

# Passionate education with AI

A CONVERSATION WITH OLAF-AXEL BUROW\*

**AI, especially ChatGPT, is more of a nightmare for teachers. In your manifesto', you talk about "passionate education with AI". How does that fit together?**

**Burow:** There are several levels here. On the first level, AI offers the opportunity to simplify routines on the teacher's side, for example, certain recurring tasks can be delegated to AI. We tested this in the vocational school sector by giving the AI the task: "Create a teaching unit on the topic of the complete economic cycle." It took 5 seconds, and we got a complete teaching unit. We gave this to Heinz Kaiser, a lecturer from the teacher training seminar in Oldenburg, Germany, for examination. He said the result was better than what his trainee teachers usually produce. We then asked the AI to create a basic text on this topic. It delivered this as well, and when we checked it, it was fine. However, Kaiser noted that it was too complicated for his trainee teachers; they wouldn't understand it. Accordingly, we asked the AI for a text in plain language. That took approximately 10 seconds.

**"AI is a cooperation partner"**

**What would be a specific skill that teachers need to learn in this case?**

**Burow:** The crucial skill is being able to formulate good prompts. The American professor of education Ethan Mollick has written a great book: *Co-Intelligence: Living and Working with AI*<sup>2</sup>. In it, he sets out 4 rules for using AI: 1. Always invite AI to the table. 2. Be the human in the loop. 3. Treat AI like a human. 4. Assume this is the worst

AI you will ever use, because the versions are constantly being optimised. Mollick argues that we should see AI as an interaction partner, as a kind of co-intelligence. Many people think AI is an encyclopaedia. But AI is not an encyclopaedia; it hallucinates, has errors and so on. Rather, it is a cooperation partner. And if you deal with it creatively and critically, you can make many things easier and sometimes even come up with new ideas.

**How can AI become a partner in concrete terms?**

**Burow:** I'm publishing a new book this year. I asked *ChatGPT* for suggestions for 10 sensational and 10 serious titles for this text. That took a few seconds. I got 20 titles and selected one of them. Most teachers – with the possible exception of in the German-speaking education discourse well-known people like Hendrik Haverkamp<sup>3</sup>, Björn Nölte<sup>4</sup> and others – do not yet see such opportunities for creative cooperation and are rather afraid of this unknown territory. Conservative university lecturers in Germany such as Ralf Lankau<sup>5</sup>, for example, are already working on arguments in favour of keeping AI out of schools as much as possible. However, this hasn't worked with mobile phones and will work even less with AI because children, including my daughter, who has graduated from high school last year, are increasingly acquiring large parts of their knowledge with AI support. On the side, they are acquiring skills for the constructive use of this new tool.

**AI will dramatically change schools**

For teachers and learners, there are not only aids for lesson preparation, but also feedback bots. Hendrik Haferkamp, teacher at a grammar school in Gütersloh, Germany, for example, has developed the *Fiete-AI*<sup>6</sup> tool, which provides great, personalised, tailored feedback and can positively affect learning. There is also the AI learning platform *Khanmigo*<sup>7</sup> by Salman Khan from the Khan Academy, who supports the *Teach AI*<sup>8</sup> initiative, among others, and seeks to realise an old vision of Benjamin Bloom. Back in 1984, Bloom came up with the idea in *Sigma*<sup>9</sup> that we could bring children of different ability levels to the top if we were able to provide each child with a personal tutor. Khan claims that we can now do this with AI and his *Khanmigo* system. The trend at the moment is in that direction. For example, the Siebengebirgsschule in Bonn, a German school that works with special needs pupils using such systems, recently won the German School Award<sup>10</sup>. In other words, we are currently experiencing the forerunners of a tsunami that is opening up a whole host of opportunities and will dramatically change schools.

**"You can do almost anything with AI, good and bad"**

**So is AI the ultimate tool?**

**Burow:** You should realise that AI is a universal tool. You can do almost anything with it, good and bad. For example, in warfare in the Middle East conflict, extremist leaders are being eliminated with AI support and facial recognition. In other words, the use of AI is ambivalent and can bring great benefits as well

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as create great danger. The crucial point, which I also describe in my manifesto, is that – to the extent we spend our time behind flat screens – we are also experiencing a renaissance of pedagogy. If we can relieve ourselves of routine activities such as practising, preparing, and checking, we have much more time to focus on the children, to establish personal contact and for everything that is actually the task of educators. In a show of the German radio channel Deutschlandradio<sup>11</sup> Björn Nölte calculated how much time teachers waste calculating grades, i.e., working through tasks that have absolutely no benefit for learning. And it is not only in this area that many opportunities will open up.

### *What is the second level you mentioned?*

**Burow:** The other level is that of the students. Salman Khan had already set up a learning platform some time ago on which pupils are assigned customised tasks. This is about differentiation: I was a primary school teacher for 2 years and tried to differentiate on 2 levels. You can do that for half a year, then you're overwhelmed. Nowadays, we would have to differentiate on 20 levels. Nobody can do that. But with this system, we can. We can assign

tasks to pupils according to their level of development and provide feedback that supports learning.

The Hattie study<sup>12</sup> investigated what really works in schools and identified factors and effect sizes from 1 to 138 where 1 has an extreme effect and 138 has no effect. It found that the teacher as a person is the most important influencing factor, while homework, for example, was ranked 87th. Homework often causes lasting damage to the working relationship between home and school but otherwise makes little sense.

### *“Personalised learning environments and feedback systems”*

Very few teachers give homework in a customised way but rather across the board. Good pupils don't need it. Low-achieving pupils or pupils from socially disadvantaged backgrounds sit at home alone, are discriminated against, and work on tasks that are of no use to them. AI offers the opportunity to install personalised learning environments and feedback systems so that students can be optimally guided according to their level of performance and thus get into a flow channel, so to speak. That is my hope for the targeted use of AI tools.

### *Entering the flow channel*

#### *Can you describe the flow in more detail?*

**Burow:** The Hungarian-American psychologist Mihály Csikszentmihályi has shown that if you take on a challenge of your own choosing, where the demands are slightly higher than your own skills but not too high, you enter a flow channel with an optimal level of challenge, and learning is therefore fun. The problem for around 25% of primary school pupils is that they have already received around 125,000 more negative feedbacks than positive ones by the time they are 4 years old. As soon as they attend school and are assessed with grades, many experience a traumatic process of devaluation and excessive demands. From a flow perspective, this means they face a challenge they did not choose themselves, are put under massive pressure, and constantly receive negative feedback, verbally and via school grades. There is no more stressful situation than this, and too many drop out, often suffering health problems.

### *“Do what you are passionate about”*

The counterargument of many conservatives is that when using such support tools and focussing on strengths, there is a risk that pupils will be under-challenged and will avoid resistance, so to speak, because they become accustomed to learning situations that are fun. I wouldn't be afraid of that, though. Let's take a look at the secret of success of Nobel Prize winner in chemistry Benjamin List. When asked about his secret to success, he said: “Of course, we work hard. But I always encourage my people to follow their enthusiasm. I tell them: Do in life what you are passionate about. It shouldn't feel like hard work. And you can actually give that as advice to everyone.”<sup>13</sup>



III. 1: AI at school: Pupils can playfully work with various AI tools, solve problems or even design objects

If we create flow-promoting learning environments and formats in this sense, learners are intrinsically motivated and are always looking for new challenges for themselves. For schools, this realisation means overcoming the one-sided focus on curricula or at least opening them up to make more room for self-selected challenges. If I am interested in something and can follow it at my own pace, then I am unstoppable. Khan's learning platform can effectively support learners in overcoming self-selected challenges. The function of the rewind button is central: if you get stuck, you can rewind [the learning video], watch it again or take a different approach until you understand it. The educational psychologist Joseph Renzulli, developer of the 3-ring model of giftedness, emphasises that everything starts with interest, supported by "the 3 E's": enjoyment, engagement, and enthusiasm. This describes the crux of the matter. My hope with AI would be that we can personalise and outsource routine activities, thereby creating more space for educational encounters and talent development.

### How could children's media support this process for more passionate education?

**Burow:** My favourite example, which has been awarded the German School Prize, is the Alemannenschule in Wutöschingen. It has practically abolished teaching in the traditional sense because the headmaster, Stefan Ruppaner, recognised this: School is less about teaching and more about learning. And to learn, according to Maria Montessori, you need a prepared environment that challenges you to learn. Nowadays, the prepared environment is both analogue and digital, and you can't play them off against each other. It's about creative complementarity: where is analogue better, and where does digital support us?

This raises the question of where digital support could be provided in primary

schools. At the Alemannenschule, they start using iPads in year 3, not before. But, right from the start, the pupils have their own workstation in the learning studio, they work at their own pace, and they are supported by skills grids and a variety of analogue and digital learning materials. Textbooks have largely been abolished. Encouraged by concentrated input phases, the pupils work through the content by alternating between individual work and project-orientated, cross-age learning teams. From year 3 onwards, pupils are assigned to interest-orientated "clubs" in the afternoon. The wording is important here: Who likes to join a "working group"? A self-selected "club" has its own motivational power. At this school, pupils can develop a talent- or inclination-orientated profile from the beginning and can combine analogue with digital. A creative club is also possible, in which pupils can playfully work with various AI tools, solve problems, or even design objects (Ill. 1).

For Mollick, the use of AI is about practising co-intelligence and teamwork. Schools are still predominantly organised in such a way that pupils sit and work alone and are not allowed to interact with their classmates enough. Too often, you hear a "Be quiet!" This is no longer appropriate and hinders children's natural ability to cooperate creatively. In my theory of the "creative field" (Burow, 2015)<sup>14</sup>, I have shown how different skills can complement each other, develop further and contribute to something new through project-orientated cooperation between people. Given the rapid pace of change in our society, it is becoming increasingly important for pupils to develop future skills as early as possible and to be empowered to "intervene in shaping the future". To give an example: The Galileo Primary School in Stuttgart, Germany, regularly organises future workshops in the 3rd grade, in which primary school pupils can help shape a small future project.

### Overcoming barriers and unleashing a creative spirit

They are already able to help develop AI tools and objects, design films, and the like, and will increasingly be able to do so in the near future. Used sensibly, this could overcome barriers and unleash a creative spirit. ■

### NOTES

<sup>1</sup> Burow, Olaf-Axel (2024). *Mit KI zu leidenschaftlicher Bildung. Ein Manifest*. Weinheim: Beltz.

Burow, Olaf-Axel (2015). *Team-Flow – gemeinsam wachsen im Kreativen Feld*. Weinheim: Beltz.

<sup>2</sup> Ethan, Mollick (2024). *Co-Intelligence: Living and working with AI*. London: Virgin Digital.

<sup>3</sup> <https://www.faz.net/aktuell/karriere-hochschule/ralf-lankau-ueber-die-gefahren-von-chatgpt-in-der-schule-18969496.html> [14.11.24]

<sup>4</sup> <https://www.zeit.de/2024/04/ki-schule-chatgpt-unterricht-lehrer> [14.11.24]

<sup>5</sup> <https://deutsches-schulportal.de/unterricht/video-zeitgemaesse-pruefungskultur-welche-unterstuetzung-bietet-ki/> [14.11.24]

<sup>6</sup> <https://www.fjete.ai/>

<sup>7</sup> <https://www.khanmigo.ai/>

<sup>8</sup> <https://www.teachai.org/>

<sup>9</sup> [https://en.wikipedia.org/wiki/Bloom%27s\\_2\\_sigma\\_problem](https://en.wikipedia.org/wiki/Bloom%27s_2_sigma_problem) [14.11.24]

<sup>10</sup> <https://www.deutscher-schulpreis.de/presse/deutscher-schulpreis-2024-fuer-bonner-foerderschule> [14.11.24]

<sup>11</sup> among others: <https://www.deutschlandfunkkultur.de/programm?drsearch:date=2024-10-05> [14.11.24]

<sup>12</sup> Hattie, John (2009). *Visible learning for teachers*. London: Routledge.

<sup>13</sup> from: „Das Experiment seines Lebens“ - Ein Interview mit Benjamin List. ZEIT Nr. 51/2021, translated from German by the editorial team.

<sup>14</sup> Burow, Olaf-Axel (2015). *Team-Flow. Gemeinsam wachsen im Kreativen Feld*. Weinheim: Beltz.

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