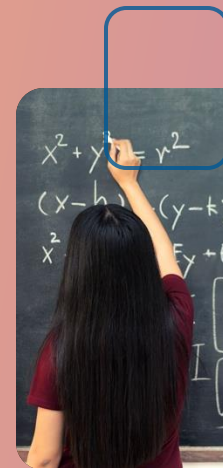


REPORT

# DISRUPTIVE EDUCATION SCENARIOS

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SURF



## INTRODUCTION

This report presents several current education themes. Given the rapidly changing environment and the impact of technology and innovation on our daily lives, we believe it is important to understand how these developments can affect the future of education. As final-year pupils in pre-university education, we are aware that the future concerns us directly. That's why we believe it's essential to understand what changes we can expect and how this may affect our education.

The reasons for this research are our interest in the subject and our realisation that education is constantly changing. Technology has radically changed the way we learn, communicate and collaborate, and we want to understand how these changes will continue to evolve. For us, this project is an opportunity to gain insight into different trends in education, but also an opportunity to refine our own understanding of the future of education.

With this report, we hope to give an overview of the current situation and act as a source of inspiration for further discussions about the future of education. We want to encourage education institutions, students and fellow pupils to think about how they can adapt to the rapidly changing environment.



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# "TECHNOLOGY OFFERS REAL OPPORTUNITIES TO IMPROVE STUDENT WELFARE"

— ERIK WONING, GRAFISCH LYCEUM ROTTERDAM

## CURRENT SITUATION

Students' poor mental welfare right now is attracting more and more attention. The main causes are a significant increase in stress, exhaustion, fatigue and substance use<sup>1,2</sup> and escalating study demands. The fast pace and pressure to perform overwhelm many students. The government and other authorities are taking action to counteract these problems. For example, all types of drugs have been banned from public buildings<sup>3</sup>. Efforts are also being made to reduce discrimination and bullying in education institutions<sup>4</sup>. These actions offer some relief, but the problem has not yet been fully solved. The worrying increase in the number of reported suicide attempts<sup>5</sup> illustrates that many students are under too much mental pressure.

Social media also has an increasingly negative impact on students' mental health<sup>6</sup>. The use of social media can lead to a distorted self-image and may put pressure on students to constantly meet certain expectations. The combination of all these factors makes it a challenging time for the mental welfare of many students.





## CONTINUATION

If these developments continue, this indicates that students' mental health will continue to decline, which is concerning for their welfare. An important factor in this is the rise in student costs<sup>7</sup>, which brings a great deal of financial pressure. These rising costs increase stress and anxiety among students. They are also likely to result in poorer performance, more study delays and ultimately higher costs for both institutions and the students themselves. Students can end up in a vicious circle, in which their financial worries hinder their (academic) progress. In addition, the use of smartphones is increasing, mainly because of the digitisation of our society<sup>8</sup>. This contributes to more uncertainty among students, as they are constantly exposed to social comparison, negative messages and the pressure to always be available.

## DISRUPTION

Game Based Learning (GBL) is increasingly used to make studying fun. This innovative form of learning enables students to acquire new knowledge and skills through game-like learning resources in a more fun and interactive way. Examples of GBL in primary and secondary education include the use of platforms such as Kahoot and Sula. This playful approach motivates students and makes learning less energy-intensive, which ultimately reduces stress. In addition, GBL focuses on improving skills and acquiring new knowledge, rather than concentrating purely on achieving results. This reduces the performance pressure students often experience, which in turn contributes to a more positive learning experience and better mental welfare.

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## STUDY FUNDING



**"ALTHOUGH STUDYING IS BECOMING MORE EXPENSIVE, STUDENTS ARE SEEING LESS MONEY GOING INTO THEIR ACCOUNTS FROM DUO."**

- NU.NL<sup>9</sup>

### CURRENT SITUATION

Students pay an average of 2,530 euros in tuition fees per year at a research university or university of applied sciences<sup>9</sup>. In senior secondary vocational education (mbo), the average annual cost is 1,357 euros<sup>10</sup>. These amounts have increased in recent years, while the cost of rent, groceries, leisure activities and transport have also risen significantly due to inflation. On average, a student's living expenses amount to around 1,303 euros per month on top of the tuition fee<sup>11</sup>. This means average student living expenses come to 15,000 euros per year, some of which are reimbursed by the government.

This makes living independently extremely difficult for students who don't get financial support from their parents. This barrier stops many students from studying far away from home, as the costs are often infeasible without additional support.



## CONTINUATION

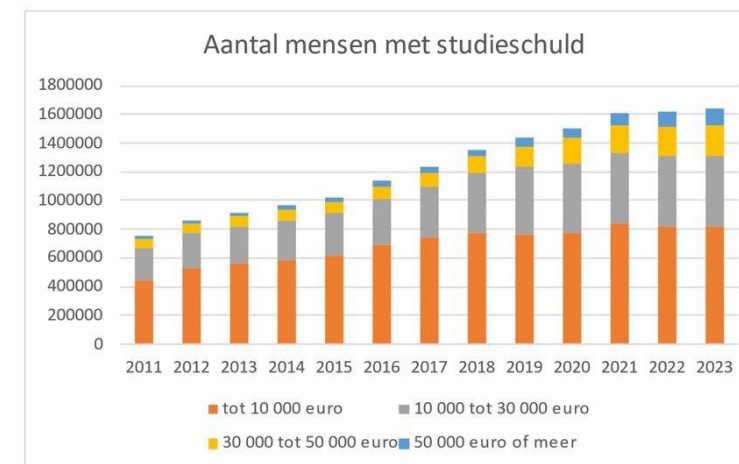
If the current situation continues, it will lead to an even higher increase in student costs<sup>12</sup>, making it even more difficult for students to live away from home, especially if they don't have financial support from their parents. The cost of accommodation and living in larger cities, such as Amsterdam, Rotterdam and The Hague, will be almost insurmountable for many students<sup>13</sup>. Students who nevertheless decide to continue to study in these cities will experience more stress from having to work longer hours or even take out huge study loans to keep their heads above water. This financial pressure may affect their mental and physical health as well as their (academic) performance. As a result, the gap between students with parental financial support and those struggling with their funding will increase.

## DISRUPTION

The Netherlands recognises the importance of good, affordable education and has decided to invest more money in education and to adopt the system used in Sweden. This means higher taxes, mainly for people with high incomes<sup>14</sup>. Making education free of charge will cost the government an additional 2 to 4 billion euros per year<sup>15</sup>, but it will improve the economy of the Netherlands due to the resulting increase in knowledge and skills. It will contribute to growth and innovation, which will hugely benefit the Dutch economy. This was also the case in Sweden. When during the 1990 crisis, the government decided to invest more money in free quality education, Sweden's economy eventually made tremendous progress, even though this development cost a lot of money initially<sup>16</sup>.

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## QUALIFICATION



**"SO-CALLED 21ST CENTURY SKILLS ARE BECOMING INCREASINGLY IMPORTANT. IF YOU MASTER THEM WELL, YOU CAN BE SUCCESSFUL ALMOST ANYWHERE"**

— ERIK WONING, GRAFISCH LYCEUM ROTTERDAM

## CURRENT SITUATION

Many companies are currently experiencing staff shortages, which often lead employers to reduce their requirements for hiring staff. They mainly do this by relaxing the work experience requirements<sup>17</sup>, as there simply aren't enough qualified staff available. Employers are often willing to hire candidates with less experience but with potential to grow. However, qualifications<sup>18</sup> remain a hard requirement. This means that obtaining a qualification is currently even more important than work experience, as companies are often looking for people with the right theoretical knowledge, even if they are lacking in practical experience. In some cases, employers are so desperate for recruiting new staff that they are even willing to pay for future employees' studies. This is a direct response to the enormous staff shortages that many companies are facing, and it underlines how serious this problem has become in today's labour market. Staff shortages have made companies more flexible in their requirements. They see a qualification as an important but often replaceable condition, which is causing a shift in the traditional role of work experience and training in the recruitment processes.





## CONTINUATION

Qualifications are becoming increasingly more important than work experience. A qualification shows that an employee has discipline, wants to develop themselves and has knowledge in a certain field<sup>19</sup>. This can now also be seen in the number of students in higher professional education, which is dwindling fast<sup>20</sup>. Many of these students move on to a research university or quickly start jobs in combination with senior vocational education to earn money and gain work experience sooner. More than half of all occupations are likely to change due to AI<sup>21</sup>, which means that companies are mainly looking for people who aren't easily replaced by AI. This means that employers will seek out people with a qualification even more, as they have specific knowledge and skills. Having a qualification will therefore provide greater job security.

## DISRUPTION

Companies are changing the way they look at qualifications. The current need for knowledge is shifting to a need for skills. Companies increasingly value soft skills that can be demonstrated with microcredentials<sup>22</sup>. These are short learning paths that prepare you for an exact occupation or role you are looking to enter. As a result, soft skills are much more appreciated, and you become a real expert in your field. It is currently still quite difficult to compare these microcredentials with conventional qualifications. However, interest is rising in these specific study paths in various areas<sup>23</sup>, as evidenced by the number of companies that are offering training courses covering this. They teach participants what is required in their area of expertise in a targeted manner, enabling them to get off to a flying start.

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**"IN THE FUTURE, A LECTURER'S ROLE WILL NO LONGER BE TO TRANSFER KNOWLEDGE BUT TO GUIDE STUDENTS ON THEIR OWN LEARNING PATH"**

– VANESSA ABEL, ERASMUS UNIVERSITY ROTTERDAM

#### CURRENT SITUATION

Flexible education is becoming more important<sup>24</sup>, and more and more students and lecturers advocate a more personal study path that better suits students' individual needs. Although many students and lecturers would like this flexibility, this is something that is difficult to achieve at present. Many students mainly need clarity and a set, standardised study path. It takes a lot of time and money to create an individual study path for each student. For many education institutions, this isn't an option.

In addition, education institutions are required to justify their education offer, which would become increasingly complicated if each student followed their own path. This is why the current standard is to have a set study path – while this is not always a perfect match for every student, it is easier to manage by the institutions.

## CONTINUATION

If the current situation continues, flexible education will likely develop slowly, particularly in smaller education institutions and for specific study programmes. Demand for a more personalised learning experience will increase, which is likely to increase student motivation and engagement. However, implementing flexible education comes with significant costs for education institutions. It takes time, resources and money to create alternative study paths, which means that only a small number of institutions will actually implement this approach. In addition, it is important to realise that the study paths on offer are unlikely to be extremely personal, as the education institutions themselves determine the choices and options. This means that students can choose from different paths but will not have full freedom to organise their studies the way they want to.

## DISRUPTION

Thanks to the rise of AI, education is becoming more and more personalised, offering students new opportunities to make their study path more flexible. Concepts such as EduID<sup>25</sup>, joint degrees<sup>26</sup> and other innovative approaches<sup>27</sup> allow students to adapt their studies to what best suits their personal situation. For example, by analysing data such as a student's interests, the distance to the education institution and even sleep patterns, AI can determine whether it is best for the student to learn in the morning or evening, as this can significantly improve their learning experience. In addition, AI will pave the way for making flexible study paths more accessible to students, as it will reduce education institutions' administrative burden. This can make implementing such flexible study paths less costly for institutions and therefore allow more education institutions to offer these opportunities.

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**"THERE IS STILL ROOM FOR EDUCATION IMPROVEMENT IN THE COLLABORATION BETWEEN RESEARCH UNIVERSITIES"**

— FRED DE VRIES, UNIVERSITY OF TWENTE

#### CURRENT SITUATION

Teacher shortages are currently a major problem in primary, secondary and vocational education<sup>28</sup> and also have indirect consequences for higher education. The Dutch government is currently investing 11 billion euros per year in higher education<sup>29</sup>. In theory, this should be enough to minimise the lecturer shortages. Nevertheless, 1 billion euros have also been cut in higher education, with January 2025 accounting for 257 million euros alone. These major cuts have far-reaching consequences: they are leading to the disappearance of certain study programmes and are reducing the number of foreign students the Netherlands is attracting. This means that, even though the Netherlands is retaining more knowledge, the country is also missing out on important new knowledge and perspectives from elsewhere. In addition, some institutions are already facing declining student numbers, which has led to mergers<sup>30</sup>. Despite these challenges, education institutions do continue to invest in the latest technologies and education innovations to keep up with rapidly changing developments in society and the educational landscape<sup>31</sup>.





## CONTINUATION

If these changes continue, it is likely that even more study programmes will disappear, which will have significant consequences for many research universities and universities of applied sciences. The disappearance of courses means fewer available learning spaces, which in turn reduces education accessibility and lecturer jobs. If certain studies disappear, training courses will become increasingly less specific, which may cause some study programmes to merge. This will affect the content of the study programmes and the way in which students can shape their future careers. This will also even further increase the workload of lecturers, as the remaining lecturers will have to guide the remaining students through the studies that have merged. This will make it increasingly difficult for education institutions to ensure the quality of education and will increase the pressure on staff<sup>32</sup>.

## DISRUPTION

Education institutions are increasingly choosing to specialise. For example, Leiden University concentrates on biology and medicine, while UvA and VU focus on social sciences and related areas. This trend emphasises in-depth knowledge rather than quantity and therefore improves the quality of education. This focus frees up resources for education institutions to strengthen their core competencies, which benefits both education and research. This makes it easier for students to choose a course that matches their interests and to collaborate closely with fellow students who share the same passion, enhancing social and academic interaction. In addition, this type of specialisation makes the Netherlands more attractive to foreign students, which strengthens the country's international position in the education rankings<sup>33</sup>.

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**"INTERNATIONAL STUDENTS ARE AN INTEGRAL PART OF DUTCH SOCIETY AND THEREFORE ADD BOTH SOCIAL AND ECONOMIC VALUE"**

— UNIVERSITEITENVANNEDERLAND.NL<sup>34</sup>

#### CURRENT SITUATION

Approximately 15% of students at research universities and universities of applied sciences in the Netherlands come from abroad, with about 2/3 studying at a research university. International students often opt for studies in the cultural sector or law<sup>35</sup> but are also attracted by other courses. The trend towards English-language studies is falling, with more and more Dutch-language courses on offer<sup>36</sup>. There is also a growing call to focus more on Dutch students, which could lead to a decrease in international students. It is increasingly said that international students studying in the Netherlands should stay on to work in the Netherlands in order to benefit Dutch society<sup>37</sup>. At the same time, the country's Cabinet is cutting back on education, which means increasingly fewer courses are being offered to foreign students in particular<sup>38</sup>. This combination of factors is affecting the number of international students in the Netherlands and the manner in which higher education is set to evolve in the future.

## CONTINUATION

If current developments continue, it is likely that fewer foreign students will, in future, choose to study at a Dutch education institution – if at all. This would reduce the income of education institutions that rely on international students. It would also reduce Dutch students' experiences with different cultures, which may limit their intercultural skills. In addition, the loss of international students may mean that Dutch students need to speak and write English less often, potentially reducing their language skills, which could restrict them in an international working environment.

## DISRUPTION

Higher education is reviewing its business model and has decided to invest in the development of online education, using technologies such as AI and Extended Reality. This enables foreign students to visit lecture halls or working groups in the metaverse. This allows interaction between Dutch and foreign students, albeit remotely. Education institutions will also cooperate better with research universities abroad, which will allow knowledge and skills sharing. This will put Dutch education in a strong international position, as it will be at the forefront of the latest developments and have strong links with foreign education institutions.

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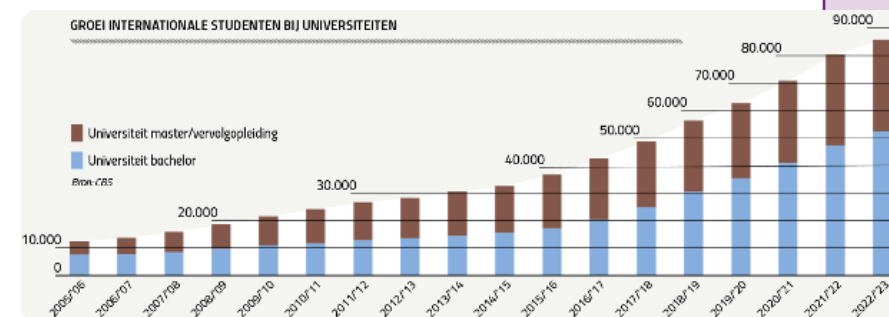
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LECTURER-STUDENT

**"ONE OF LECTURERS' MOST IMPORTANT ROLES IS TO MOTIVATE THEIR STUDENTS"**

— ANNE MARIE VAN ROOIJEN, MBO UTRECHT

#### CURRENT SITUATION

Right now, students are taught by different physical lecturers, which means they often go from one class to the next. Large class sizes and constant changes in lecturers leave little room for personal attention and guidance for students. This makes it difficult for lecturers to really focus on their students' individual needs by providing targeted feedback and supporting them with specific learning challenges, for instance. The lack of face-to-face interaction can make students feel less motivated and can make it more difficult for them to ask questions or discuss problems. Moreover, the lack of continuity in lecturers may also affect the coherence and quality of the lectures, further complicating the learning process.





## CONTINUATION

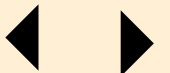
Lecturers' workload is very high due to ever larger classes and the higher demands placed on lecturers. As a result, 23% of future lecturers quit in their first year<sup>39</sup>. Lecture shortages only increase the pressure. This greatly reduces the quality of education. Far fewer children receive the necessary attention, which means the qualification requirement set by the government is not always met<sup>40</sup>. Finally, there has been an increase in students with mental health conditions such as ADHD, which now tend to affect half of all students rather than the customary 1 to 2 students per class. One of the reasons for this is that it has become easier for everyone to get tested. Another is that everything tends to be related to mental conditions even when they aren't necessarily causing the problem<sup>41</sup>. This means that in some classes, extra attention is paid to one half of the class, with the other half possibly suffering the consequences.

## DISRUPTION

There is currently a strong focus on the rise of AI and the possibility of AI taking over the role of lecturers in the future. For example, more and more new websites and online platforms are using AI to help students study, for example by answering questions or by offering tailored learning strategies. These online platforms offer personalised guidance that would normally come from a lecturer, enabling students to learn more quickly and effectively<sup>42,43,44</sup>. This can be the beginning of a new approach to education with AI playing an active role in supporting students and helping them to get the most out of themselves and optimise their performance. By using AI as a supporting tool, we can potentially create a more personalised and efficient learning experience.

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## DIVERSITY



**"INCLUSIVE EDUCATION IS A MUST"**

- UU.NL<sup>45</sup>

### CURRENT SITUATION

Diversity currently plays an important role in education. A lot is being done to promote inclusion. For example, most research universities and universities of applied sciences encourage the use of the appropriate pronouns and offer gender-neutral toilets<sup>46</sup>. Despite these steps, barriers to higher education remain. For example, you can only enrol at a research university after completing pre-university education or a foundation course. In addition, many research universities have a limited number of places for certain courses, which means not everyone can move on to higher education, even with the right qualifications<sup>47</sup>. This makes it difficult for some students to gain access and hampers progress in diversity and inclusion. According to Nuffic, students are becoming "increasingly aware of the systematic inequality in education and society as a whole"<sup>48</sup>.



## CONTINUATION

Due to the rising cost of study delays and ongoing education cutbacks, it seems likely that research universities and universities of applied sciences will, in future, invest in technologies such as AI to help them predict students' chances of success. This would enable education institutions to work in a more targeted way by only opening their doors to students who are likely to succeed on to their courses. The advantage is that this can save costs, as less resources need to be spent on lecturers, study materials, administrative resources and so on. In addition, research universities' funding is often based on the number of students who pass. This makes it financially beneficial for those universities to optimise processes and only support students who are likely to succeed<sup>49</sup>. This would help them to reduce costs and generate more funds.

## DISRUPTION

Research universities and universities of applied sciences may decide to make higher education accessible to everyone, regardless of the qualification students have obtained in secondary school. This approach would give students who are highly motivated to get into university the opportunity to pursue their dreams, even if they are theoretically less likely to graduate than students who have completed pre-university education. This would contribute to more equality in education and would also ensure a more diverse student population at research universities and universities of applied sciences. This may result in a smaller gap between people with different secondary education qualifications in society. This system would be more similar to the situation in Belgium, where students from different backgrounds can access higher education, provided they are willing to work hard<sup>50,51</sup>. This can enrich society, as it opens the door to students who otherwise wouldn't have had this opportunity.

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