and experience. Anything else would be like stabbing in the dark. In fact, many internet searches have just this character. By chance, new and interesting aspects may come to one's attention, data one was not looking for at all may turn out to be relevant, literature may turn up whose existence one had not expected—but at the same time, many such searches get lost in the variety of offers on the internet if they are not guided by solid professional competence.

Quite independently of the digitization of human knowledge, there have been calls for the abandonment of the idea of canonical knowledge for other reasons of educational theory, especially in the USA and other multicultural societies. Against the idea of a canon of knowledge that focuses on education in general and on specific fields, the diversity of educational traditions and their different evaluations were put forward and the concern was expressed that any canonization marginalizes and devalues what does not belong to the canon. The US high school system in particular is correspondingly cautious with curricular requirements. But canonical knowledge has also been criticized from the perspective of emancipation through education as a cultural barrier to social advancement. From a gender perspective, it was also criticized that it was mainly old white (and dead) men who shaped and dominated the canon of knowledge.

As worthy of consideration as these objections are: If the conclusion is drawn that canonical knowledge can be dispensed with, this is a mistake in educational theory. Without common background knowledge, without shared beliefs that do not need any further justification and have passed the reality test, even dissent and cultural differences cannot be discussed. One can characterize the role of the canon in analogy to the role of lifeworld knowledge in our everyday practice. Just as we draw on the shared attributions of emotive and cognitive attitudes (feelings and beliefs) in our everyday practice, understanding in certain disciplines or professional practices requires shared, unquestioned professional knowledge and competencies. Even if the selection of the canon is inevitably arbitrary in any given case, it is nevertheless indispensable in the practice of understanding and interaction. Professionalism does not become obsolete through digitalization.

16.4 Judgment

In well-stocked university libraries, a lot of work goes into sorting the collections in a way that promotes access to what is relevant in each case. The arrangement of library collections is itself the result of a separate academic competence, library science. The organization of scientific publications via book series and journals also follows the pattern of strict selection and sorting by professional competence. This pre-structuring is lost in the World Wide Web. The links essentially follow the statistical distribution of user behavior and thus reproduce associative concatenations whose systematic significance is often enough extremely low. The search engines, which do not disclose their algorithms, further obscure the situation by taking commercial interests into

account. The recent abandonment of the net neutrality requirement[1] by the US government will further strengthen the influence of commercial interests on the structuring of data.

The digitization of data provision means that numerous "gatekeepers," such as librarians, publishing editors, journal reviewers, newspaper, TV or radio editors, are no longer needed. This means that independent judgment is increasingly required. Data provision does not replace the ability to assess data and check whether it is reliable and what arguments can be based on it.

The World Wide Web confronts us with a far greater variety of interpretations, theses, theories, and ideologies. Forming an opinion is therefore becoming more demanding. The old humanistic ideal of education, as formulated in Plato's *Theaetetus dialogue* 2500 years ago, thus gains new relevance. People who tend to follow suggestively formulated beliefs or shield themselves from inconvenient facts will quickly lose their bearings in the new digital data universe. They lock themselves into the "bubbles" that social media, in particular, provide, or stagger back and forth through the data world driven by different influences.

As a result of digitalization, we do not live in a knowledge society, but at best in a data society, or better: in a data economy. The availability of data characterizing individuals' purchasing preferences and behaviors, combined with access to it via social media or other communication channels, has become a successful business model that finances internet giants, whose dominant position in the market has de facto made them an essential part of the infrastructure of communication data, flows of services and goods. This Big Data economy, whose best time will possibly only come with the expansion of highly automated individual transport, is not a knowledge society because knowledge consists of justified and true beliefs. Knowledge requires power of judgment. Only the evaluation, classification, and interpretation of data can constitute knowledge. The great challenge of education in times of digitalization is to transform the current trend toward a data economy into a development toward a knowledge society.

[1] Net neutrality is the requirement to treat all data on the Internet equally and to ensure access to the Internet in which people are not discriminated against.

16.5 Personality Development

Has the central goal of humanism, namely, the formation of personality, become obsolete in times of digitalization? The answer must undoubtedly be: No, on the contrary. The development of personality is more relevant today than ever before, and its importance will continue to increase due to the digitalization of our communications and interactions, transfers of data and services and their production (keyword: Industry 4.0).

The reason for this is obvious: the more diverse, volatile, and complex personal ties, community formations and ways of life become, the greater the demands on the individual ability to be the author of one's own decisions, beliefs, and projects. The digital possibilities create new freedom, trigger an enormous dynamic of change not only in economic but also in cultural conditions, and therefore also strengthen the autonomy potential of individuals and at the same time put them under the permanent stress of a growing need for orientation.

In the digital lifeworld of the future, personal strength is required more than ever before in human history. The education system must adapt to this. The imparting of knowledge and skills must serve the highest goal, namely, the strengthening of the adolescents' personality. The focus must not be on the passive absorption of prefabricated material but on the active mastery of complex judgments and decision-making structures. However, the current trend toward standardization, acceleration of teaching, and schooling in the tertiary education sector is going in the opposite direction: the time for reflection is becoming scarce, the abundance of material enforces passive reception, while the social and ethical competences, as well as the artistic and creative, the manual and technical are diminishing. The unity of the person, the respect for the human individual with its different facets, talents, interests, and abilities does not receive the necessary attention. Ideally, the child, the adolescent, the young adult finds themselves on the educational path. Not by absorbing as much knowledge as possible on their own, like the lawnmower man Jobe, but by making use of their freedom on the basis of their own decisions and allowing their personality to mature in often painful processes of trial and error. Digital technologies can support this process of personality development in the classroom. If used competently, they are quite suitable for

promoting creative abilities and creating knowledge connections that are excluded in parceled school lessons.[2]

After his digital learning crash course, Jobe's head is now filled to the brim with data and information. However, he does not feel very good about it. First, he suffers from headaches, then from delusions: He can distinguish less and less between the real and the virtual world and mutates into a despotic tyrant. He has no reliable knowledge of orientation. He lacks empathy and sensitivity and is far from having a mature personality. The only truly sound expertise he possesses is the knowledge of how to mow lawns—that is, the knowledge from the job he held before his digital brainwashing. Also, all the orientational knowledge he has is that of mowing lawns. He thus acts accordingly—like a brutal lawnmower. He wants to mow down the world and the people, so to speak, in order to keep them uniform, so he can reign over the world like he reigned over a lawn.

The information that Jobe has accumulated has not made him a better, but worse. He is a person, who has lost his moral compass. Had he received his information in moderation and with enough time for reflection, things might have been different. An uncontrolled digitalized education that only focuses on the blind accumulation of information, on quantity instead of quality and does not pay attention to promoting orientation knowledge, specialized knowledge as well as power of judgment and personality formation, is bound to fail miserably.

[2] For example, the "Atlas" software developed by the Parmenides Foundation (https://www.parmenides-foundation.org) as a learning platform facilitates the comprehension of knowledge spaces beyond the parcelling of subjects and methods practiced by academic institutions by making logical connections and categories accessible for analysis with the help of taxonomic graphs.