

TREND REPORT FUTURE CAMPUS

A glimpse into the future of the campus in vocational education (mbo) and higher education (hbo, wo) in 2040



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“Much of our thinking of the future is linear, and based on extending currently existing trends. But trends slow, accelerate, bend and break. Unforeseen events can disrupt even long-standing trends. Opinions differ on historical developments and, even when there is agreement, the future is rarely just a smooth continuation of past patterns. Moreover, we do not know in advance which trends will continue and which will change course, or in what context. Sometimes, we can just be plain wrong.” (OECD, 2022)

SUMMARY

This trend report describes thirteen important trends that will impact campus development in vocational education and higher education in 2040, both virtually and physically. SURF uses these trends as input for developing future scenarios for the campus. Educational institutions can also use them for their own futuring analyses. The thirteen trends are the result of desk research conducted by various experts from educational, technological, and housing perspectives. The thirteen trends are:

- 1 Rise of blended, hybrid, and online education
- 2 Growing emphasis on lifelong learning
- 3 Extensive flexibilisation and personalisation of education
- 4 Increasing importance of well-being, socialisation, and inclusivity
- 5 Smarter buildings and improved infrastructure
- 6 Growing importance and focus on sustainability and green campus initiatives
- 7 Extensive digitisation and datafication of education and the learning/work environment
- 8 Increasing importance of ethical awareness and safeguarding public values regarding technology use in education
- 9 Changing role of the teacher and his skills
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- 12 Stronger internationalisation and globalisation
- 13 Flattening population growth, increasing diversity, and aging

Predicting the future is impossible. However, preparing for possible futures is important, especially for long-term policies. By describing the thirteen trends, SURF provides an overview of potential developments that can inspire and stimulate campus innovation and anticipation.

INTRODUCTION

What might the physical and virtual campus of vocational education and higher education look like in 2040? That is the central question of the SURF project 'Future Campus'¹. The focus is on the Netherlands, specifically education (research is out of scope). This project brings together teachers, students, and experts at the national level who are involved in campus development from various perspectives. In collaboration with them, SURF is working towards different future scenarios, which are expected to be presented by the end of 2023.

The project serves several purposes:

- Facilitating institutions in anticipating the possible campus of 2040, both virtually and physically.
- Connecting members and other stakeholders to promote collaboration and knowledge sharing about campus innovation.
- Inspiring and raising awareness among members and decision-making stakeholders about campus innovation that aligns with recent sector developments.
- Developing practical guidelines to inspire and support institutions in making future-proof choices for campus development and innovation.

After this introduction, the approach is discussed, followed by an individual trend presentation. Each trend includes a description of underlying signals and references to relevant sources.

Approach

To identify the trends, desk research was conducted from three perspectives: educational, technological, and housing. The educational perspective involves exploring trends in didactic approaches, curriculum development, and characteristics of education. The technological perspective focuses on the role of technology in education and campus development, both physically and virtually. The housing perspective concerns the physical environment of the campus, such as learning spaces and their design.

The first step of the desk research consisted of identifying drivers. A driver is a driving force or influential factor that stimulates or shapes changes and developments. These were identified using two methods: 'driver mapping' and 'futures triangle' (UNDP, 2022). The STEEP framework was used, which stands for Social, Technological, Economic, Ecological, and Political. By examining driving forces from different angles, a broad range of outputs is ensured.

The drivers formed the basis for the subsequent trend research (see Table 1). A 'trend' is an observable pattern of change that occurs in a specific area or domain, such as education, technology, or housing. Drivers are neutral, but trends are not. For example, "Digitalisation" is an important driver, from which the trend "Rise of generative AI in education" can emerge.

Digitalisation	Efficiency thinking	Lifelong learning
Sustainability and climate change	Public values	Employment market partnership
Flexibilisation and personalisation	Facilities development and innovation	(Inter)national networks
Demographic, social and cultural changes	Regulation and policy	Educational development and innovation
Economic developments and budgets	Work pressure and time	Student well being
Organisational layout and change capacity	Attention to teaching skills	Teacher evaluation and career perspective
Valuation of education		

Table 1 Summary of identified "drivers" of influence on campus development.

After identifying the drivers (see Table 1), signals of change were examined through three separate desk research studies. Signals are specific indicators that point to possible trends. These can include new technologies, policy changes, or new educational practices. Analysing these signals provided an overview of trends. The method used was 'trend identification and analysis' (UNDP, 2022), based on the three aforementioned perspectives. Various data collection methods were employed, including literature review, expert interviews, and brainstorming sessions. Finally, a collaborative effort determined the overarching trends that are visible and most relevant for campus development, resulting in the thirteen trends presented in the report.

The desk research was conducted by experts who assisted in identifying and analysing the trends and driving forces influencing the future campus. This trend identification can be seen as a practical exploration exercise using various "futuring" methods. The results represent a snapshot and are based on the subjective interpretation of the researchers. When used in other research projects, it is necessary to further validate the trends. Nevertheless, the trends are valuable for institutions in the Netherlands to better anticipate possible futures.

TRENDS

1 Trend 1: Rise of blended, hybrid, and online education

The rise of blended, hybrid, and online education is partly the result of accelerated digitalisation due to the COVID-19 pandemic, which caused a large-scale shift to online learning (NOS, 2021; Turner, 2020; Dutch Youth Institute, 2021). However, significant advancements in digitalisation also make it increasingly possible to conduct education not only within the four walls of a classroom but also to interact with each other in other advanced virtual ways (such as XR; EDUCAUSE, 2021).

Within this overarching trend, there are several underlying developments that are continuously changing higher education and the value of the campus. There is an increase in distance learning (Inspectorate of Education, 2020), allowing educational institutions to serve a larger number of students and provide more flexibility to students. Additionally, there is a growing use of digital assessment (Klinkenberg, 2019), which can lead to different types of spatial utilisation. Furthermore, physical and digital learning environments are increasingly integrated into so-called "hybrid" settings. Think of the growing use of open educational resources (Kennisset, 2021; MBO Digitaal, 2020; Acceleration Plan, 2020), which expand access to knowledge and make education increasingly accessible. There is also an increasing diversification of educational formats, resulting in a more diverse range of teaching methods. All these signals contribute to the rise of blended, hybrid, and online education.

The COVID-19 pandemic also highlighted the importance of (physical) social contact. The value of the campus is shifting from knowledge transfer to co-creation and interaction (Turner, 2020; Dutch Youth Institute, 2021). This shift allows for more opportunities for socialisation and personal development². Blended learning continues to evolve, aiming to enrich the learning environment by connecting different learning modalities (online, physical, blended, hybrid).

This trend has implications for campus development. Educational institutions may consider incorporating more HyFlex spaces³ and technological infrastructure into their campus design. Additionally, the value of the campus may further shift from being a physical location for formal education to a hub for social and cultural interaction, co-creation, and innovation. This can lead to a redefinition of the role of the campus and new ways to enhance the student experience, both physically and virtually.

2 Trend 2: Growing emphasis on lifelong learning

The growing emphasis on lifelong learning has an impact on the future of the campus in education (National Government, n.d.). It can lead to a fragmentation of the educational offerings and a shift in what takes place physically on the campus and what happens at home or in the workplace. Continuous learning and personal development in a rapidly changing world are being encouraged by both the government and educational institutions, although this process is still gradually unfolding.

Several signals are visible within this trend. Firstly, there is an increase in microlearning and e-learning modules (Rubens, 2021; Gallagher, 2021). Educational institutions offer smaller, more focused learning modules that can easily fit into busy lives. Secondly, there is a growing development of platformisation and subscription services focused on providing education (Van Dijck et al., 2021). More and more online platforms offer education, supported by technological innovations that make it increasingly scalable and accessible.

There is also a growing focus on micro-credentialing (Prometric, n.d.; SURF, 2019; European Commission, 2020). Learners can collect smaller, stackable certificates demonstrating their knowledge or skills. This promotes mobility and contributes to lifelong learning. Learning is no longer limited to the walls of educational institutions but is increasingly focused on lifelong learning through a combination of online and physical learning activities, also known as blended learning. This is evident in the increase of so-called “shadow education” (Elfers & Jansen, 2019)⁴, where students increasingly choose from the offerings of different providers.

In vocational education, lifelong learning is encouraged through the provision of retraining, reskilling, courses, and workshops that align with the needs of employers and employees. There is also a growing collaboration with the business sector and the region to better align education with the labor market (Van Ginkel, 2021). In higher education (hbo and wo), lifelong learning is stimulated through the offering of post-initial programs, masterclasses, and courses that focus on professional development and keeping knowledge and skills up to date. There is an increasing emphasis on flexible learning trajectories that better meet the needs of students and working professionals (see trend 3).

3 Trend 3: Extensive flexibility and personalisation of education

The increasing flexibility of education is a development that strongly influences the future of the campus in education. This trend arises from the growing recognition of diverse learning needs and the importance of providing personalised and activating learning experiences (Acceleration Plan, n.d., National Government, n.d.). There are several signals that may influence the continuation of this trend, such as a growing focus on certification with badges and micro-credentialing (The Hague High School, 2021; Alphens, 2021), and diversification and customisation through new and adaptive digital technologies (EDUCAUSE, 2022). There is also a growing supply of modular programs and personalised learning paths that cater to the needs and interests of students. This need is becoming increasingly apparent (ScienceGuide, 2023). This development leads to the creation of more flexibly designed learning environments, both physically and virtually. These approaches enable students to pursue at a time, pace of study, and location that suit their own needs and interests. The Innovation Platform for Vocational Education (MBO) in 2030 (n.d.) predicts that personalised learning will become the norm and that extracurricular learning will gain importance.

From a housing perspective, this trend translates into an increasingly flexible and modular layout of space, incorporating aspects such as flexible, comfortable, lightweight, intelligent, and circular furniture (Brink et al., 2023). This includes higher comfort requirements such

as soft seating, height-adjustable tables and chairs that promote movement, and a variety of furniture such as sofas, train-style seating, round and triangular tables. This layout enables a quick transition from instruction to collaboration and the formation of project groups.

Improved spatial quality and efficiency are essential in this regard, employing various design and learning principles to create a variety of spaces, such as concentration, collaboration, instruction, informal learning, meeting, and experimentation. Spaces are designed based on functions and activities, facilitating different educational formats within a single educational space⁵. Think of sliding walls and group spaces, and a mix of open learning spaces, instructional spaces, collaboration spaces, and focused workstations, which can impact learning behavior (Kennisrotonde, 2022). Accessible meeting places with various facilities, such as catering establishments, outdoor spaces, ICT facilities, and multifunctional rooms, contribute to the atmosphere and a sense of a living room (also see trend 4). This results in different types of spaces that better suit various activities.

4 Trend 4: Growing Importance of Well-being, Socialisation, and Inclusivity

The growing importance of well-being, socialisation, and inclusivity has the potential to greatly influence the future of the campus. An important signal for this is the shift in the value of the campus from knowledge transfer to socialisation and co-creation (Turner, 2020), with an increasing focus on community building and a growing importance placed on inclusivity (Van der Meer et al., 2023).

Research, including studies by the RIVM (National Institute for Public Health and the Environment) and Trimbos, indicates that Dutch students are not doing well. The RIVM (2021) states in their mental health monitor that half of the students in higher education experience psychological issues such as anxiety and depression, with 12% of them experiencing these issues severely. This has led to a growing importance of student well-being (NRO, 2023). As a result, educational institutions are becoming more of a place for socialisation and personal development. Students can be connected to each other both on a physical campus and a digital campus/platform, ideally reinforcing each other. This signal can be best described as a shifting value of the campus from knowledge transfer to socialisation and co-creation (Trimbos, 2022; Turner, 2020; ECBO, 2022).

From a housing perspective, there is also a growing importance placed on the spatial quality of educational spaces. For example, there is increasing attention given to the so-called WELL certification⁶, which focuses on 10 themes such as air, water, nutrition, light, movement, thermal comfort, sound (acoustics), materials (Biophilic), mental health (well-being), social health (socialisation), and innovation. This framework encourages institutions to create an environment that optimally promotes the health and well-being of users. Strongly related to this is the trend of increasing emphasis on community building, which means that the campus focuses more on creating a supportive and inclusive environment where students feel at home (sense of belonging). For example, efforts are made to organise events related to well-being and mental health, as well as more attention given to the prevention of mental problems (Trimbos, 2022; Maastricht University, 2023).

Finally, there is a growing importance placed on inclusivity in education (European Education Agenda, 2023). This means that more attention is given to creating a diverse and accessible learning environment where all students feel welcome and valued. There is an increasing emphasis on accessibility in education⁷, including the development of programs aimed at equal opportunities, such as scholarships for minorities and facilities that are accessible to students with disabilities.

In general, there is a growing realisation that the well-being of students, teachers, and other campus users is an important educational task. The campus is becoming more of a “sticky campus” (Fontys, 2022; Inholland, 2021), meaning a place where students literally stick around.

5 Trend 5: Smarter buildings and improved infrastructure

There is a growing presence of smart campus applications in practice. This trend arises from the increasing adoption of advanced technologies in the infrastructure and management of buildings and facilities (Hooijdonk, 2022; Valks et al., 2016). There are several signals pointing to this trend. For example, Internet of Things (IoT) is becoming more mature for large-scale use (Kennisnet, 2021). This includes the use of sensors, devices, and networks to collect data on the use of spaces, buildings, energy consumption, safety, and other aspects of the campus environment. This information is used to improve the efficiency, sustainability, and overall comfort of the campus, as well as the experience of campus users. For example, spaces can be used multifunctionally, even in collaboration with the professional field⁸. By applying machine learning and AI, this data can be combined to gain new insights. This can then be visualised in a digital twin for simulations or predictions⁹.

There is also an increasing trend towards more flexible scheduling, allowing the classroom to better align with fluctuating preferences during a study period¹⁰. This also improves the efficiency of available space on campus, such as occupancy and utilisation (Last, 2022). Furthermore, there is a growing focus on researching the impact of the study environment (temperature, CO₂, light, light colour, etc.) on student outcomes or employee well-being (Gilav, 2016; Closs et al., 2022). Additionally, there is an increasing use of robotics and AI for process automation, such as autonomous robots for cleaning and AI-driven systems for energy and climate control (Social and Cultural Planning Office, 2021). This enhances the quality of the learning and working environment for students and staff.

This trend significantly influences the campus of the future by redefining how spaces are used, personalising the learning and working environment, and promoting sustainability and efficiency (see trend 6). The concept of a smart campus enables the transformation of spaces based on real-time needs and user preferences.

6 Trend 6: Growing Importance of Sustainability and Green Campus Initiatives

More and more institutions are focusing on creating a greener, climate-neutral campus¹¹. There is even a growing demand for education programs focused on sustainability and environmental awareness. This stems from the increasing awareness of the environmental impact of buildings and digital resources, and the need to contribute to a more sustainable and responsible world (TU Delft, 2019; Tilburg University, 2023; Hogeschool Leiden, 2018).

This trend is visible in the implementation of energy-saving measures and carbon-neutral learning environments, such as energy-efficient lighting, better insulation, smarter climate control, and environmentally friendly virtual applications (Rijksdienst voor Ondernemend Nederland, n.d.; Rijksoverheid, n.d.). For example, Maastricht University has reduced the general temperature by one degree to reduce its ecological footprint and contribute to sustainability goals (Maastricht University, 2018).

By utilising new technologies such as solar energy and renewable energy sources in combination with IoT devices, energy consumption is optimised. Additionally, there is a focus on circular design in the learning environment, including refurbishing, recycling, and reusing existing materials (Universiteit Utrecht, 2023). Often, this is done in collaboration with students and the business community¹².

Furthermore, there is a visible increase in natural ecosystems on the physical campus, such as green roofs, vertical gardens, and other forms of urban greening (Erasmus University Rotterdam, n.d.; Stabiel Management, n.d.). These initiatives contribute to biodiversity on the physical campus.

This trend has implications for campus development, both physical and online. Physically, it may involve integrating sustainable design principles and green technologies in the construction and renovation of buildings and facilities, as well as creating more green and natural spaces on campus. Online, it may lead to the development of digital platforms and systems that promote energy efficiency and sustainability, such as the use of green data centers and encouraging virtual collaboration to reduce CO2 emissions.

7 Trend 7: Extensive Digitalisation and Datafication of Education and the Learning/Working Environment

The trend of extensive digitalisation in education is clearly observable. Technological advancements are happening rapidly, exposing the field of education to new possibilities - sometimes even disruptively. There are three specific signals that play a role in this trend: the rapid rise of generative AI, increased use of immersive technology, the growing datafication of education, and improved technology to integrate the physical learning environment with the virtual learning environment. Therefore, it is increasingly important to adapt campus infrastructure to digital needs and capabilities. This includes integrating digital tools and equipment into education, such as interactive whiteboards, tablets, laptops, and digital learning environments, as well as flexible learning spaces for blended and hybrid education.

Generative AI¹³ is becoming increasingly prevalent. More applications are finding their way into education, as seen in the explosion of new AI tools. This is driven by the growing capabilities of artificial intelligence to perform complex and creative tasks that were previously only done by humans (European Parliament, 2020). Consequently, there is an increasing use of AI to support learning and work processes (SURF, 2023). For example, the use of ChatGPT to formulate learning outcomes, create quiz questions, or provide feedback to students. This can lead to a more efficient and effective learning process, allowing teachers to focus more on social interaction, co-creation, and engagement. However, technology also has serious downsides, such as threats to public values, privacy issues, a strong dependence on big tech, and digital inequality (Wess, 2019; European Parliament, 2022). These developments may impact the value of the campus or fundamentally change the way education takes place. This, in turn, influences the design of the physical and virtual campus.

In recent years, we have also seen an increase in the use of immersive technology in education (SURF, 2022). These increasingly advanced XR technologies (extended reality, an umbrella term) such as VR (virtual reality), MR (mixed reality), and AR (augmented reality) offer students an interactive learning experience that goes beyond other learning technologies. Currently, these technologies are still relatively expensive, and there is limited educational content available, which means that teaching using VR headsets, for example, is not yet widespread (Kennisrotonde, 2018). However, there is a noticeable indication that the hardware is becoming more affordable and scalable (Statista, 2021). A recurring trend in trend explorations is the development of the metaverse (Future Today Institute, 2023). The metaverse is an extensive virtual world in which people can communicate, learn, and create through avatars¹⁴. Ideas about what the metaverse is vary, but it is often described as a decentralised and open ecosystem of 3D worlds and environments. For education, the metaverse offers an opportunity to provide education in an innovative and engaging manner through interactive and immersive experiences (EdSurge, 2022).

Furthermore, there is a growing trend of datafication in education, which means that an increasing amount of collected data is being used to improve education (SURF, 2022). Under the umbrella term “learning analytics”, data about the learning process is collected, for example, from the digital learning environment. This study data maps the behaviour and performance of students, which is then analysed to gain insights into the educational process (Kennisnet, 2018). This data can help improve the learning process by providing insights into which topics require the most attention, which learning strategies work best, and which factors influence student success. The use of data in education can contribute to personalised learning (SURF, 2022). Through learning analytics, it is possible to gain insights into individual performance, needs, and interests of students. This enables tailored feedback, instructions, and content that better align with students’ individual learning needs.

Finally, there are increasingly better technologies available to integrate the physical learning environment with the virtual one (EDUCAUSE, 2023; SURF, 2023). For example, there are telepresence rooms that facilitate interactive meetings where students can be fully online (in the virtual classroom) or partially offline. These rooms prioritise interactive, student-centered learning and promote active learning through their setup. An example is the Hybrid Active Learning Classroom at Utrecht University¹⁵. The above-mentioned technological developments have the potential to have a significant impact on the campus of the future, although there is also an important interplay with the adaptability of institutions (see trend 10).

8 Trend 8: Growing importance of ethical awareness and safeguarding public values in the use of technology in education

There is a growing awareness of the ethical implications of technology in education (SURF, 2021). Educational institutions recognise that technology is not neutral and that extra efforts are needed to safeguard public values such as justice, humanity, and autonomy (SURF, 2021). Public education should be transparent, accessible, and inclusive.

Some major players in the technology sector (big tech) are gaining ground in education, which can lead to monopolies, limited competition, and reduced sovereignty over student data, for example. Concerns arise regarding privacy, ownership of data, and the autonomy of institutions, students, teachers, and researchers. Therefore, educational institutions critically assess which products they procure from big tech and when they prefer to use open-source products (Working Group Public Values Education, 2020). SURF also plays an important role in this, for example by developing a course on public values¹⁶. Another good example of a signal is the call to action in a column by various rectors in higher education¹⁷. The EU is working on regulations to limit the power of big tech and strengthen the digital sovereignty of European citizens (Education Foundation, n.d.).

In education, there is increasing attention to “responsible tech,” a term for a movement in which technology is designed and implemented in a way that protects public values (Accenture, n.d.). Lastly, educational institutions are investing in the professionalisation of privacy protection and cybersecurity domains (SURF, 2021).

9 Trend 9: Changing role of the teacher and his skills

The trend of the changing role of the teacher and his skills plays a significant role in education. Teachers need to incorporate innovations, which fundamentally involve behavioural changes. For this, they need to possess the right skills. This is crucial for the success of innovations and the ability to implement digital and analogue technologies in education (Strijker, 2019). Therefore, there is a necessity for teachers to adapt and redefine their role (Last, 2022; SLO, 2022; SURF, 2019). On one hand, with the help of new digital technologies, teachers can automate administrative and routine tasks such as grading assignments, lesson planning, and instructional design. However, on the other hand, they must possess sufficient digital literacy to effectively leverage these technologies (Uerz et al., 2021). This may result in a gap between technological possibilities and teachers' ability to utilise them effectively. And this has significant implications for campus development, both physically and virtually.

There is also an increase in collaboration between students and teachers, with more emphasis on interactive and participatory forms of education, such as projects, workshops, and peer learning. There is also a greater emphasis on collaboration with companies and other partners to provide students with practical experience. The role of the teacher as a subject matter expert will continue to exist, but a substantial part of it will focus on coaching, guidance, and community-building (Last, 2022; SLO, 2022; SURF, 2019). It is important for teachers to possess good digital and cultural skills and have a willingness to continuously develop them (lifelong learning, even as teachers). However, there is a visible signal that it is challenging on a large scale to develop the necessary digital and pedagogical skills to shape the changing role of the teacher. This is often due to a lack of time and space, resulting in high workload and slow change processes (Zestor, 2023). While there is a growing importance of this in practice, professionalisation lags behind in some places (Ixperium, 2022).

If teachers cannot keep up with educational and technological developments, such as the changing role of the teacher and the emergence of generative AI, there is a risk that they will cling to old ideas about education, and as a result, not fully leverage opportunities (Breens, 2022). This may lead to a discrepancy between the potential of (technological) innovations and their actual implementation in education, which subsequently influences the future development of the campus.

10 Trend 10: Low change readiness of educational organisations

The trend of low change readiness of educational institutions influences the way in which education and the campus can adapt and innovate. This cluster of signals focuses on the organisational aspects of educational institutions and their capacity to initiate and implement changes. It includes contextual factors such as the governance structure and decision-making processes within institutions, the level of involvement of various stakeholders in the decision-making process, and the overall change capacity of the institutions (Graham, 2013).

Despite initiatives by educational innovators and national stimulus programs such as MBO Digital and the Acceleration Plan, education changes slowly. Moreover, the design of the physical and virtual learning and working environment is not always (explicitly) considered or adapted to the adopted educational philosophy (Beckers, 2016). For example, when a group discussion is supposed to take place as an interactive teaching method in a room with fixed lecture-style seating (Last, 2022). However, Covid-19 has accelerated digital adoption, but it has also led to aversion towards distance learning and hybrid learning for many (Kips, 2023; Univers, 2023). If the culture and structure surrounding change and innovation do not change, it is highly unlikely that the campus of the future in 2040 will differ radically from today's campus in the most predictable scenario.

The importance of change readiness is acknowledged in the Npuls program, and therefore, there will be increasing attention to change management at the national level in the coming years. This will be achieved, among other things, by making research results in education accessible. There will be room for experimentation, and at the same time, efforts will be made to efficiently scale up outcomes. The goal is to create a culture of learning within education, so that even after the program is completed, there is a focus on continuous improvement of education.

11

Trend 11: Increasing cross-sectoral and/or interdisciplinary collaboration

The trend of increasing cross-sectoral and/or interdisciplinary collaboration plays a crucial role in the development of educational institutions and their campuses. This trend is visible in various signals, such as cross-institutional collaboration, collaboration with the business community and the region, and interdisciplinarity among students, teachers, institutions, and companies.

Educational institutions are increasingly collaborating with each other. An example is the pilot student mobility, which aims to enable studying beyond the boundaries of individual institutions (SURF, 2023). In the Netherlands, institutions, under the auspices of SURF, have experience in cross-sectoral collaboration to improve the use of ICT in education and research. This collaboration has resulted in a successful ecosystem where joint efforts are made in ICT procurement, service development, and knowledge exchange to promote innovation. In 2022, the National Growth Fund granted funding to vocational education, higher education, and universities to accelerate collaboration in the field of ICT. From 2023, collaboration within the Npuls program will focus on a national infrastructure, a national knowledge infrastructure, and the scaling of important ICT themes such as the adoption of open educational resources and the flexibilisation of education (Npuls, n.d.).

Furthermore, there is a signal of increased collaboration and interdisciplinarity among students, teachers, institutions, and companies, which leads to a stronger connection between education and practice. For example, there is growing attention to create hybrid learning environments in vocational education (Onderwijskennis.nl, 2023). This contributes to the increasing focus on regional profiling and collaboration with the region. Field labs are examples of practical environments where companies, together with knowledge institutions, develop, test, and implement targeted practical solutions (NRO, 2023). This can lead to a decentralisation of the campus, where learning and collaboration can take place outside the traditional campus setting (both online and physically).

12

Trend 12: Intensification of internationalisation and globalisation

Internationalisation and globalisation are playing an increasing role in vocational education and higher education, contributing to the transformation of educational institutions into global knowledge networks. This development promotes the exchange of ideas, students, and teachers, and enhances multicultural competencies, which in turn influence the development of virtual and physical campuses.

This trend encompasses various signals. Firstly, there is a growth in international students in the Netherlands, facilitated by an increase in English-taught programs and the recognition of the quality of our education (Nuffic, 2021)¹⁸. There is also a growing demand for “internationalisation at home” (Beelen & Jones, 2015), where students gain international experiences without traveling, through activities such as international classrooms and virtual exchange programs¹⁹.

Furthermore, there are more international collaborations and partnerships between educational institutions, resulting in “global campuses.” The European Commission supports this through the European University Initiative, with the goal of having 60 alliances by 2024²⁰. This development calls for more flexible campus infrastructure and services. For example, offering more English-language services, considering different time zones for virtual education, and investing in housing for international students. It can also change the cultural dynamics on campus through increased diversity.

This increasing internationalisation brings challenges, such as the discussion around the anglicisation of universities and its impact on Dutch language and history, as well as the growing number of students exacerbating the student housing shortage (ScienceGuide, 2023). In response, language legislation and measures to regulate the influx of international students are being considered. Additionally, technological developments such as automatic translation can contribute to a multilingual campus in 2040. Lastly, this trend also poses ethical and practical challenges, such as ensuring equal access to education and navigating complex international regulations.

13

Trend 13: Flattening population growth, increasing diversity, housing shortage, and aging

The trend of flattening population growth, increasing diversity, housing shortage, and aging has a significant impact on education and campus development.

Firstly, there is a clear signal regarding population growth: the population of the Netherlands is expected to continue growing in the coming decades, albeit at a decreasing rate. The current population of 17.8 million is projected to grow to 20.7 million in 2070, with interim milestones of 18 million in 2024 and 19 million in 2034 (Centraal Bureau voor de Statistiek, 2022). This growth is mainly driven by migration and increasing life expectancies. Population growth has important implications for campus development, such as the need to create flexible and adaptable facilities to accommodate changing student numbers.

Moreover, the Netherlands is transforming into a dynamic migration society with increasing diversity in origin, migration motives, and duration of stay for migrants (WRR, 2020). This diversification comes with challenges and opportunities in education. Despite substantial progress for students with a migration background, there are still concerning levels of discrimination (ResearchNed, 2022; ECBO, 2018). These signals require educational institutions to create inclusive, safe, and supportive environments and be flexible in responding to the growing diversity.

Then there is the signal related to the housing shortage. Urbanisation is taking place as young people and migrants move to cities for study and work. This leads to challenges in the housing market, particularly for student housing, with an expected shortage of 44,800 living spaces in the 20 largest student cities by 2029/2030 (Kences, 2022). At the same time, shrinking regions experience a strong aging population and pressure on local amenities. The influx of students in vocational education and universities of applied sciences is decreasing, while it is growing in academic education. This is partly caused by demographic developments, educational expansion, and the enrollment of international students, primarily in academic education (Ministry of Education, Culture, and Science reference estimate). These signals indicate that regional differences will increase, which will have an impact on education and campus development.

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