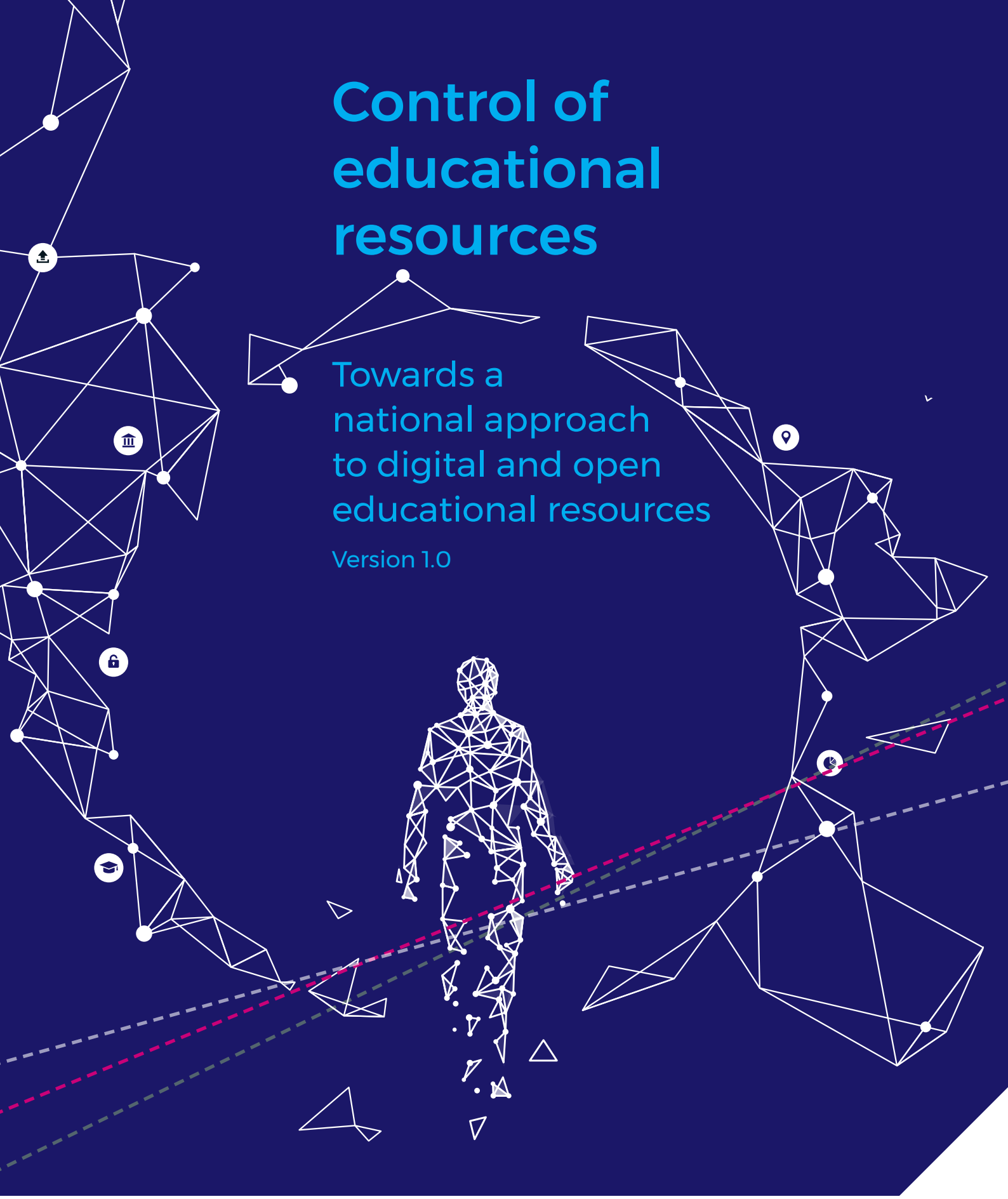
Control of educational resources

Towards a national approach to digital and open educational resources

Version 1.0



Acceleration plan
Educational innovation with ICT

accelerating together

Control of educational resources

Towards a national approach to digital and open educational resources

Acceleration plan for educational innovation with the ICT
Zone 'Working Together to Achieve Acceleration'
www.versnellingsplan.nl

Acceleration plan
Educational innovation
with ICT

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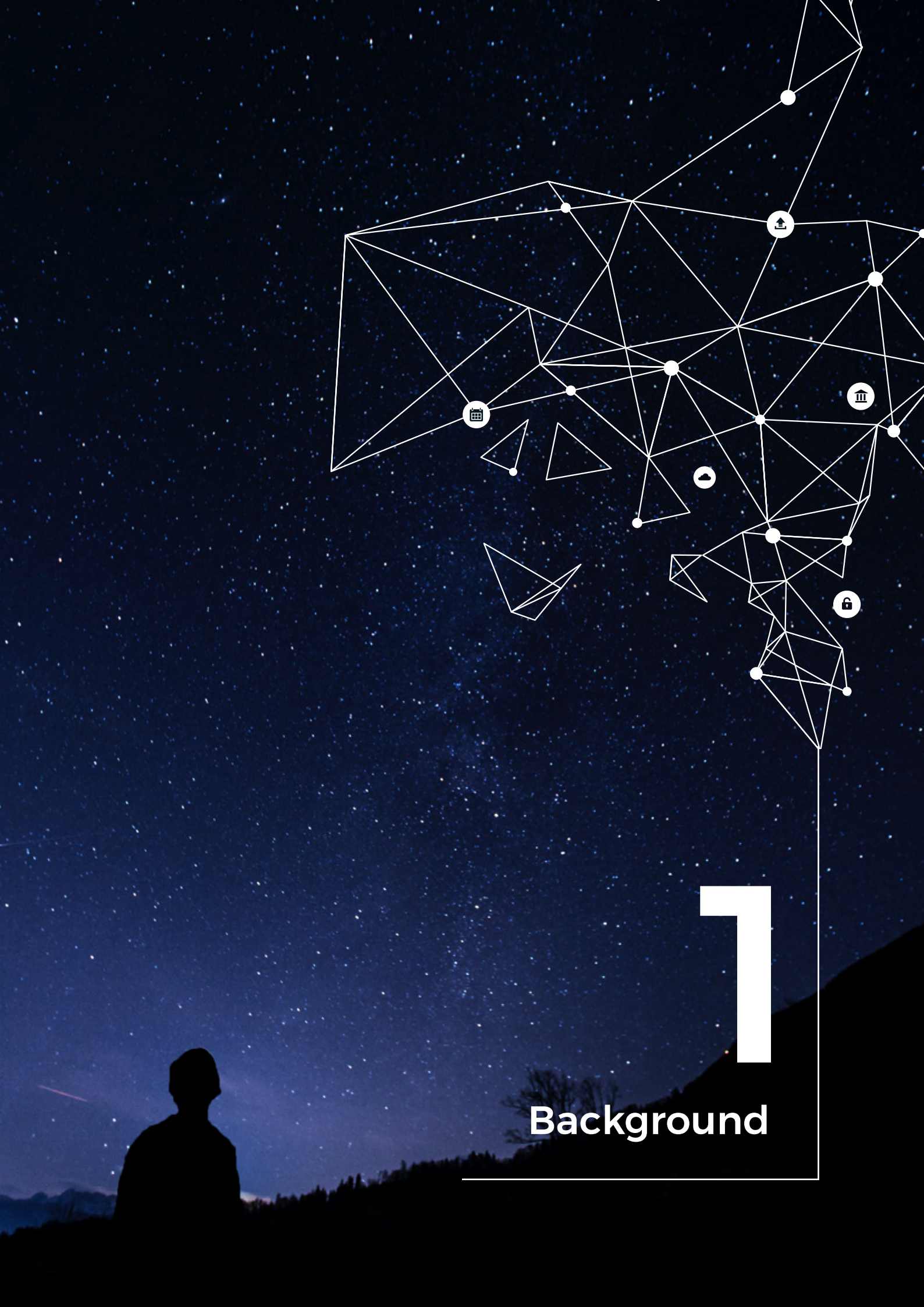


1

Background

1 Background

1.1 Two interconnected ambitions

How can higher education institutions develop a more efficient and accessible system for digital and open educational resources where the educational institutions remain in control? To answer this question, the Acceleration Plan for Educational Innovation with ICT has taken some key steps in recent years. In June 2021, on behalf of the zone Accelerating together, ResearchNed published the report Digital educational resources in higher education, a study into the current status of digital educational resources. The Acceleration Plan's Towards digital (open) educational resources zone published an Educational Resources Vision Document 2025, with eight vision statements and associated building blocks for their realisation.

As a result, the Accelerating Together zone has formulated two interconnected ambitions to achieve a national ecosystem for the use of digital and open educational resources. These are:

1. A national initiative for the development and (re)use of open educational resources;
2. A national arrangements matrix and joint procurement.

The report on *Digital Educational Resources in Higher Education* showed that higher education institutions are currently insufficiently positioned to influence the supply chain of digital educational resources. And that this position could be strengthened by developing a common vision and policy on digital educational resources.

1.2 Outline arrangements

That is why we have been asked to take this complex control issue for higher education further by providing some outline arrangements. Over a six-month period, many interviews were held with students, lecturers, board members, deans as well as programme managers, librarians, supporters and experts (see Appendix C). Topics discussed were: What activities are taking place in the field of digital and open educational resources? How does the coordination and cooperation between institutions take place with regard to the development of educational resources? How has management and leadership engagement in educational resources been structured? And: how do the activities of the Acceleration Plan find their way to the institutions? Where can improvements be made in the cooperation? And: how does coordination for the upcoming development of educational resources work best for all chain partners?

The discussions showed that there is a shared ambition among the institutions and those involved to improve and strengthen the control of educational resources. Quite apart from international initiatives (UNESCO, OECD, EU), a great deal is already happening in this field locally (within the institutions) and nationally (within the Acceleration Plan and SURF). At the same time, it became clear that there are major differences between institutions in terms of vision, perspective, language and approach to digital educational resources and the activities are not coordinated. As a result, students, staff and the social environment of the institutions are unclear about the long-term plan.

In this document, we present an outline of the next steps that we believe are necessary to achieve a coherent national ecosystem for the development and (re)use of digital and open educational resources. It is only a sketch, but serves to clarify the common objective and at the same time follows the path of gradual implementation. For example, this sketch offers higher education institutions full scope for deciding their own trajectory and profile in the development and (re)use of digital and open educational resources.

One thing is absolutely clear: given the digital transformation in our society, its impact on the institutions' strategic ambitions and the way in which commercial parties shape their position in the field of higher education, higher education institutions can only protect their own autonomy by adopting a joint position. In other words, controlling educational resources requires not only a realistic timeline, but also cooperation between public higher education institutions.

1.3 Reading notes

In this document, we outline the steps higher education institutions can take to gain control of their educational resources. **Chapter 2** focuses on the importance of digital and open educational resources. Cooperation between institutions is a must in this regard, and this requires a clear position to be taken by management. We will present the proposition for this in **Chapter 3**. In **Chapter 4**, we will discuss in more detail how educational institutions can develop their own educational resources and make the transition to increased adoption of open (digital) educational resources.

In **Chapter 5**, we discuss how institutions can come to joint agreements and set preconditions to take control of both open and commercial educational resources. If higher education institutions desire a situation in which educational resources are shared openly and cooperation with commercial parties takes place under public conditions, careful governance (**Chapter 6**) and a steady process of experimentation and (mutual) learning through a growth model (**Chapter 7**) are required. However, we will start with the question of why we need to take the necessary decisions right now in order to gain control of digital and open educational resources.

2

The importance of digital and open educational resources

2 The importance of digital and open educational resources

2.1 Digital transformation of higher education

We consider the importance of controlling educational resources from the point of view of the broader digital transformation of higher education. Institutions are increasingly making use of digital opportunities. Such as digital learning environments, interactive tools, data processing, cloud storage services and digital educational resources (Van Casteren & Janssen, 2021, p. 3). These technological opportunities can make education more personal, interactive and flexible. Students can study independently of time and place and take control of their own development paths more than ever before.

There is a beckoning perspective in which the lecturer, as an *education maker, continuously improves the resources and offers them in a personalised manner using educational data* (e.g. numbers of students, *study results, educational resources used)* and learning analytics. Among the institutions, study programmes and lecturers, the 'forerunners' are already demonstrating inspiring examples and the future prospects are exciting. However, developments in this area in terms of systematic transmission within the institutions are still at an early stage of development and the differences between the institutions are evident.[1]

Players in the market for educational resources

Developments in the field of digital transformation of education are being driven by various players. Under the supervision of educational ICT professionals[2] and within *teaching and learning centres*, higher education institutions are exploring opportunities.
National organisations such as SURF and Kennisnet support them in this. Publishing and education technology (EdTech) companies are also innovating nationally and internationally. They are increasingly investing in the development of all kinds of online and digital education, such as online learning environments (ELOs), digital exams, educational games, interactive practice material and ready-made presentations for lecturers.

[1] See the report on Digital educational resources in higher education for a comprehensive introduction into the subject and the results of the study into digital educational resources in higher education.
[2] More and more positions are being created for professionals who facilitate and support lecturers in educational innovations with ICT and the transition to more or better digital education. In a forthcoming publication from the *Facilitating Professional Development for Lecturers zone of the Acceleration Plan for Educational Innovation with ICT*, a description is given of the characteristics of professionals who facilitate educational innovation with ICT, both in higher education within the Netherlands and internationally. In the report, these people are referred to as 'educational ICT professionals'.

In the meantime, higher education institutions must be able to relate to these new opportunities and new players. The trick is to enter into fruitful partnerships in a digitally driven networked society and to incorporate the technological possibilities in such a way that the quality and accessibility of higher education are safeguarded, without compromising the safety of the (members of the) educational community or the autonomy of the educational institutions. This requires strategic foresight, in which the awareness of an institution's own identity and its own strategic goals are more important than ever.

> "You are forced to use all kinds of programs and you have no idea whether they are safe. For example, at the Ministry of Education, Culture and Science they are only allowed to use WebEx for security reasons, but as students we have to install Zoom. That's strange, isn't it?"
>
> **Evangélica Fotiadis**, student of Trend Research & Concept Creation in Lifestyle (Fontys Universities of Applied Sciences)

Concern about autonomy and digital security

Administrators, lecturers and researchers at Dutch higher education institutions are increasingly concerned about the autonomy and digital security of the institutions. This goes beyond privacy issues alone, as recent experiences with hacking and cyber security have shown (RTL Nieuws, 2020; Het Parool, 2021).


Universiteit Maastricht betaalde 197.000 euro losgeld aan hackers

05 februari 2020 15:12
Aangepast: 05 februari 2020 20:38


Plus Analyse

Waarom worden universiteiten en hogescholen gehackt? En 4 andere vragen

De gegevens van 56.000 studenten en medewerkers van Hogeschool InHolland zijn gestolen door cybercriminelen, zo werd dinsdagochtend bekend. Twee weken geleden werden de Universiteit en Hogeschool van Amsterdam (UvA en HvA) opgeschrikt door een hack. Wat is er aan de hand?

Apart from this type of technological attack, there are growing concerns about the autonomy and independence of higher education institutions. In 2019, for example, seventeen lecturers and professors felt the need to issue a warning[3] because of the shifting relationships in higher education under the influence of the 'tech companies'. In recent years, this appeal has been supported by various parties, with an emphatic request to the government and educational institutions to protect public values against commercial interests.[4] In a speech, the Rector Magnificus of the University of Amsterdam, Karen Maex, also talked about this shift in power. A development that is ongoing in both research and teaching.[5] She said:

> "An unintended consequence of present-day digitisation is the surging power of large tech companies. … today's platform companies decide who gets access to information, guide interactions between users and convert those interactions into data. This impinges on academic sovereignty and goes well beyond the 'publishing function' originally vested in a large number of firms."
>
> **Karen Maex**, Rector Magnificus of the University of Amsterdam

In order to prevent the institutions from losing control of education services and from having to comply entirely with the conditions and prices of suppliers, it is urgently necessary to collaborate. If we do not, former Rector Magnificus of Utrecht University, Bert van der Zwaan, warns of a coup, in which commercial parties will increasingly determine the form, content and price of higher education (Zwaan, 2021). According to the Utrecht University professor and former chairman of the Royal Netherlands Academy of Arts and Sciences (KNAW),

[3] They did this through the article Digitisation threatens our university. The letter was signed by Karen Maex (UvA), José van Dijck (Utrecht University), Corien Prins (Tilburg University), Thomas Poell (University of Amsterdam), Arthur Mol (Wageningen University), Carel Stolker (Leiden University), Cisca Wijmenga (University of Groningen), Frank Baaijens (Eindhoven University of Technology), Han van Krieken (Radboud University), Henk Kummeling (Utrecht University), Joke van Saane (University of Humanities), Klaas Sijtsma (Tilburg University), Rianne Letschert (Maastricht University), Rutger Engels (Erasmus University Rotterdam), Thom Palstra (Twente University), Tim van der Hagen (Delft University of Technology), Vinod Subramaniam (Vrije Universiteit Amsterdam).

[4] For example, by innovation manager Christien Bok of SURF. She says: "The danger is that the education sector will lose its grip on protecting values in education." (Bok, 2019). Another perspective worth reading is offered by the paper Platform economy: how can we make it work?. (VNO/NCW, 2019)

[5] The corona crisis has accelerated the entry of businesses into higher education (Hogan & Williamson, 2021, p. 1). They conclude: Digital technologies and private sector participation can bring many benefits to higher education, but many of the transformational changes promoted during the pandemic also present serious challenges (p.1).

José van Dijck, the institutions must develop a joint strategy with regard to the online infrastructure (De Correspondent, 2021). She asks the educational institutions:

> "What should we buy externally and what should we develop ourselves? Only by working together will the public sector have negotiating power vis-à-vis Big Tech – not just in a financial sense, but also when it comes to data protection and the way the services work."
>
> **José van Dijck**, University Professor at Utrecht University

2.2 Educational resources and the digital transformation of education

Overview of digital educational resources

- digital study and handbooks, including (open) textbooks
- digital (scientific) articles
- Presentations/sheets/ slideshows
- digital syllabuses, summaries, manuals of lectures and practicals
- web lectures and slidecasts
- digital exams
- digital internship and assignment reports
- videos, including knowledge clips, tutorials, instructional videos, vodcasts, animations and documentaries
- AR and VR applications
- MOOCs, SPOCs, Open Educational Resources
- infographics
- animations
- Wikis
- YouTube videos
- digital images, including 3D visualisations
- digital newspaper articles/news sources/ archives
- television broadcasts
- podcasts
- blogs
- open content and data on websites, such as reports by the Dutch House of Representatives and reports by policy-makers and research committees
- data from databases such as Skybray, BBC Monitoring, Factiva
- essays in digital form
- novels in digital form

Sources: Schuwer (2019), OECD (2007), de los Arcos et al. (2015) and Van der Neut & Willemse (2019).

Definition of educational resources

Educational resources are a subset of learning resources. The term 'educational resources' refers only to teaching material or learning content in a certain form (text, visual, auditory or a mixture of these forms) (Van Casteren & Janssen, 2021, p. 15).[6] These may be resources specifically designed for educational purposes, such as textbooks. Higher education also makes frequent use of scientific material, such as articles from peer-reviewed journals. Finally, there are also resources that have been developed entirely independently of the institutions, but which do find their way into the educational process. Think of YouTube videos, TV broadcasts or non-scientific texts (essays, blogs, reports, etc.). Each of these resources has its own role to play within the didactic triangle between lecturer, student and content.[7]

Educational resources are an essential part of the broader digital transformation of higher education. Digital educational resources come in many forms and sizes: from text on a screen to content in virtual reality environments. The core is that the underlying technological developments enable new educational experiences that are interactive, personalised and true to life. These sources are also potentially easier to share, edit and access (independent of time and location).

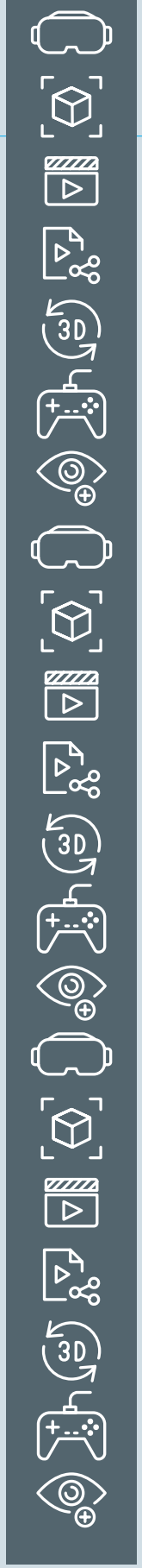
Examples of digital educational resources

Lecturers are already developing educational resources on a large scale. For example, readers, PowerPoint presentations, knowledge clips and exams. Digitisation offers opportunities to make these materials richer, more co-creative and more interactive. Within the institutions, various lecturers are pushing the boundaries of didactic and pedagogical learning through the use of digital educational resources. Here are a few examples:

In the SAMEN professional community, the seventeen universities of applied sciences colllaborate on a nursing programme . Since 2017, the members have jointly created and shared some 1,400 educational resources on WikiWijs and their own communication platform hbovpk.nl.

[6] Digital whiteboards, VR headsets or digital platforms are therefore not covered by this description, but the learning content that they convey is. By way of illustration: YouTube as a platform does not count as an educational resource, but the videos that have been placed on YouTube and are used as educational resources do.

[7] The Towards Digital (Open) Educational Resources zone has developed a tool that allows lecturers to quickly gain insight into which resources are suitable for the desired learning outcomes and didactic teaching methods.



Dorine Koopman, project leader at Saxion University of Applied Sciences and community manager for SAMEN HBO nursing, explains: 'By developing educational resources together, you get to know each other, and this makes collaboration in other areas easier too. For example, every university of applied sciences is now faced with the question of how to organise practical lessons during the coronavirus. Members of the professional community now share protocols and fact sheets.'

At Delft University of Technology, university lecturer Erik Pruyt wrote an open textbook Small System Dynamics for Big Issues, a textbook for modelling real, complex processes, such as the ebola outbreak or the refugee crisis. "It's a difficult course, taught only in a few places at this level," he says. "By publishing the book as a free eBook, I make it available not only to my students, but to everyone. I've already been paid to make the resources."[8]

Utrecht University of Applied Sciences has developed the virtual reality applications 'Interview trainer' and 'Honest Mirror' for a number of Bachelor's programmes and a Master's teacher training programme. These VR applications give the student direct feedback on conducting an interview, giving a presentation or the gestures that are made. Students can practice at their own pace and as often they like.

Leiden University sends students from the 'Methods in Biodiversity Analysis' course into the forest in virtual reality. Students sitting in a classroom can practice by using virtual reality headsets with remote sensing, which is a specific research method. 'I noticed that students often have difficulty understanding the abstract concepts of remote sensing when we use traditional teaching methods,' explains lecturer Joris Timmermans, 'which is why we started developing this method two years ago.'

Future pulmonologists can practice at the LUMC using the 'Lung Cases' application. This app trains future pulmonologists to diagnose patients suffering from breathing difficulties using augmented reality. By projecting holograms of healthy and diseased lungs onto colleagues or students, doctors can practice using a virtual stethoscope and listen to normal and abnormal lung sounds.

Avans is exploring ways to replace traditional exams. The Commercial Economics degree programme is using a mobile learning game called

[8] Read more about open textbooks in the theme edition of Open and Online Education and the zone A step-by-step plan for creating an open textbook was developed by the Towards Digital (Open) Resources zone.

Knowingo. Lecturers Ard Jacobs and Judith Herrewijn note that the game element contributes to activating education and that the built-in artificial intelligence provides education that is tailor-made. 'Algorithms keep track of what a student knows well – or less well – and adapt the content accordingly. In this way, students receive a more personalised education. For a lecturer, it is impossible to manage such differentiation on an individual level.'

Optimal access to existing and new knowledge

Within the digital transformation of higher education, an international movement has been going on for years that strives to achieve optimal access to existing and new knowledge. This means that knowledge becomes accessible to everyone and that everyone is allowed to use, reuse and disseminate it with as few legal, social or technological restrictions as possible.[9] In science, this philosophy is gaining ground under the name Open Access and Open Science. The main goal of the Open Science movement is to make publicly funded research accessible to everyone.[10] From this point of view, the principle of Open Science is also fully applicable to educational resources, especially since research output also has the function of an educational resource.

> "Why would you not collaborate to safeguard the quality of educational resources in higher education? We can work more efficiently and effectively by sharing expertise, knowledge and resources. The idea already existed before the coronavirus, but now the technology has advanced, there are more and more educational resources available and the costs for digital educational resources are increasing. … The time has come for a national approach."
>
> **Theo Bastiaens**, Rector Magnificus of the Dutch Open University[11]

[9] The best-known example of such an open source is Wikipedia.

[10] The Berlin Declaration has contributed to the arrival of the National Open Science Plan in the Netherlands. See also the recently launched book by Frank Miedema, Vice-Rector of Utrecht University and professor of Open Science at the same university. In his book Open Science, the very idea, (2022), it is once again made clear that the digital transformation could also enable an important normative recalibration.

[11] Quote from the article: *A national approach to digital educational resources will take time, continuity and priority. Interview with Theo Bastiaens and Huib de Jong (Acceleration Plan, 2021).*

The added value of open educational resources for education is becoming increasingly clear (Schuwer, 2021). The creation, sharing and (re)use of educational resources contributes to the achievement of various goals and offers various opportunities.[12]
These include:

For educational institutions

- Exchange and co-creation of knowledge between institutions and/or professional communities;
- Positive contribution to institutional reputation (both nationally and globally);
- Encouraging innovation and experimentation;
- Contribution to Sustainable Development Goal 4 (inclusivity, equality, accessibility and quality education);
- Supports the social responsibility to make resources made with public funds available to everyone, as is the case with Open Science;
- Maintaining independence from commercial parties, such as publishers and EdTech companies;
- Costs (purchase, licencing fees, etc.) relating to copyrighted materials.

For lecturers

- Exchange of knowledge and educational resources related to the field;
- Larger database of educational resources and ideas;
- Inspiring other lecturers, being inspired by other lecturers;
- Opportunities to offer students richer, more personal and more inclusive learning experiences;
- Obtaining recognition and appreciation for the resources created, shared and used;
- Improving the quality of education through a varied and peer-reviewed range of resources and their evidence-based development;
- Possibility of a more efficient educational development process;
- Fewer (copyright-related) obstacles and bureaucracy.

For students

- Convenient and free access to high-quality digital educational resources;
- Taking control of the choices in digital educational resources
- Development of digital skills, information skills and peer review skills;
- Increasing student engagement and interactivity;
- Ability to be critical of the content and quality of the educational resources.

[12] The list is based on discussions with various stakeholders and builds on the placemat Prepare your own teaching using OER.

2.3 Higher education ambitions for digital and open educational resources

The arrival and development of new opportunities, new providers and new dependencies require higher education institutions to take a position on digital and open educational resources in higher education. Each institution is therefore working on this in its own way. Control of the production, (re)use and procurement of (digital) educational resources is a crucial part of this. It is precisely this theme that demonstrates the interdependence and interconnectedness of the academic and broader higher education communities (through the students' learning careers, the consortia in research and the shared infrastructure) and, hence, the added value of adequate coordination. Therefore, there is a need for a collective, national approach and a clear formulation of the shared goals.

We set the bar high for our ambitions. This requires cooperation between higher education institutions on the development and (re)use of educational resources, joint coordination with the (commercial) publishers and the formulation of preconditions for procurement. This requires a clear position with regard to two specific areas:

1) Higher education institutions choose to develop digital and open educational resources themselves or through open co-creation[13]. This is based on the principle that educational resources that have been created with public funding must be (digitally) available to everyone.
2) Higher education institutions will jointly agree on a number of preconditions with regard to the procurement and co-creation of commercial educational resources, so that future developments in this area can take place under the control of the institutions.

[13] For example, public-private partnerships between educational publishers and the institutions, in which the institutions commission and deliver the content and the publishers provide technical services.

Digital educational resources; two specific areas

Open licence

Decisions about the rights of use liewithin the sphere of influence of the institution, department, lecturer and/or student. This allows free access, as well as free use, adaptation, remixing and distribution.

Examples include: slides, videos, syllabuses, MOOCs, web lectures, infographics, wikis, podcasts, slidecast, vodcast, exams, internship and assignment reports, theses, scientific articles with a CC licence.

Issues
- Position in the institution's vision on teaching and learning
- Innovation and professional development of concepts
- Willingness to share information
- Development and production support
- Quality of resources
- Digital open educational resources can be disruptive
- Appreciation for 'lecturers who produce'

Stakeholders' meso
Directors, programme directors, education advisors, innovators, lecturers, students

Stakeholders' macro
Institutions, SURF, UNL, VH, OCW, NWO

Copyright protected

Deciding on the rights of use lies (in part) outside the sphere of influence of the institution, department, lecturer and/or student, for instance, with a commercial organisation, such as a publisher or Edtech company. Access has to be paid for and usage rights are limited; additional payment is required for additional usage rights.

Examples include: textbooks, e-learning modules, practice environments, videos, scientific articles, novels, AR and VR applications, games.

Issues
- Dependence on the market
- Prices and conditions
- Control of education and curriculum
- Control of educational data
- Safeguarding privacy and security
- Differing chain models
- Market innovation

Stakeholders' macro
Institutions, publishers, Edtech, distributors, SURF, UNL, VH, OCW

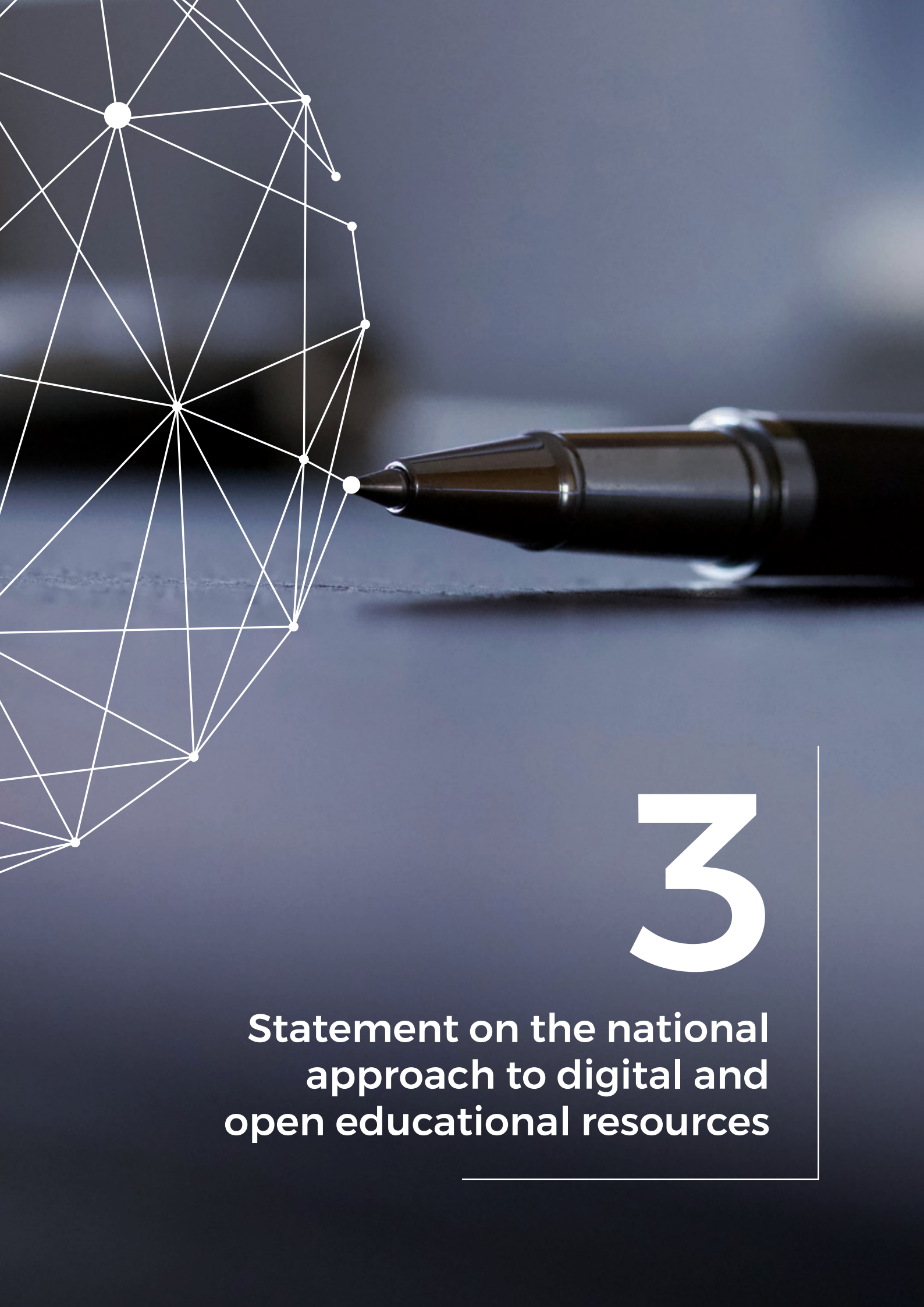
Preconditions for an effective approach

A number of clear preconditions must be met if an effective approach is to be taken:

1. Ensuring the autonomy of higher education institutions so that the creativity of students and lecturers is safeguarded, and the workload is or remains within reasonable limits;
2. Protection of public values, such as the privacy and security of students and employees;
3. Promoting the quality and social accessibility of higher education that professionals aim to achieve;
4. Providing career prospects: recognition, appreciation and facilitation of lecturers as creators of education.

Final note

The above analysis of digital and open educational resources in higher education requires a number of decisions from the institutions, SURF and the Ministry of Education, Culture and Science. In the next chapter, we will elaborate on the above position in the statement by the institutions that they will be controlling digital and open educational materials themselves and together.



3

Statement on the national approach to digital and open educational resources

3 Statement on the national approach to digital and open educational resources

Common objective

It is important that higher education institutions formulate a clear common objective for the development of digital and open educational resources in order to ensure that the institutions are in control. The speed of such a development depends partly on clarity about the direction of the institutions and the stability with which they maintain the course of implementation. This clarity about the intentions and the course is currently lacking among those involved (in particular employees who are active in the Acceleration Plan and in the transformation within several of the institutions). As a step towards gaining control of educational resources, a joint vision of the higher education institutions is therefore desirable.

In the previous chapter, two statements were formulated in this regard:

1. Higher education institutions choose to develop digital and open educational resources themselves or through open co-creation . This is based on the principle that educational resources that have been created with public funding must be (digitally) available to everyone.
2. Higher education institutions will jointly agree on a number of preconditions with regard to the procurement and co-creation of commercial educational resources, so that future developments in this area can take place under the control of the institutions.

Key message of the statement

Our proposal is to elaborate these positions further in the form of a statement. This statement, as was previously done for Open Access[14] and the national Open Science[15] plan, serves as the basis for a purposeful cooperation strategy of the institutions in relation to achieving greater control of educational resources.

[14] The Berlin Declaration on Free Access to Knowledge in the Sciences and Humanities is an international declaration on open access. See also: openaccess.mpg.de/Berlin-Declaration.

[15] The National Open Science Plan was launched in 2017. The National Programme for Open Science (NPOS) brings together parties working at the national level to promote Open Science in the Netherlands. See also: www.openscience.nl/nationaal-programma-open-science.

March 2022, Utrecht

STATEMENT ON THE NATIONAL APPROACH TO DIGITAL AND OPEN EDUCATIONAL RESOURCES

Through this statement, the Dutch public higher education institutions are expressing the ambition of the coming years, both as individual institutions and collectively, to control the creation, sharing, reuse and procurement of digital and open educational resources and the associated or derived data. In this way, higher education institutions will be able to safeguard important public values, both now and in the future. These include:

- *the quality of education,*
- *the formal and material accessibility of higher education,*
- *the effective use of public funds,*
- *the safety of students and staff*

By controlling educational resources, students can be facilitated at all stages of their lives and under all circumstances with access to the diversity of development opportunities offered by higher education. Students have affordable and readily available educational resources that they can use in their learning process.

By being in control of educational resources, lecturers have access to a multitude of high-quality educational resources in the design of their teaching process, which they can choose, adapt and apply within an appropriate mix – consisting of open, semi-open and commercial resources – as decided by themselves and the students.

The Dutch higher education institutions opt for a transparent and free exchange of educational resources. In the case of design and development by publishers or other commercial parties, the copyright in the content ordinarily remains with the institution and will be available for reuse by others. And this is based on the essential principle that materials created using public funds are publicly available and accessible.

By signing this statement, we the higher education institutions are choosing:

- *To control the development, (re)use and procurement of digital and open educational resources (and the associated data);*
- *That lecturers and students can use an appropriate mix of educational resources when designing the learning process;*
- *That the accessibility, privacy and safety of our lecturers and students are optimally protected;*
- *Providing lecturers and other education professionals with the scope and support for further professional development and shaping their contribution to educational innovation, including the development and (re)use of educational resources;*
- *To recognise and value lecturers for their contributions to the creation, sharing and (re)use of (semi)open educational resources.*

In order to achieve these goals, we the higher education institutions agree that:

- *We explicitly make our vision on digital and open educational resources part of our institutional strategy*[16] *and encourage and facilitate awareness of and the implementation of this Statement within the institution;*
- *The institutions coordinate and organise their efforts collectively within the existing frameworks of the Association of Universities of Applied Sciences (VH) and the Universities of the Netherlands (UNL);*
- *The universities of applied sciences and research universities will ensure that the design, sharing and (re)use of educational resources by lecturers is valued within the institutions;*
- *It will be studied how a (structural) facilitation scheme can be developed for lecturers, linked to the design, sharing and (re) use of digital educational resources, for making evidence-informed creation, sharing and (re)use of digital educational resources;*
- *In collaboration with SURF, the research universities and universities of applied sciences are working on the further design and (further)development of the existing technical infrastructure (edusources) to store, edit, search for, share and assess digital and open educational resources;*

[16] As part of the broader digital transformation strategy.

- *We will enter into consultation with the Ministry of Education, Culture and Science on securing appropriate financial and legal framework conditions in order to be able to assume public responsibility for digital and open educational resources nationally and internationally;*
- *We maintain, ratify and expand existing arrangements agreed with each other on, among other things, study data, educational data, licence agreements and privacy;*
- *We consult with the publishers and Edtech providers on the preconditions for and content of collaboration on the development and (re)use of digital and open educational resources under the control of the institutions and access to the associated data.*

Signed by:

Pieter Duisenberg,
President of the Association of Universities in the Netherlands

Maurice Limmen,
President of the Association of Universities of Applied Science in the Netherlands

Jet de Ranitz,
CEO SURF

Universiteiten van Nederland

Vereniging Hogescholen

SURF

Final note

The statement forms the basis for a (further) shaping of the transformation towards digital and open educational resources in higher education. A transformation that requires investment in infrastructure and time, but also offers a beckoning prospect of further reinforcing the strengths of Dutch higher education: high quality, attention to personal development, interaction within the academic or university community and flexibility and diversity of the offering. The aim is to lay the foundations for a growth model with a duration of ten to fifteen years, to which the institutions commit themselves by signing this statement.

The elaboration of this development will therefore require several steps in the coming years, primarily within the institutions themselves, but also jointly. This requires clear arrangements and preconditions (Chapter 5), a clear structure of governance (Chapter 6) and a shared view of the process (Chapter 7). We will start with a discussion of the open educational resources (Chapter 4). Because from the perspective of lecturers and students, it is there that the most benefit can be gained. While from the perspective of higher education institutions, the development of an open alternative is crucial for the relationship and cooperation with external commercial parties.

4

In three steps towards the adoption of open educational resources

4 In three steps towards the adoption of open educational resources

Through this statement, the Dutch higher education institutions are laying the foundation for a (further) shaping of the transformation into digital and open educational resources in higher education. However, if higher education is to deliver on the promise of digital open educational resources[17], several steps need to be taken. **Firstly**, there must be a wide range of high-quality open educational resources available.[18] **Secondly**, it must be possible to share, reuse and locate these educational resources openly through a user-friendly technical infrastructure. And **thirdly**, these must also be (re)used in teaching practice. Each of these three steps contributes to the potential success of the transformation towards digital and open educational resources. Incidentally, the move towards a large-scale adoption of open educational resources does not affect the fact that the use of the educational resources in education, the educational vision and the didactic model are authoritative.[19]

Opportunities for open educational resources

For the further development of educational resources in Dutch higher education, opportunities lie primarily in 1) the larger core subjects, 2) niche-specific subjects, 3) dynamic subjects where the content rapidly becomes obsolete and 4) the development of complex educational resources.

Core subjects

Every year, tens of thousands of new students from universities of applied sciences and research universities take courses in core subjects (and the associated educational resources) in large-scale disciplines, such as psychology, law or medicine. The development of educational resources under our own control and in an open manner offers educational institutions the opportunity to allow students to save considerable costs and to continuously improve and update the educational resources.

[17] See Chapter 2, Section 2 *Optimal access to existing and new knowledge* for an overview of the benefits of open educational resources.
[18] This concerns a broad range of educational resources, primarily those developed specifically for teaching purposes, but also scientific publications used in the teaching process. Here, the Open Science movement fits in seamlessly with the movement towards the practice of open educational resources.
[19] See also Placemat: prepare your own education with open educational resources.

Small degree programmes

For small degree programmes and highly specialised fields, there is currently a shortage of high-quality educational resources. The market has failed due to the limited market. Joint development of open educational resources contributes to solving this problem.

Dynamic subject areas

In subject areas where the content is rapidly changing, keeping open educational resources up to date in professional communities also offers great advantages. Take, for instance, technical fields such as toxicology and artificial intelligence. As soon as the publisher publishes a book, the content needs to be updated again. It may also concern specific areas of expertise. For example, a student says:

> "Every year, we had to purchase a whole new Kluwer[20] from the degree programme, because some law or other might have changed somewhere. I thought that was really ridiculous. It was very expensive and totally unsustainable".
>
> **Remi ter Haar**, student of Languages and Law (Utrecht University)

Complex educational resources

Due to the considerable development costs and the required expertise, it also makes to develop complex educational resources in a cross-institutional process. Examples include virtual reality applications or educational games.
Collaboration with current educational publishers is possible for the publication of these types of educational resources, but higher education institutions could also fulfil this role themselves. The universities of Delft, Groningen and Tilburg have already started to do this. Daan Rutten, coordinator of Open Press TiU, says: "It's a return of the University Press that you used to have, only now not for profit. If this continues, university libraries will soon have to incur fewer costs. Now they have to spend millions to buy back books from science financed by public money. We want to change that." (Univers, 2020)

[20] The bundling of legislation relevant to education (law collection).

STEP 1

4.1 Development and (re)use of educational resources

Without detracting from the work of the group of 'frontrunners' in higher education, we note that most lecturers currently hardly make any use of open educational resources.[21] They mainly use resources from scientific and educational publishers, supplemented by materials developed by themselves.[22] The range of the open alternative is still unknown to most lecturers or is still too limited in terms of content and form.[23] If we aim for lecturers to make extensive use of open educational resources, they will not be inferior to commercial alternatives in terms of availability, findability and quality.

The development of open educational resources offers many opportunities for lecturers. It enables them to demonstrate their didactic competence in the subject and the (evidence-informed and research-based) design of education.[24] As such, educational resources developed by lecturers become tangible expressions of their expertise, just as scientific publications do.[25] Such a system could also contribute to the appreciation of scientific publications in education; scientific material that is frequently used in the educational process is (additionally) recognised along this additional line.

Facilitating lecturers to develop educational resources could form the basis for the (re)appreciation of lecturership and at the same time make a positive contribution to good employment practices in higher education. To enable this, lecturers do need time, support[26] and their own peer review system.

[21] An online survey completed by 282 lecturers from higher education institutions shows that they "make little use of Open Educational Resources (OER) among the prescribed educational resources." (Van Casteren & Janssen, 2021, p. 24).
[22] Or with colleagues within the programme.
[23] Although numerous learning resources are already available through edusources, Wikiwijs and international platforms. Take, for example, massive open online courses (MOOCs) and over 40,000 open textbooks that have been created in recent years for all kinds of disciplines.
[24] Research by the Evidence-Informed Education Innovation with ICT zone shows that 1) top-down stimulation of evidence-informed work is important and 2) that lecturers/education developers lack the resources to develop and further develop evidence-informed education. (Acceleration Plan, 2021a).
[25] Andrew McKinney and Amanda Coolidge have developed an accreditation system for the creation, sharing and reuse of open educational resources (Coolidge & McKinney, 2021).
[26] This support takes place primarily within their own institutions, through educational experts, teaching & learning centres, media & libraries, ICT departments.

"The key to success lies in the ownership and professional space of lecturers. We must use the educational resources to strengthen them and not weaken them. As directors, we must then create the facilities within which lecturers in collectives can take control of the creation, sharing and reuse of educational resources themselves."

Hanneke Reuling, Vice-Chair of the Executive Board of the Amsterdam University of Applied Sciences

National arrangements for the development of open educational resources

Structural resources are needed to facilitate lecturers in the development of open educational resources in a structural way. Building on the Open and Online Education incentive scheme, a national scheme could be chosen for the development of education and educational resources for lecturers. We use the working title 'education innovation research' for such a scheme.

Tijd

One possibility is to organise the scholarships for this scheme based on the example of the NWO Talent Programme (Veni, Vidi, Vici) in science. This would also give the career paths of lecturers a clearer direction. With a Chi (Veni), you receive a grant to adapt your education based on existing material and to conduct research into it; with a Psi (Vidi), you develop new resources yourself and share them openly; with an Omega (Vici), you develop an entire line of education. Such scholarships lend status to the professional development of the lecturer, while the publication and (re)use of educational resources is included in the lecturer's appraisal interview. One of the options could be to progress to the position of lector or teaching professor. In this way, educational innovation research will be given a recognisable place in the higher education evaluation system.

Collectively

The appreciation of individual lecturer performance is important, but the cooperation component between lecturers is vital for a large-scale adoption of open educational resources. By sharing[27] resources in professional communities, lecturers build on each other's work

[27] These can be professional communities in which lecturers from the shared discipline jointly develop, share and (re)use educational resources. But these can also be communities with a broader orientation. For example, focused on a specific method, educational philosophy or educational resource.

and improve their quality together. Research shows that commonality ('getting to know and meet') is an essential prerequisite for the exchange of digital educational resources (Reesink, 2020). In addition, it benefits the motivation of lecturers to work together with colleagues and to exchange knowledge cross-institutionally.

> "I hate duplication of work. Why should I make my own educational resources if my colleague has already made them elsewhere? In addition, collaboration on educational resources leads to a discussion about what good education is. When we move beyond the silo culture and beyond competitive thinking, we make education better together. I trust that another lecturer can always add something to the resources I have created, and vice versa."
>
> **Lodewijk Witteveen**, lecturer in Smart Industry and Human Capital at Saxion University of Applied Sciences

Support

The provision of education has developed into a co-production in which different specialties complement each other. The interaction between lecturer and student remains fundamental, but the lecturer must be able to rely on the support of, for example, librarians, educational ICT professionals and the various educational specialists within the institution when deploying digital open education resources in teaching. The lecturer can contact these education professionals for questions, but also for hands-on support and relief for operational tasks. Examples include copyright, adding metadata, collection creation, content production, help with creating or editing digital educational resources (videos, animations, games, etc.), privacy and GDPR, curation and the like.

> "However, the high workload in education means that lecturers cannot simply create extra resources. Blended education also requires different skills and competences of a lecturer than regular education. This requires support and facilitation."
>
> **Aline Bouwes**, lecturer in Nursing at Utrecht University of Applied Sciences

STEP 2

4.2 Finding open educational resources

The open approach places high demands on the necessary technical infrastructure for the placement, storage, sharing, finding and processing of the resources. Together with surf, the educational institutions developed the first step towards such an infrastructure through the edusourcesplatform. There are currently more than 4,000 open educational resources on this platform, licensed under Creative Commons licences. Lecturers can view, download, adapt, use and assess the educational resources. It is also possible (with a licence) to upload and share educational resources yourself.[28] Community pages have been set up to make collections in a particular domain accessible, for instance, using a specialist vocabulary.[29]

Edusources is a good start and, in the tradition of SURF, was designed with the field in mind[30], but from the perspective of education, the platform does not yet meet the necessary requirements. In spite of this, we propose that the statement (Chapter 3) provide SURF with clarity in terms of the further development of edusources, but explicitly with management engagement and on behalf of and under the control of the institutions.

Based on this, we state the following. Edusources currently lacks information on the extent to which the educational resource provides insight into the didactic and pedagogical context and the intended learning outcomes. There is a randomness in the supply of resources and variety is limited.[31] The possibilities for reusing educational resources are cumbersome. And a survey shows that the platform is still hardly known among lecturers.[32] However, despite the critical remarks, edusources has developed a clear environment that is worth building on.

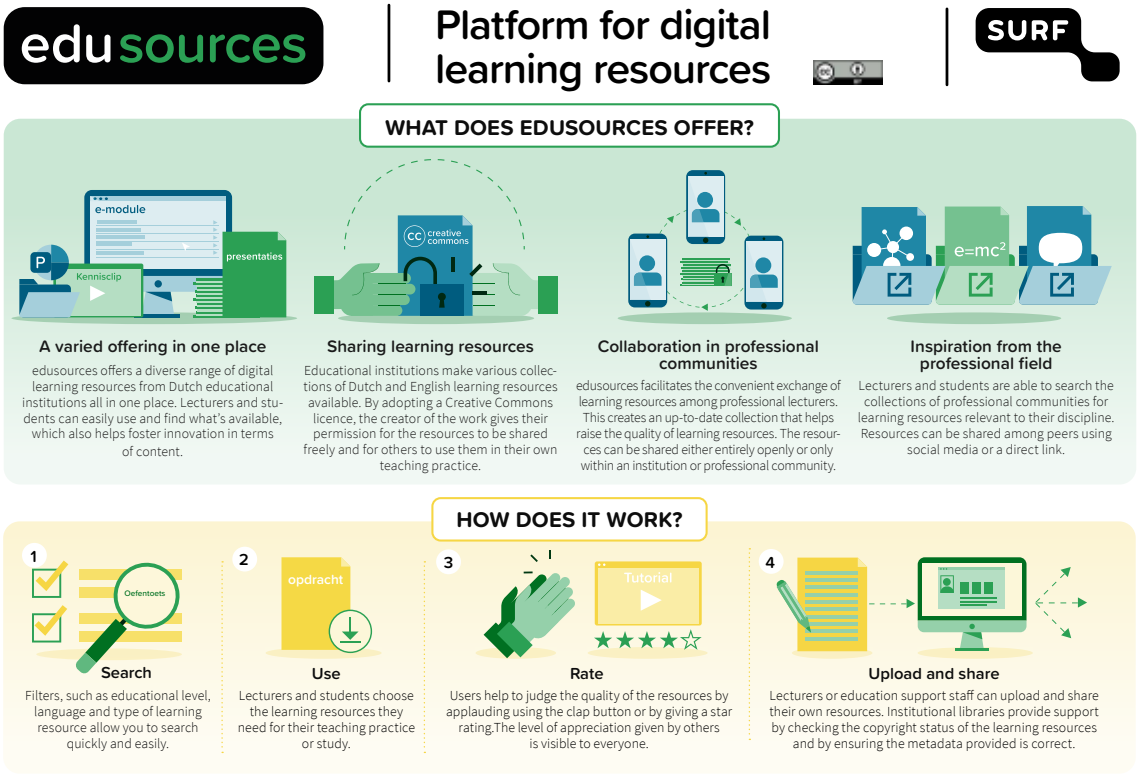
[28] Lecturers can receive support from their institutional library, for example, for copyright and metadata checks. More information: edusources.nl/how-does-it-work.

[29] See: edusources.nl/community's

[30] Edusources went live this year. This was preceded by various processes, such as a pilot with a few institutions, a needs assessment, sounding board group and positive advice from the portfolio advisory board. A user survey among lecturers will follow in the autumn of 2021.

[31] The supply of edusources is currently being increased by harvesting open content from third parties (exchanging sources between repositories). A content advisory council has been set up to select and prioritise this; it is made up of lecturers from professional communities and staff from libraries.

[32] These observations are not based on a systematic evaluation. They are derived from a number of interviews with stakeholders (see Appendix C for the overview of all interviewees). They are also very aware that the system has only been online for a limited time. SURF is aware of the comments.



In order for edusources to function as a platform for digital educational resources, groups of lecturers in collaboration with SURF must be able to continue to work on its design as they see fit and as they wish.[33] It is also necessary to evaluate the use of edusources annually, paying attention to best practices and also to the educational resources that are not (yet) suitable for open. Based on this, the higher education umbrella organisations UNL and VH can make further agreements on the next steps that are necessary towards a fully-fledged common policy for open educational resources (we will elaborate on this in Chapter 6).

STEP 3

4.3 Using, reworking and improving educational resources

The fact that the reuse of open (digital) educational resources is currently still low is partly due to the limited availability, user-friendliness, attractiveness and findability of open educational resources.[34] In addition, the open method of working naturally also calls for a change

[33] A first step has been taken with this by means of the requirement study on digital educational resources (Reesink, 2020). Important user wishes are: 1) quick insight into the nature and quality of the resource, 2) shielding.

[34] In particular, the Dutch-language offering. There is a wide range of products and services available internationally, with SURF taking steps to make these available via edusources as far as possible. For example, by harvesting open textbooks from other websites, such as www.doabooks.org. This directory of open access books contains at least 44,674 peer-reviewed scientific books.

in culture and behaviour in higher education. Lecturers must experience the added value of this method and be encouraged to embrace the open method.

A culture of open cooperation

The change begins with the insight that lecturers often do not need to develop entirely new resources individually when using open educational resources, but that it is about the smart reuse, processing and 'upcycling' of materials developed by others (Baas & Schuwer, 2020). An important condition is that the technology must also make this possible: it should be as easy as possible for lecturers to remix existing resources. For example, a lecturer wants to use an existing video, but they can cut it up into clips which they can then link to assignments or add their own voice to the video. So that the resource fits exactly within your own teaching context and learning objectives (within a module or a learning pathway). The easier resources can be 'mixed and matched', the more successfully the various resources will be used in education.

Secondly, lecturers must be made aware of the fact that giving each other active feedback improves the quality of education. In order to promote this understanding, at least two things are important

1. The recognition that there are already many partnerships between lecturers within disciplines and sectors. Encouraging and facilitating collaboration and community building is therefore essential for this development. Teachers are more likely to share and reuse resources from peers who speak the same language or because they know each other.
2. In addition to the meeting with colleagues, a clear policy for the appreciation and recognition of lecturers is crucial. In this way, giving feedback on and using educational resources can form part of the professional development of lecturers. By giving educational resources a prominent role in the valuation and evaluation systems, their creation, sharing and reuse offers the prospect of a recognisable career in higher education.

Increase student engagement by working with open educational resources

With regard to the choice and development of educational resources, the role of students in the current educational process is very limited. The most important consideration they make in this context is whether they purchase the prescribed resources and then whether they also use them.[35]

[35] for several years now, there has been a trend in which students refrain from buying study materials. For example, because they find them too expensive, of too low a quality, because they are used too little in the teaching itself, because they borrow or copy the materials, or prefer alternatives such as online summaries.

> "I see that some of my fellow students choose not to buy or use their books during their studies. They then pass their exams based on the lectures and online summaries. I still buy and read my books because I am convinced that it is an important part of mastering the material. It also helps you learn to think critically about the meaning of certain theories and research. Instead of being handed the answer on a plate in a summary or by your lecturer."
>
> **Nienke Landman**, Utrecht University Economic Policy student

However, among students, the creation, sharing and (re)use of each other's educational resources is already a widely embedded practice. Usually as a cost-saving measure. Within the programme, (purchased) educational resources, lecture notes and summaries are frequently shared and copied. This also happens at the national level via platforms such as Stuvia[36] and StudeerSnel.nl.[37] Numerous educational resources can be found there, neatly sorted by institution, field and category.[38] In addition, they have been assessed and reviewed by fellow students. Individual purchases or subscriptions give students access to this material.[39] Students usually receive a fee for placing the materials.[40] In addition, YouTube is a widely used informal source of educational resources for students. There are videos for almost every discipline. As far as quality is concerned, students rely on their own judgement and that of the reviewers in the comments sections. A student says: "If a video like this contains comments such as 'you are my hero' or 'best explanation ever', then I know it's okay".

We can draw two cautious conclusions on this point. Firstly, there is dissatisfaction among many students with the educational resources that need to be purchased. And secondly, that students abandon these by gathering alternative educational resources in the informal circuit, without worrying about copyright or the formal quality of the content. They find their own ways to pass the exam.

However, this also makes it clear that there are opportunities to use open educational resources to increase the role and involvement of students in the educational process.

[36] At Stuvia, more than 155,000 summaries are offered by around 14,000 students (Emerce, 2015).
[37] Studeersnel was founded in 2010 based on the question: 'Why aren't all study documents located in one place?'. Meanwhile, around 8 million documents are used on the platform each month by 15 million students (Adyen, 2021).
[38] There are also books, exam questions, lecture sheets and examinations.
[39] Students have access to this material for a small fee (from 2 to 10 euros) or via a subscription (€ 36 per year).
[40] Stuvia paid more than half a million out to students in 2015 and the best-earning student seller earned €7.349 (NOS, 2017).

Students and lecturers are much more able to co-create an optimal mix of educational resources for their own degree programme, in line with the specific educational vision and learning objectives. In a far-reaching form of educational co-creation – in which students are not only consumers but also creators of educational resources we refer to open pedagogy (Utah Libraries, 2016).

Even with a less pronounced open vision on education, it is clear that higher education institutions attach importance to students' appraisals of the teaching in general and the educational resources in particular. This is demonstrated, among other things, by the strengthening of the role of the programme committees within the degree programmes. If open educational resources are used within a programme, it is possible for programme committees, for example, to influence the content and form of the resources more directly, working together with the lecturer team. Of course, students (regardless of whether they are members of the programme committee) can also be involved in the design process of teaching in other ways (student assistant, teaching assignment, preparing exam questions, design challenge).

> "Give students a say in the learning experience. The perfect way to do this is via the programme committees. I miss innovation, interaction and forms of alternative testing in many of the current lecture designs. That could really improve if you let students think along. On our programme committee, for example, we made sure that we started using a free open-source programme within the programme.[41] We can do the same with the educational resources."
>
> **Thomas van der Meer**, Applied Physics student at the University of Twente and ISO board member

Partnerships with educational publishers and providers

In this chapter, we have emphasised the public management, use and development of open educational resources. Open educational resources as products from, for and by the institutions. This means we have temporarily disregarded key educational partners such as publishers and bidders. However, commercial parties can undoubtedly play a role in the open educational resources. For example, providing services in didactic design, content distribution and educational innovation. Especially in the case of complex digital educational resources, the expertise of publishers and EdTech providers is in addition to the expertise

[41] Python instead of Mathlab.

of the institutions. The art is to develop new models of cooperation. For the publisher, this means a different business model: they are then paid for the service provided rather than through the sale of individual products.

In other countries[42] positive experiences have been gained with variants of these types of hybrid business models (Wiley 2020b). It is advisable to further investigate the possibilities for this in the Dutch context in consultation with the various partners in the educational chain. This is part of broader cooperation within the framework of digital educational resources. At the end of the next chapter, we will look at this in further detail.

Final note

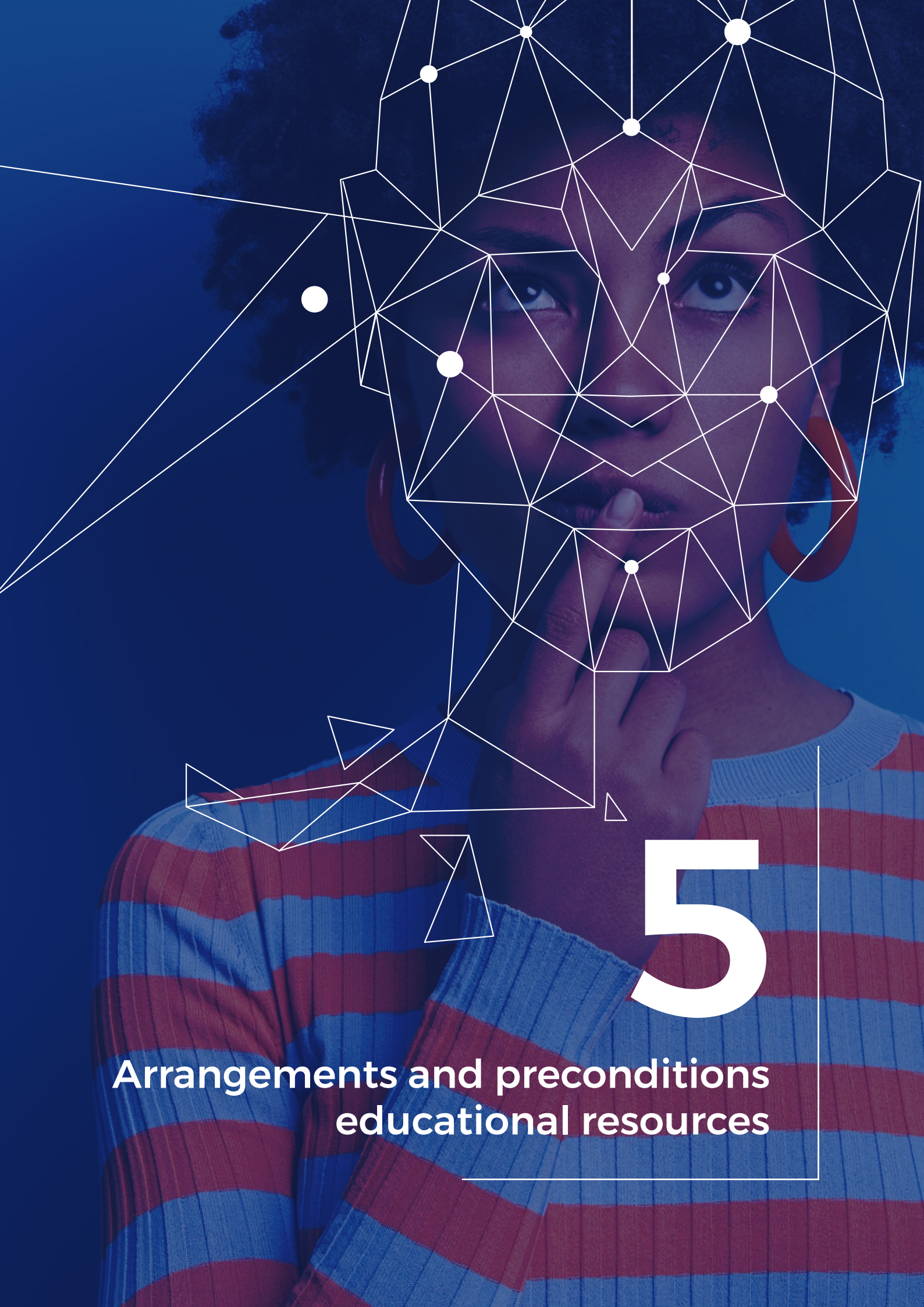
Stimulating and facilitating the development and (re)use of digital and open educational resources is fundamental in meeting the ambitions of the statement. The transformation towards digital open educational resources that is required demands a number of steps, from awareness of the advantages of digital and open educational resources, the design of the infrastructure that facilitates lecturers and gaining experience with their actual use. In summary, we identified the following measures that will make it possible to complete the steps:

1. Promote existing partnerships and make new ones possible;
2. Recognise and value the expertise required for both the design of educational resources and their (re)use;
3. Stimulate the design of open digital resources by lecturers, for example, via national scholarships;
4. Involve students in the design and evaluation of digital and open educational resources.[43]

These measures require the development of an infrastructure that facilitates lecturers. SURF will have to receive a clear mandate from the institutions to further develop edusources and gain insight into the resources and expertise available for this purpose. Performance of the assignment will require very clear coordination with the end users (lecturers and students) and have to take account of the responsibility of the institution's boards.

The commitment to open educational resources is an investment in the quality, accessibility, effectiveness and autonomy of higher education. However, gaining ultimate control of educational resources will require more than a practice of opening up, sharing and (re)using educational resources. Clear agreements and collaborations will also be needed between the various educational partners in the educational chain. We will discuss this in the next chapter.

[42] For example, the American OhioLINK and SUNY and the Norwegian Digital Learning Arena (NDLA).
[43] This is in line with the position paper *Educational Innovation with ICT: Attention for the Lecturer*, produced by the zone. The first of eight recommendations reads: 'Consider students not only the goal of professional development, but also involve students as partners in professional development.



5

Arrangements and preconditions educational resources

5 Arrangements and preconditions educational resources

In the previous chapter, steps and measures are described that are necessary for the transformation of Dutch higher education towards more control of digital and open educational resources. However, in addition to the incentive provisions that were discussed, other arrangements are also needed. Especially in view of the context of privatisation and commercialisation of educational resources.

We call the entire set of arrangements that will be necessary to put the control into the hands of institutions the **arrangements matrix**. In any case, the arrangements concern:
- copyright
- data
- assigning metadata and various ICT standards
- (joint) procurement and co-creation of educational resources

5.1 Copyright arrangements

Sharing materials is now easier than ever, but is often limited by copyright protection. Arrangements have already been agreed with publishers' organisations (such as Repro and Stichting UvO) to relieve lecturers.[44] Despite the educational exception[45] (Kennisnet, 2016) educational institutions regularly have problems with copyright and the associated additional fees. Administrative burdens for monitoring and justifying the use of educational resources are only increasing.[46]

> "The strange thing about the current situation is that educational institutions now pay four or five times for the resources.

[44] Higher education institutions each have a contract with Stichting UvO. This contract, the so-called easy access scheme, regulates the payment of copyright fees to the publisher. Long acquisitions fall outside the scope of the contract and must be paid for separately.
[45] The educational exception means that lecturers may use copyrighted resources for educational purposes. To this end, UNL, VH and the institutions make agreements with copyright organisations.
[46] SURF, together with Nai-hbo, has developed Auteursrechten.nl, which provides higher education professionals with information on copyright law (SURF, 2021).

> First, we pay our researchers to make publications. Then we pay the publishers to view our own publications. We then pay the publishers to use these publications in our teaching. If lecturers then incorporate the fruits of the research into a handbook, we will pay for it once more! And if we do not use it correctly, we then have to pay additional fees."
>
> **Sylvia Moes**, Innovation Manager Education Support, VU University Amsterdam

Copyright issues are therefore a good and key motivation for the transformation towards open educational resources. Because with open licences, educational resources that have been developed with public funds actually remain in public hands, without unexpected costs.
Educational institutions must make good agreements with each other or make good arrangements about the use of these publicly developed resources, taking into account the difference in profile, investment costs and the phases in the development of the resources (see text box).

Grades of open educational resources

One of the goals of open educational resources is to make knowledge universally accessible, especially when it comes to resources that have been developed with public money. Nevertheless, there can be many reasons for introducing some limitations in the meaning of openness as a principle. For example, because of the considerable costs associated with the development of digital educational resources, because of the sensitivity of the information that is shared or simply because the resources are still in a premature state. The Creative Commons framework therefore works with six different types of licence. And the Open Science and Open Access movement differentiates according to the degree of openness: green, gold and diamond (Vrije Universiteit (yeaar unknown)).
Such differentiation is also possible and probably desirable for open educational resources. One possible incentive for this could be, for example:

- Bronze: open sharing within the institution
- Silver: open sharing within the professional community
- Gold: open sharing between public institutions
- Platinum: open sharing with the world

5.2 Data arrangements

The use of digital educational resources provides a multitude of data on the behaviour of students and lecturers (degree programmes, educational resources used, study results, learning behaviour, etc.). This is valuable data that can be used to analyse and improve the quality, effectiveness and efficiency of education and the participants. Due to the increase in the number of data sources and the technical possibilities to analyse these data sources – for example through the use of algorithms and artificial intelligence – the number of possible uses of study data is also increasing. Possibilities, because the expertise to actually make use of them is still in development. It is important for the institutions to help guide this development so that data is publicly managed and protected, and the privacy and safety of students is guaranteed.[47] The use of the Privacy and Ethics Reference Framework for Study Data by institutions already offers the necessary safeguards for this.[48]

Educational institutions have access to data

It is important for the quality of higher education that educational institutions can take and retain responsibility for the data that is produced during the education process ('ownership'), for example, when using platforms and third-party products. At this point, it is unclear what the relationships are and how they will evolve in the future. It must be investigated with publishers and other providers how research and education can collaborate in this area, but always on the basis of the responsibility that the institutions have for the safety of students.

> "There is a lot of confusion about the privacy of students. For instance, I've heard that you can see on Brightspace who clicks what, but I don't know who can see all that. Can the lecturer see that? Other students? The company behind it? In general, it is easy to use programs such as Brightspace, Miro, Zoom, Skype, Canvas and so on. Students are forced to use these programs, but the information about safeguarding their privacy often does not reach them. This creates ambiguity and fear: who knows, all these companies may soon have all your data."
>
> **Thijs van Aken**, student of International Relations at Leiden University

[47] The technical characteristics of platforms, educational apps and educational resources influence the way in which knowledge can be shared and the ways in which the educational process can be organised. By developing a well-functioning environment for educational resources, educational institutions have an important trump card in guiding the digital transformation themselves.

[48] The Privacy and Ethics Reference Framework for Study Data is an initiative of the Education Data zone of the Acceleration Plan.

More public control over data is also important because of the trend in providers of educational resources from content-driven business models to data-driven business models. In practice, this could also mean: evolution of a social enterprise to an (internationally) commercially driven enterprise, as José van Dijck clearly demonstrated in her research into tech companies (Van Dijck, 2016). By agreeing arrangements on data, higher education institutions can prevent the student from becoming a product and make educational institutions dependent on private parties for this data. Combining forces is an important first step in this context. *We therefore propose that the public higher education institutions jointly formulate a position on the use of and access to data that is created during the use of educational resources. From this strong position, institutions can then enter into discussions with commercial partners.*

5.3 Arrangements on Metadata and ICT standards

Arrangements on metadata[49] and ICT standards[50] are crucial for effective access to educational resources. What is the content of the resource in question, who is the target group, what is the level, who is the author, which learning outcome is achieved, which version is it, and what type of file is it? Unambiguity is a prerequisite for mutual exchange, finding and editing of educational resources. The right assignment of metadata makes it quickly clear to lecturers and students what educational resources they are looking at and whether these are relevant to them. At the same time, unambiguous technical standards are important for the automated processing of resources, for example.

That is why it is necessary, among other things, to make mutual agreements about how resources are described. An international standard for metadata, IEEE LOM (Learning Object Metadata), already exists. A Dutch variant of this has been made: NL LOM.[51] Collectively accepting and implementing both standards[52] is a relatively simple and important

[49] Metadata is data that describes the characteristics of certain data. So it is actually data about data. Keeping or linking metadata to the data to which it relates has the advantage that the data can be found more easily. The disadvantage of working with metadata is that metadata must be added to all documents or data (Wikipedia, 2021).

[50] Standards support data exchange between ICT systems. The use of standards increases the interoperability, findability and interchangeability of ICT products. Here, too, the open route is preferred (Digitale Overheid, 2021).

[51] The translation and further interpretation of these arrangements are made by the ECK Metadata working group. The members of the working group represent, among others, educational institutions, software suppliers, distributors, the Educational Publishers Group (GEU), the National Library of the Netherlands, the NTR, Beeld en Geluid, Kennisnet and SURF.

[52] Both between and within the institutions and in relation to external partners.

step.[53] Institutional book libraries or media libraries can play an important role in this process of assigning metadata.

> "What the library can do for education is still a well-kept secret at most universities. More than is currently the case, libraries can play a facilitating role in making it possible to create, share and reuse digital and open educational resources."
>
> **Hilde van Wijngaarden**, director of the University Library of the University of Amsterdam

5.4 Arrangements on the procurement of educational resources

The decision-making and practice regarding the procurement of educational resources is almost entirely decentralised in the current Dutch higher education system. Especially where lecturers choose and prescribe the educational resources for students. This largely characterises the current educational resources market as one that functions on the basis of the transaction between commercial parties and individual consumers (business-to-consumer).[54] And the individual consumers, the students, decide whether or not to purchase the resources.[55]

The current educational resources market ensures a high degree of autonomy for lecturers, both in terms of the use of educational resources and the possibility of cooperation with publishers. As far as the content of the teaching is concerned, this is part of the professional space of lecturers that must remain protected.

[53] Partly due to technical developments, permanent steps will have to be taken with regard to the standards. Apart from metadata arrangements, arrangements must also be agreed on the technical link and interoperability of educational resources and materials. LTI agreements (Learning Tools Interoperability) apply to this (Edustandaard, 2021).

[54] There are exceptions. For instance, Maastricht University works with *problem-based learning* (PBL). The lecturer chooses the resources, asks the university library to make them available (digitally, where possible) and the student uses the relevant resources. However, students must still purchase manuals and the like.

[55] The study *Digitale leermaterialen in het hoger onderwijs* (Van Casteren & Janssen, 2021) describes the basis on which lecturers and students choose educational resources. Awareness of certain materials, availability, price and ease of use are the most important factors. However, it also appears that students are increasingly choosing not to purchase educational resources. For example, by borrowing them from the library, copying them from other students or simply by buying the (online) summaries.

Role of book libraries and media libraries[56]

The direct link with the purchase of educational resources by students is certainly unwise due to the emergence of digital and open educational resources. The increase in market power of providers of educational resources requires a counterweight in the context of the purchase of educational resources. This is one reason to develop educational resources in-house. However, it will take time to achieve this systematically. Therefore, a solution for the moment could be to place the procurement of educational resources in the hands of the book libraries or media libraries on the basis of management guidelines, insofar as the educational resources are not produced in-house. This is in line with the existing activities of the book and media libraries.[57] However, it does require a clearer positioning of the libraries within the institutions (mandate), of the national conference of book librarians and media librarians and - in the governance model proposed by us (Chapter 6) - with regard to the common policy, in addition to the management relationship within the institutions, also a clear management line towards UNL (rectors) and VH (BCO).

Partnerships and co-ordination of educational resources with commercial parties

Educational publishers and businesses are important partners of the higher education institutions. The digitisation of higher education and the associated educational resources present a challenge to develop new forms of cooperation. In addition to active collaboration to develop educational resources through co-creation (see Chapter 4), this also includes a series of general coordinating arrangements that fit within the framework of the public responsibility of the institutions. Arrangements regarding metadata, technical standards, interoperability, editability, cybersecurity, copyright, etc.[58]

> "We are on the eve of a great deal of uncertainty.
> This is precisely why it is very good that Dutch publishers
> and educational institutions can talk to each other."
>
> **Menno Thijssen**, CEO Edumundo

[56] Or possibly other bodies within the institutions, such as *Teaching and Learning Centers*.

[57] In addition to the joint procurement for research (big deals, consortium deals), libraries also negotiate the joint procurement of e-book packages and other educational resources. For this purpose, a procurement organisation has been set up by the UKB (partnership of the Dutch university libraries and the Dutch National Library) and SHB (libraries of the universities of applied sciences). This purchasing power can be used more broadly for educational resources, aimed at better matching the supply of publishers to demand. The current pricing and restrictions on number of users make purchasing educational packages and e-books very unattractive.

[58] A recent market survey of *Collaboration between educational publishers and the Acceleration Plan* (Hoekstra 2021) shows that Dutch educational publishers are open to collaboration, especially in the areas of standards, (metadata and *learning analytics*).

There may be some lessons to be learned from basic education, where the various chain parties[59] organised collaboration in the Edu-K. platform. Edu-K is based on a covenant (Privacy Covenant, (date unavailable)) between parties in the education chain on the handling of, for example, pupil and personal data. No such platform exists yet in higher education, while the needs are (largely) the same here. A platform such as Edu-K can help to develop arrangements between institutions and providers of educational resources. Various stakeholders see a role here for both the institutional libraries and SURF.

Final note

In the previous chapter, we discussed evolution towards the use of open educational resources. This chapter focused on the arrangements and preconditions necessary to put control of educational resources in the hands of the institutions. The following is important for this:

- Good arrangements on the effective handling of the principle and grades of OER and, in particular, on the way in which developments within and interests of each of the institutions are handled within a growth model.
- The use and protection of data and metadata requires a clear position, in particular on the ownership of data that is created in partnership with publishers. We propose that ownership remain with the institutions and that arrangements be agreed on the possible use of data that is important for the development and quality of the educational resources.
- With regard to the procurement by institutions of educational resources that are not self-produced, we propose that the book library or the media library and SURF be authorised to do so.

The arrangements referred to in this chapter are intended as general cooperation arrangements, both within the framework of the UNL and the VH, and between the umbrella organisations and the commercial partners. We wanted to outline a starting point from which work can be done in the coming years on the increasing control that higher education institutions have over educational resources. Due to its inherent complexity, the control issue imposes specific requirements on the organisation and governance. We will discuss this in the next chapter.

[59] Schools, trade associations, educational publishers, distributors, software suppliers and umbrella organisations.

6

Organisation and governance

6 Organisation and governance

Control of digital and open educational resources requires clarity of management. Clarity about the ambitions, mutual agreements and their implementation. Based on this observation, it makes sense to think about the specific design of the collaboration. After all, structure always follows from the goals that are pursued. This brings us to the next step: What does the collaboration we wrote about in the previous chapters look like in terms of organisation? What roles are there in the collaboration and how do they relate to each other?

6.1 Collective and coordinated action needed

The educational institutions are together, through the coordination meetings with VH and UNL in the lead, in close cooperation with SURF and the Ministry of Education, Culture and Science, with the aim of arriving at a coordinated effort that leads to control of the production, creation and (re)use of educational resources. The core of this effort lies in connecting the various existing agendas and action lines. This involves more than the demand for organisational management: it involves the entirety of preconditions and facilitation that stimulate the meeting, creativity and cooperation.[60] After all, the issue of digital and open educational resources is directly linked to the steps that are currently being taken towards Open Science and Open Access, blended education and the shaping of flexible learning pathways, the recognition and appreciation of lecturers, and public responsibility of knowledge institutions.

> "To make progress on educational resources, it is now time for courage and fortitude."
>
> **Hans Nederlof**, Member of the Executive Board of Fontys Universities of Applied Sciences

In spite of the interdependence of content and the importance of cooperation, the forces are still being combined too little and too ineffectively. This is understandable given the complexity of the playing field/arena and the extent of the problem. The tendency to fragment seems greater than that to integrate.

[60] On the interaction of formal and informal processes in knowledge development in networks, see Ichijo & Nonaka (2007) and Cross et al (2001).

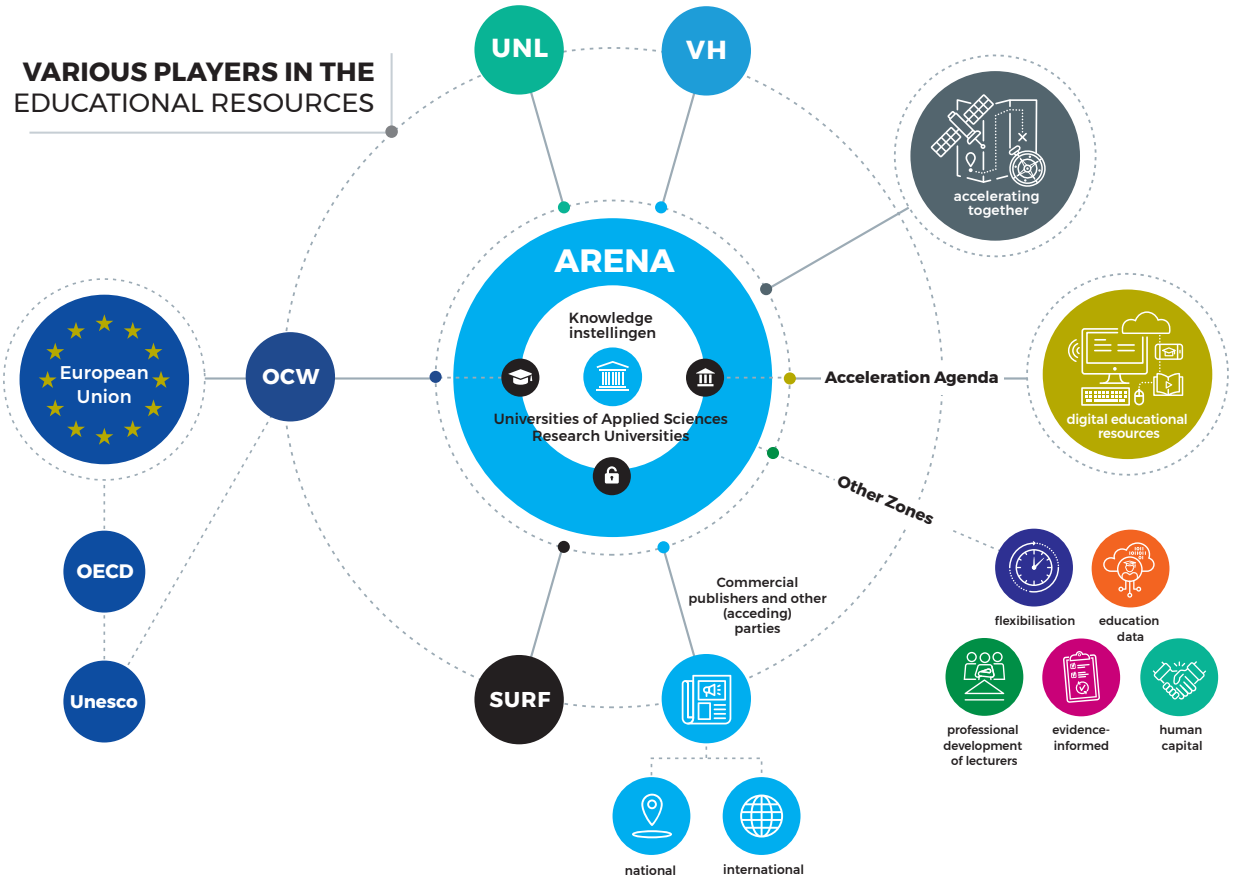


Figure 1. Various players in the educational resources arena.

To act in a complex world, it is necessary to reduce it to the core. For us, this was the reason to map out the arena (Figure 1). Within the arena, all 'players' are taking steps in their own way in the transition towards digital and open educational resources. With the institutions, the umbrella organisations of research universities and universities of applied sciences, the Ministry of Education, Culture and Science and the SURF cooperative have already taken substantial steps forward. Nevertheless, various initiators do not always manage to find each other, and the impact of experiences is less than had been hoped for. For example, the drivers within the institutions – often active in the various zones of the Acceleration Plan – do not know whether they can count on management support. In addition, initiatives by and in collaboration with SURF, for example, seem to often take place outside the management perspective. This makes it difficult for valuable projects and products to find their way to and within the institutions. On the other hand, the institutions themselves are insufficiently able to steer and manage the demand articulation in such a way that this delivers the desired translation of activities by SURF and the Acceleration Plan.

> "Of course, SURF also has no easy task. And we, the managers, should also look in the mirror. As institutions, we are members of SURF ourselves. In fact, we are SURF. As managers, we have to give SURF an assignment that they can use to get started."
>
> **Daniël Wigboldus**, President of the Executive Board of Radboud University

Addressing the problem requires, firstly, greater clarity about the roles and responsibilities of the various parties involved in gaining control over digital and open educational resources.

6.2 Stakeholders' roles

Uniqueness and autonomy of universities of applied sciences and research universities

Before we describe the roles and responsibilities of the various actors, it is relevant to explicitly consider a topic that we have avoided so far. This concerns the relationship between the two segments of higher education, the universities of applied sciences and the research universities. We assumed that the questions and challenges arising from the transformation to digital and open educational resources are similar for both types of higher education. We deliberately assumed that higher education is a more or less homogeneous sector, with each institution having its own profile. This is partly in the belief that the digital transformation will benefit from cooperation and pooling of forces between all higher education institutions. At the same time, it is clear that the routines in and the structure of research universities and universities of applied sciences differ (for example, as we previously established, when it comes to the position and role of the book and media libraries). In addition, it is clear that the way in which educational resources are handled differs between universities of applied sciences and research universities in terms of a national or international focus and the relationship with lecturers' own research output, which is used in teaching in the form of academic articles, for example.

Our proposals take account of these differences in two ways, without detracting from the importance of cooperation and pooling of efforts, namely:

1. We always work on the basis of the responsibility and autonomy of the institutions. Within the various worlds of both research universities and universities of applied sciences, there is therefore plenty of room for different interpretations and approaches to the transformation, including the possibility of making agreements with each other at the regional level, for example.
2. Throughout our discussion and argumentation, decisions are taken within the framework of the UNL and VH, respectively. Within each of the umbrella organisations, there is scope for individual accents. Of course, the aim is to coordinate decision-making well in advance and to share the lessons learned. In view of the existing coordination and cooperation, this does not appear to be a problem.

Open coordination

For the other parties, we assume::

1. That SURF, as a cooperative, contributes to the achievement of the common ICT goals of higher education institutions. SURF is accountable to the client, namely the higher education institutions represented by its own members' council, and the umbrella organisations (such as the conference of rectors within the UNL or the BCO within VH).
2. That the UNL and VH represent the interests of their institutions and ensure coordination between the institutions, in this specific case aimed at joint task formulation and steering a course towards digital and open educational resources. Existing forms of consultation (rectors, management committee) are already shaping this in many areas.
3. That it is up to the institutional boards themselves to take the necessary steps to create and strive for digital and open educational resources in a form that fits within the strategy of the institution and the logic of their own organisation.
4. That the student unions stand up for the interests of the students and mobilise hands-on experience. In the decision-making process, they coordinate with the UNL and VH, in which the student unions use the knowledge of their constituencies. In particular with regard to topics such as educational quality, affordability, accessibility and study safety and privacy;
5. That commercial parties are important partners, but outside the public collaborative relationship. With these parties, it is being investigated how public-private cooperation can take shape, for example, for the co-creation of open educational resources if and insofar as this is within the public responsibility of the institutions.
6. That the Ministry of Education, Culture and Science supervises the quality, accessibility, effectiveness and autonomy of higher education and higher education institutions on the basis of system responsibility and encourages desired developments. Within the framework of educational resources, the Ministry will be consulted on the (co-)financing of the implementation projects, the (legal) ratification of national agreements and the conduct of European and international lobbying on behalf of the institutions. For example, with regard to copyright and the handling of data.

The reality of collective action is layered and varied.[61] But that stratification and variation is seen in this context not as a disadvantage, but as an advantage. A critical success factor is that all those involved have the same goal in mind. If from thatshared goal all sorts of different experiments take place it would above all constitute a gift. Especially if those involved are willing to learn from each other and with each other and to draw conclusions for themselves and everyone. In this context, the concept of open coordination (Europe

[61] Our analyses and the resulting proposals are strongly based on the institutional theory of networks as developed by Elinor and Vincent Ostrom. See, for example, *Background on the Institutional Analysis and Development Framework* (Ostrom, 2011). The framework has roots in research into collaborating knowledge institutions (Hess & Ostrom, 2011).

now, 2021)[62], which links shared goals and shared responsibilities for those goals to full transparency between the collaborating parties, fits in well.

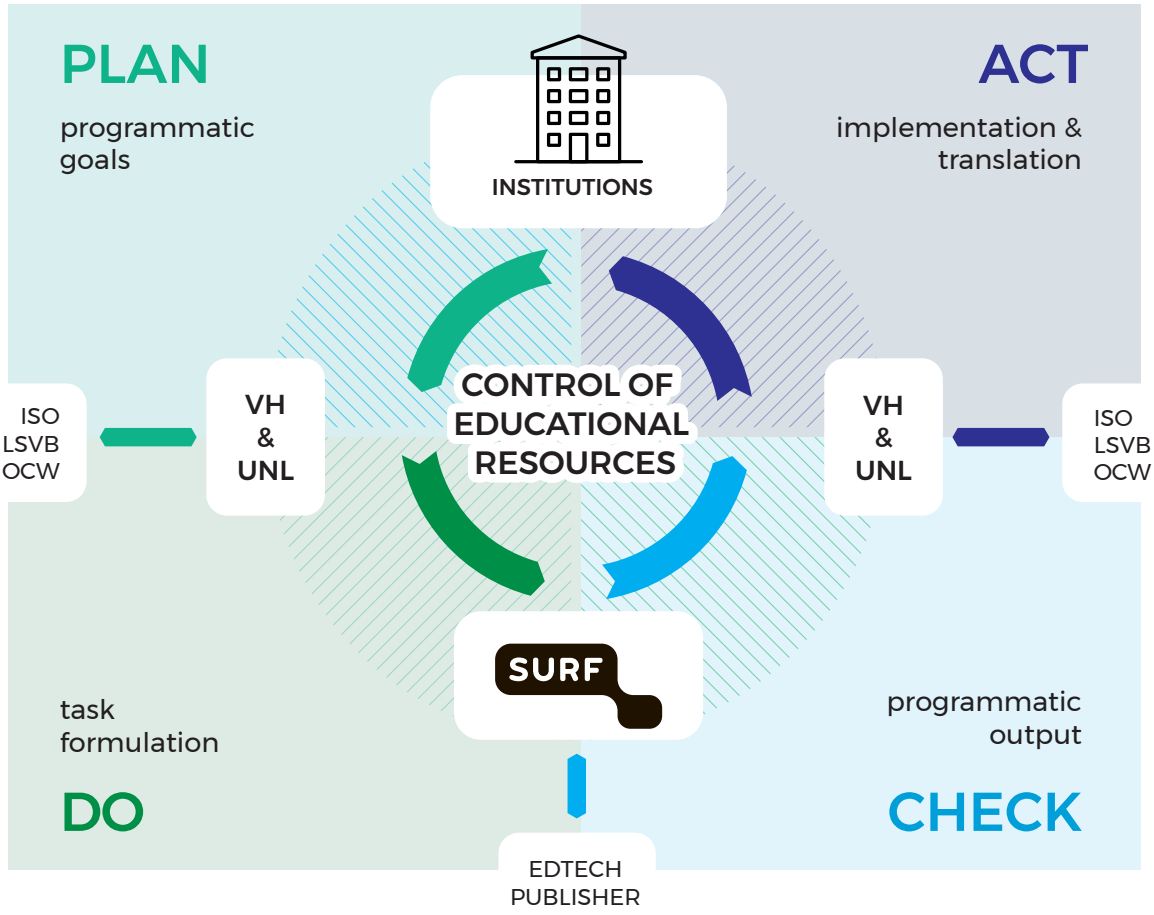


Figure 2. Vertical and horizontal coordination between the parties concerned.

Vertical and horizontal coordination

The model (Figure 2) shows that the implementation of the transformation into digital and open educational resources requires both horizontal coordination between institutions (and sub-sectors) as well as vertical coordination between the strategic decision-making bodies and those involved in their development (institutions, SURF). In addition to the substantive clarity provided by the statement and regular evaluations of the process within the framework of the UNL and the VH, organisational clarity is also required within the institutions and SURF,

[62] The *Open Method of Coordination (OMC)* is a decision-making procedure used in the European Union. The Open Method of Coordination (OMC) is used for matters which are left entirely to the discretion of the Member States but where it is desirable to coordinate policies. See also Higher Education Policy Convergence and the Bologna Process (Vögtle 2014), What is policy convergence and what causes it? (Bennett 1991) and The open method of co-ordination and the new governance patterns in the EU (2004).

and between the institutions and SURF. The general division of roles between the parties involved is the first step in this process.[63]

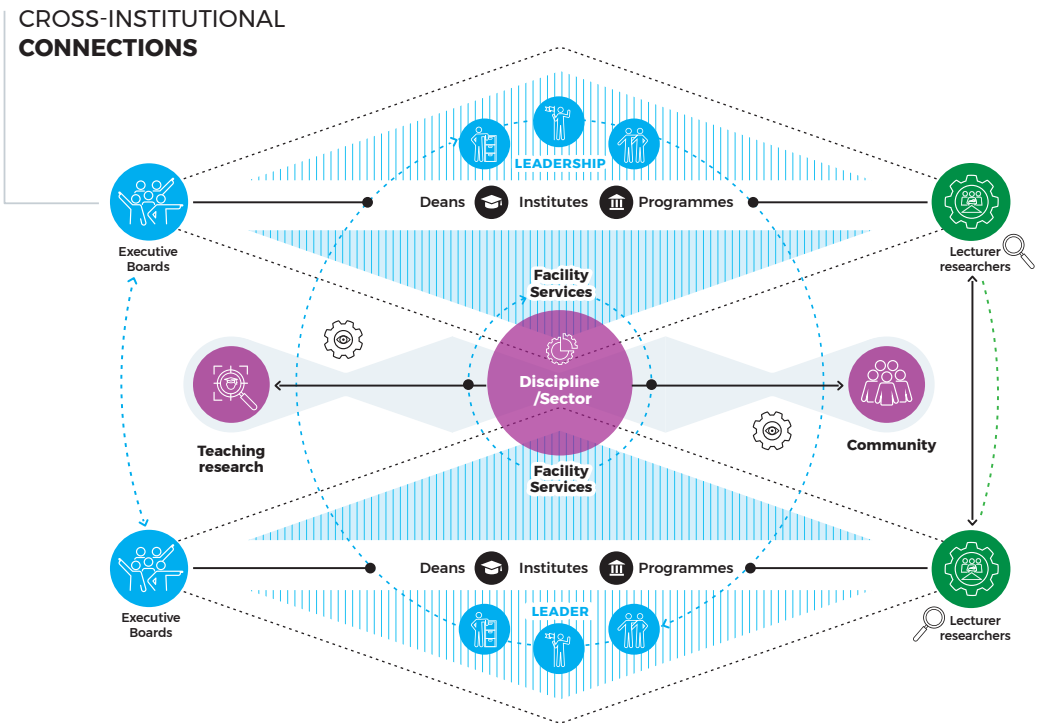


Figure 3. Schematic representation of two institutions within the collaborative partnership. Cross-institutional connections are established at various levels. Between directors, education supporters and lecturer-researchers.

Both staff within the institutions and SURF staff need clarity about the expectations of the various other parties within the partnership, especially with regard to their own management. This requires in terms of the monitoring of the strategic agenda of the institution, that arrangements are also agreed about who (for example the leadership, a digital transformation officer or an expert deployed on a programme) will inform or (if necessary) engage the board in what way. Clear vertical lines within the institutions contribute to unity in the formulation of the task and decisiveness in its execution (see Figure 3).

[63] With this paper, we are fully in line with SURF's new strategy paper, in which the relationship with the institutions is also discussed. This paper is based on the frameworks and principles for cooperation that were completely revised in 2021 (SURF, 2021).
In our paper, however, we make a distinction between the structural relationship (which is one of the reasons why the members' council was set up) and the programmatic and project relationships. The latter require thought to be given to the 'logical' connection between the institutions and SURF. Teaching projects will primarily have to fall under those responsible for teaching within the institutions and within the partnerships of knowledge institutions.

Final note

We are aware that, as with the Open Science programme, much remains to be learned about the long-term effects of digital and open educational resources. This applies to its impact on the learning behaviour of students, but also to the relationship between educational institutions and external parties, such as publishers. The diversity of the institutions has been emphasised in various places in this paper. This diversity is not a problem, but an excellent starting point for experimenting with each other from different positions and objectives and learning from experience.

By allowing clear decision-making (the statement and its incorporation into institutions' own strategies) and the professional space to do the work, the process of transformation can gradually take shape. At first glance, simple arrangements on internal and external coordination can help. These arrangements are:

- Integrate the objectives and arrangements of the *Declaration on the National Approach to Digital and Open Educational Resources* into the institution's strategy;
- Set clear priorities (steps) both within the institutions and jointly for the elaboration of the programme;
- In the context of the agreed priorities and for UNL and VH, formulate clear tasks to address the shared priorities. Formulate possible follow-up tasks for performance within the institution and by SURF;
- Assign points of contact per institution or sub-sector of higher education (depending on the subject):
- experts in the field of priority topics;
- a point of contact who is responsible in particular for coordinating with the board.
- Make arrangements within the institution and within SURF regarding coordination between the points of contact and the reporting to the Board.
- Ensure transparency about the state of affairs within each institution and produce regular reports to be discussed within the UNL and the VH. Where necessary, the reports lead to an adjustment of the growth model (Chapter 7).
- Reflect on the financing of the transformation towards digital and open educational resources. It is essential to consult with the Ministry of Education, Culture and Science on the financing of investments in at least the infrastructure required at SURF and within the institutions. Appendix B sets out an indication of the necessary investment.

7

Growth model

7 Growth model

When we talk about control of educational resources in this document, we realise that we are on a journey that consists of many small steps for lecturers, study programmes and the (cooperating) institutions. We envisage a growth model for this, the first steps of which are described in this document. Because of the dynamic context and the cultural, technological and organisational changes that are required, this is a ten to fifteen year process of change. And note: this represents a period of about 2 to 3 cohorts of students. We distinguish three phases[64]:

- Phase 1: initiation (2022-2024)
- Phase 2: implementation (2025-2030)
- Phase 3: consolidation (2031-2035)

In this chapter, we outline the possible steps within these three phases.

7.1 Initiation (2022-2024): Elaboration of the statement on the control of educational resources

Process level

STEP	Explanation	Party
Making digital and open educational resources part of the institution's strategy	The vision on the acquisition, management, (re)use and sharing of educational resources, in line with the educational vision. The educational resources serve the teaching goals.	All institutions
Appointment of educational resources specialist	Institutions ensure that the coordination of the development of joint control of educational resources is delegated appropriately and at an appropriate (strategic) level in their organisation. An educational resources specialist within each institution can provide added value.[65]	All institutions

[64] The activities described are in line with the Growth Fund application for *Digitaliseringsimpuls NL*. Several transformation hubs for digital educational resources are described below. The Growth Fund resources would undoubtedly be an essential impetus for the steps described in this approach.

[65] This specialist serves as a point of contact for directors and lecturers (or teams) to make targeted choices with regard to the educational resources. The specialist can advise on matters such as technological accessibility, procurement, copyright, metadata, data ownership, privacy and study safety.

Appointment of project team with management support[66]	Collective control of educational resources requires immense efforts. This requires management support. To steer the process that protects the autonomy of the institutions and achieves the shared goals with a sense of institutional interests. Our proposal is to invest the establishment of this with the UNL and VH, so that the joint management is ensured. For the daily execution, the steering group relies[67] op een klein projectteam.[68] on a small project team.68 Official support (points of contact) can be provided through the staff of the institutions.	VH, UNL and SURF

Content level

STEP	Explanation	Party
Developing a valuation system	So that lecturers who share, develop and reuse educational resources based on a vision on teaching are recognised.	Project team and institutions
Developing support infrastructure for 'educational innovation research'	This is necessary to guarantee support for lecturers and students for the creation, sharing and (re)use of educational resources. This is about recognising, valuing and facilitating (time and expertise) individual lecturers and supporting cross-institutional collaboration in professional communities.	Project team and institutions
Development of a project plan for the further development of edusources	The further development of edusources concerns both the technical aspects[69] and the emphasis on user needs of lecturers (and, secondly, students and educational support staff).	Project team
Evaluation study of the Open & Online incentive scheme	In recent years, many experiences have been gained with the promotion of open and online education. This scheme will expire in 2022.[70] The results of the evaluation will be used to develop a new structural incentive scheme.	Independent agency, managed by project team

[66] As of 1 October 2021, UNL has launched a steering committee for educational innovation, partly in order to be able to respond jointly to digital developments. Connection with this management steering committee is desirable.

[67] For example, four members: two directors of universities of applied sciences and two directors of research universities. Every two years, two new directors replace two of the members of the steering committee.

[68] A maximum of four people, seconded from SURF, a university, a university of applied sciences and an independent process supervisor.

[69] Such as the (further) development of a clearing house, central search system, authoring tools, playback environment, repository, integration into LMS, adoption of standards such as NL-LOM and LTI, affiliation with HOSA and MOSA, copyright and quality assurance systems.

[70] Projects starting in 2022 will be completed in 2024.

Large-scale needs and wishes assessment of lecturers and educational support staff	Without support and enthusiasm among lecturers and educational support staff, nothing will change. A needs and wishes assessment among these target groups should make it clear how and on what basis they can be involved in making, sharing and (re) using educational resources in an open and safe way. In particular, the perspective of the lecturer is crucial for the further development of edusources and the elaboration of the educational and innovation research. This study serves at the same time as an announcement of the development towards gaining control of educational resources.	Independent agency, managed by project team
Co-creation process with lecturers on edusources design and support programme[71]	The needs and wishes assessment is the starting point for a co-creation process with lecturers. Support among lecturers is needed to make a flying start.[72] Involving the lecturer as an end user in edusources, and the support programme contributes to the quality and expected use. Educational support staff and students also participate in this process.	Independent agency, managed by project team
In consultation with the Ministry of Education, Culture and Science establish financial preconditions	The institutions and the Ministry will have to invest together to obtain real control over educational resources. A new flow of funds is needed to enable structural educational development, as in research.	Ministry of Education, Culture and Science, UNL, VH and project team
Developing cooperation with educational institutions, SURF, publishers and developers of educational technology. Platform similar to Edu-K.	Public control does not mean that external parties, such as publishers and technology companies, are excluded. On the contrary. Educational institutions need these parties to help provide the best possible education. Through a collaborative relationship, institutions can jointly set the preconditions and agree arrangements with these private parties to shape the digital transformation.	Project team

[71] In line with the content advisory council launched by the Towards Digital (Open) Educational Resources zone. Representatives from education (professional lecturer) and support (subject officer) participate in the council for each subject area. The content advisory council advises on the collection formation and possible procurement of digital educational resources and is responsible for the sustainable management of collections of digital and open educational resources. The council will enable a quality assurance system to safeguard the quality of the open educational resources developed. Establishing the content advisory council will ensure that high-quality digital educational resources are properly distributed across all content sectors.

[72] The Facilitating Professional Development for Lecturers zone devoted a great deal of attention to the way in which lecturers can be involved in professional development and educational innovation. Specific organisation and lecturer characteristics play a crucial role in this. In the further development of edusources, it is advisable to build on these insights (Schilkamp & Spruit, 2020).

Coordination with Open Science	The National Open Science Programme paid little attention to open educational resources and open education. Yet the interconnectedness of both developments is evident. A new version of the National Open Science Programme will be developed, which will include links with open educational resources.	Project team
Further development of edusources	The creation, sharing and (re)use of educational resources requires an attractive, user-friendly and safe technical infrastructure for storing, finding and processing educational resources. Further development takes place after the earlier co-creative research and design phase.	SURF

7.2 Implementation (2025-2030)

STEP	Explanation	Party
Launch of edusources 2.0	A technical infrastructure (edusources) is available that makes it possible for a user to easily access, edit and use all digital educational resources in one place from the personal learning and working environment. This concerns both open and semi-open educational resources. The privacy of users is safeguarded, and the ownership of usage data lies with the educational institutions.	SURF
Start pilots with the development, sharing and (re)use of educational resources	Experiments with open educational resources have already been carried out in various ways. Based on these experiences, three larger, cross-institutional pilots will be launched. One pilot involving several institutions and using professional communities to develop a continuous learning pathway for the entire bachelor's programme of a large (in terms of numbers of students) field of study. For example, Law or Psychology. One pilot for, in contrast, a small field where there is currently a market failure in the field of educational resources. And thirdly, a pilot aimed specifically at the cross-institutional development of complex, and therefore costly, educational resources.	Project team, implementation by institutions and collaborative partnership
National campaign	Educational resources must become part of the lecturer's professional image. It is about strengthening the awareness that a teacher is an education maker, that educational resources offer opportunities for a brilliant career, and that co-creation of educational resources increases their quality. We will therefore launch another campaign, which also highlights the possibility of a scholarship for innovative educational research.	Project team with campaign agency

Small-scale annual open call for innovative educational research	Innovative educational research enjoys a high profile among lecturers and education supporters in higher education. An annual open call will then be set up, initially aimed at the innovators (2.5%) and early adopters (13.5%) within the institutions and professional communities.	Project team, execution by project team, execution by institutions
Presentation of the national arrangements matrix by the colla-borative partnership	There is a national arrangements matrix with suppliers of educational resources with regard to privacy, standards and usage data. At a minimum, it will be established that educational institutions have access to data relating to processes relating to access to and use of digital educational resources.	Collaborative partnership
Start joint procurement pilot	On the basis of the national arrangements matrix, one or two pilots will be launched in which the educational resources and associated licences will be purchased jointly or by individual educational institutions. Payment is made under the terms and conditions determined separately or jointly by the educational institutions.	SURF
Evaluation of pilots, open call and edusources	Through an evaluation, lessons will be learned from the pilots and the projects within the open call. This concerns both the quality of the resources and the functioning of the arrangements and edusources.	Independent agency, managed by project team
International conference on digital and open educational resources	A fresh pair of eyes provides proper scrutiny. For this reason, various partners from abroad (America, Norway, Germany, etc.) will be invited to a major conference aimed at knowledge sharing and inspira-tion. The conference serves as a benchmark for ambi-tions that have been distilled from the statement.	Project team, together with VH and UNL and colla-borative partnership

7.3 Consolidation (2031-2035)

Structural provision for development and use of digital open educational resources	Educational resources need to be continually adapted, remixed and improved. This requires structural facilitation.	Project team
Scaling up the pilots	Step-by-step development of educational resources for specific subject areas in accordance with open principles. This will eventually increase the accessibility of Dutch higher education.	Project team, execution by institutions
Institutionalising the open call for innovative education research	Part of the teaching profession is that you create, share and (re)use educational resources in professional communities.	Project team, execution by institutions

A Timeline: building on existing activities

We described obtaining control of educational resources as a journey of many steps. Fortunately, a number of these steps have already been taken in recent years. Our proposal is in line with the activities undertaken at the national level and by the institutions. The timeline below gives an impression of the knowledge, tools and experiences that are available and on which we can build. Various further steps are also planned for the near future.

2015–2024: Open and Online Education Incentive Scheme
- First round (2015-2017): 34 projects
- Second round (2018-2024): 17 projects open to tender and 13 in application

2017–2018: Flagship projects for open educational resources
- Higher professional education programme in Nursing
- Mathematics (Open Up Math)

2018–2022: Knowledge Agenda for Open Educational Resources

De kennisagenda van SURF heeft onder andere geleid tot:
1. Various step-by-step plans, such as starting with open educational resources
2. Webinars and courses, such as facilitating the exchange of OER in a professional community
3. Articles on projects benefiting from the incentive scheme and topics such as open pedagogy.

2019–2022: Acceleration Plan for Education Innovation with ICT, Towards Digital (Open) Educational Resources zone

Many activities have been undertaken and products developed by the zone.
These include various tools and publications.

Tools
1. Step-by-step plan: Create your open textbook!
2. Tool: Wheel of Insight tool!
3. Infographic and report: inventory of open textbooks
4. Field lab: Open educational resources

Publications
1. Blog: Six considerations when using YouTube as a video platform (in Dutch)
2. Article: Reusing educational resources
3. Report: Digital educational resources in higher education
4. Blog: Video as a digital educational resource: 'Copy it right!'
5. Blog: Open Education Week: Activities in the Netherlands
6. News: Wrap-up: these were the Open Education Week activities
7. Report: OER Workshop Evaluation Report
8. Report: inventory of open text books
9. Report: study of requirement of professional communities on national platform of educational resources
10. Vision document: Educational resources in 2025

2021: launch of edusources

2022: launch of Accelerating with edusources

2022: programme 2022: launch of Digitaliseringsimpuls NL

B Cost indication

Our advice is to build on existing activities by developing a growth model for the national approach to digital and open educational resources. In this appendix, we present a rough cost indication for four crucial elements of the plan. This is a rough indication because, for good reasons, our proposal leaves room for a great deal of differentiation. In addition, our proposal is takes account of the fact that the road to realisation still contains many uncertainties. The estimate is based on insights from previous education resource projects (such as the flagship projects) and on the budget prepared for the current Growth Fund application.

B.1 National coordination and organisation of educational resources

Firstly, the structural costs required to create preconditions at the national and institutional levels to enable control of educational resources. In the situation we have proposed, the umbrella organisations, together with SURF, play a coordinating and facilitating role in the organisation surrounding digital and open educational resources. Progress will be made from these roles:

1. IIn relation to commercial providers of educational resources;
2. In the (further) development of standards and arrangements in the field of privacy, usage data, integration, data interoperability and metadata;
3. For knowledge sharing, networking, professional development and support of directors, policymakers, lecturers and supporters who deal with educational resources within and between the institutions.

Annual costs: € 350,000

B.2 Research: needs, wishes and actions

Control of educational resources in this area requires an increase in awareness, involvement and ownership among policymakers, supporters, lecturers and students. By conducting research into the needs and wishes of these target groups, it becomes clear how and in what way they can be involved in the issue of educational resources. In order to shape control in daily practice, further development of the supporting infrastructure must also be in line with these target groups.

Through an active positioning of respondents as co-owners and designers of the transition, relevant information can be retrieved from a study of this kind and potential first followers can also be reached and activated. Participation in an (action) research like this increases the awareness, knowledge and involvement of the respondents in the theme.

One-off costs: € 200,000

B.3 Technical development

The sharing, searching and finding of digital and open educational resources requires a basic technical facility for use in the Netherlands. Existing SURF systems, such as the CopyRIGHT Tool, NL-Bron, edurep and – in particular – edusources, will therefore be further developed and new functionalities added.
In this further development, special attention is paid to:
- The ease of use of the digital environment for lecturers (and other end users);
- The quality (and quality assurance) and editability of educational resources; - The accessibility and interoperability of the underlying technology.

The latter means that it is possible for various parties to connect their own facilities for the development, storage, access and playback of digital and open educational resources to the national infrastructure.

One-off costs: between € 1,000,000 and € 1,500,000.

B.4 Development of educational resources and communities

The costs for the development of educational resources within a professional community depend on various factors, such as:
- Type and complexity of the resource (from article to MOOC, from textbook to virtual reality simulation);
- Scope of the ambitions (from individual educational resources within a degree programme to an end-to-end learning pathway within an entire field of study);
- The number of institutions, faculties, study programmes, lecturers, students and support staff involved;
- Knowledge and skill level of the parties involved with regard to educational resources.

On the basis of experiences from the Open and Online Education incentive scheme and the flagship projects, an impression can then be given of the aspects that deserve attention for creating sustainable, sharing and reusing educational resources:
1) Activating a professional community;
2) Appointing a motivated project leader;
3) Composing a core team for the development of educational resources;
4) Deciding on the goals and target group;
5) Professional development of lecturers and support services;
6) Jointly developing a professional vocabulary and quality model;
7) Collecting, curating and sharing existing educational resources;
8) Identifying gaps in the collection;
9) Developing and sharing new resources;
10) Setting up technical infrastructure (combination of authoring tools, community platform, repository, integration of learning environment);
11) Managing the professional vocabulary, quality model, infrastructure (outside the scope of the project).

The costs associated with the development of new educational resources and the communities within which they are permanently shared and reused differ from situation to situation (discipline, sector, etc.). It is always made to measure.

Here are five examples of this, with a reasonable distribution across disciplines:

Programme	Sharestats
Field of study	Statistics
Starting year	2020
Institutions involved	UvA, VU, UU, EUR
Faculties involved	Psychology and Educational Sciences, Social Sciences, Behavioural and Movement Sciences, Social Sciences, Psychology, Pedagogy.
Number and type of educational resources	Set of 6,500 statistics assignments.
Number of lecturers involved	All lecturers in methods and statistics for Social Sciences programmes (including Psychology and Sociology) at UvA, VU, UU and EUR.
Number of students involved	10,000 annually.
Total cost	**€ 350,000**

Programme	University of Applied Sciences degree programme in Nursing
Field of study	Nursing
Starting year	2011
Institutions involved	Fontys University of Applied Sciences, HAN University of Applied Sciences, Rotterdam University of Applied Sciences, Saxion University of Applied Sciences, Zuyd University of Applied Sciences, Utrecht University of Applied Sciences, Amsterdam University of Applied Sciences, Avans University of Applied Sciences, Leiden University of Applied Sciences, Windesheim University of Applied Sciences, Inholland University of Applied Sciences.
Faculties involved	All faculties offering nursing programmes.
Number and type of educational resources	60 new educational resources developed; 1,500 educational resources shared.
Number of lecturers involved	500
Number of students involved	not available
Total cost	**€400,000**

Programme	Ecotoxicologie
Field of study	Ecotoxicology and environmental toxicology
Starting year	2017
Institutions involved	VU Amsterdam in collaboration with the University of Amsterdam (UvA), Wageningen University (WU), Leiden University (UL), Radboud University (RU), Open University (OU), Van Hall/Larenstein University of Applied Sciences
Faculties involved	VU Faculty of Earth and Life Sciences Faculty of Sciences of Radboud University, Master of Environmental Sciences of Wageningen University.
Number and type of educational resources	Open access e-studybook of six chapters with over 125 modules.
Number of lecturers involved	12 scientists/lecturers.
Number of students involved	365
Total cost	**€127,000**

Programme	Open online course in business analytics
Field of study	Business and public administration
Starting year	2017
Institutions involved	Saxion
Faculties involved	Faculty of Economics and Management (FEM)
Number and type of educational resources	An open and online course in which students and financial professionals are trained to analyse and interpret data.
Number of lecturers involved	25
Number of students involved	150
Total cost	**€102,000**

Programme	Perfect Pronunciation
Field of study	English
Starting year	2017
Institutions involved	VU Amsterdam
Faculties involved	Faculty of Humanities
Number and type of educational resources	An online platform and MOOC where students can practice their English pronunciation and receive feedback.
Number of lecturers involved	30
Number of students involved	190 students per year (VU) and 2,000 online students per year.
Total cost	**€43,950**

C Overview of interviewees

Since March 2021, we have conducted a great many interviews. The following is an overview of the interviewees we have spoken to individually and collectively.

Collectives and communities consulted	Organisation
Steering Group on Education & Research	Universities of the Netherlands
Rectors' conference	Universities of the Netherlands
Management Committee for Education	Association of Universities of Applied Sciences
Board meeting	Association of Universities of Applied Sciences
Steering Committee	Acceleration Plan
Leaders of the Accelerating Together team	Acceleration Plan
Supervisory Committee for Digital Open educational resources	Acceleration Plan
Towards Digital (Open) Educational Resources zone	Acceleration Plan
Facilitating Professional Development for Lecturers zone	Acceleration Plan
Evidence-informed Educational Innovation with ICT zone	Acceleration Plan
Making Education More Flexible zone	Acceleration Plan
Working sessions with students	Dutch National Student Association (ISO) & National Student Union (LSVb)
Working sessions with lecturers	ComeniusNetwork & project leaders of the Open and Online Education incentive scheme
National Librarians' Conference	Various higher education institutions
National coordination meeting with directors of student affairs (LAST)	Various higher education institutions
Working Group on Open Science and Open Access	Universities of the Netherlands and the Association of Universities of Applied Sciences

Name	Institution	Position
Theo Bastiaens	Open University	Rector Magnificus
Mieke van den Berg	Inholland	Member of the Executive Board
Jan Bogerd	Utrecht University of Applied Sciences	Chair of the Executive Board
John Dane	HZ University of Applied Sciences	Chair of the Executive Board
Inge Grimm	Windesheim	Vice-Chair of the Executive Board
Karen Maex	University of Amsterdam	Rector Magnificus
Elisabeth Minneman	The Hague University of Applied Sciences	Chair of the Executive Board

Name	Institution	Position
Arthur Mol	Wageningen University & Research	Rector Magnificus
Anka Mulder	Saxion University of Applied Sciences	Chair of the Executive Board
Hans Nederlof	Fontys Universities of Applied Sciences	Member of the Executive Board
Jet de Ranitz	SURF	Chair of the Board of Directors
Hanneke Reuling	Amsterdam University of Applied Sciences	Vice-Chair of the Executive Board
Daniël Wigboldus	Radboud University	Chair of the Executive Board
Sarah Wilton	Avans University of Applied Sciences	Member of the Executive Board
Reinout van Brakel	Universities of the Netherlands	Domain Leader for Accountability
Anne-Roos Renkema	Universities of the Netherlands	Policy advisor for educational innovation
Josephine Verstappen	Universities of the Netherlands	Policy advisor for education
Elsbeth Vonkeman	Association of Universities of Applied Sciences	Programme Manager
Juriaan van Kan	Ministry of Education, Culture and Science	Senior policy officer for higher education
Ahmed Failly	Ministry of Education, Culture and Science	Policy officer for higher education and student finance
Nol van Gerven	National Student Union (LSVb)	Committee member
Eline Terpstra	National Student Union (LSVb)	Committee member
Thomas van der Meer	Dutch National Student Association (ISO)	Committee member
Aukje de Ruijter	Dutch National Student Association (ISO)	Secretary
Thijs van Aken	Leiden University	International Relations student
Sterre Hoek van Dijke	Wageningen University & Research	Student of Landscape Architecture and Spatial Planning
Evangélica Fotiadis	Fontys Universities of Applied Sciences	Student Trend Research & Concept Creation
Remi ter Haar	Utrecht University	Student of Languages and Law
Nienke Landman	Utrecht University	Student of Economic Policy
Kim Schildkamp	University of Twente	Professor of 'Data-informed decision making for learning and development'
Robert Schuwer	Fontys Universities of Applied Sciences	Lector of Open Educational Resources and leader of the Towards Digital (Open) Educational Resources zone
Monique Volman	University of Amsterdam	Professor of Educational Sciences
Aline Bouwes	Utrecht University of Applied Sciences	Lecturer in Nursing

Name	Institution	Position
Timon Idema	TU Delft	Associate Professor of Theoretical Biophysics and programme director of the master's programme in Nanobiology
Frank Léoné	Radboud University	Assistant Professor of Neuroeducation
Marc van Mil	UMC Utrecht	Associate Professor, educational innovator and educational researcher
Marleen de Moor	VU Amsterdam	Assistant Professor of Methods in Child and Family Studies
Gwen Noteborn	Maastricht University	Assistant Professor in Private Law
Constant Swinkels	Radboud University	PhD candidate and lecturer in Biodiversity
Lodewijk Witteveen	Saxion University of Applied Sciences	Lecturer in Smart Industry
Hans Beldhuis	University of Groningen	Project leader Educational Innovation and Research
Nico Boot	Leiden University of Applied Sciences	Digital transformation consultant and leader of the Evidence-Informed Educational Innovation with ICT zone
Sandra Brocx	Avans University of Applied Sciences	Policy Adviser at the Learning and Innovation Centre
Bram Enning	Leiden University of Applied Sciences	Policy adviser on Institutional Research and leader of the Secure and Reliable Use of Education Data zone
Gert Hardeveld	Utrecht University of Applied Sciences	Team member Open ICT
Paul den Hertog	Amsterdam University of Applied Sciences	Innovation adviser for education technology, leader of the Making Education More Flexible zone
Marian Kat de Jong	Avans University of Applied Sciences, Learning and Innovation Centre	Education Team Coordinator
Wouter Kleijheeg	Erasmus University	Project Manager
Jacqueline Klinkenberg	Maastricht University	Cluster Librarian for the Faculties of Psychology, Law and Open University
Simone Kortekaas	Wageningen University & Research	Library - Head of Research & Education Support
Gaby Lutgens	Maastricht University	Project leader Open Educational Resources
Sylvia Moes	VU Amsterdam	Innovation Manager for Education of the University Library and chair of the Libraries, Open and Online Education Working Group
Monic Schijvenaars	Radboud University	Director Radboud Centre for Social Sciences
Ronald Spruit	Avans University of Applied Sciences	Adviser to Learning & Innovation, head of the Facilitating Professional Development for Lecturers zone
Suzanne Unck	Utrecht University of Applied Sciences	Educational innovation project leader
Marja Verstelle	Leiden University	Planner with the strategic alliance of Leiden-Delft-Erasmus universities
Wilma van Wezenbeek	VU Amsterdam	Director of Student Affairs and Education
Hilde van Wijngaarden	VU Amsterdam	Director of the University Library

Name	Institution	Position
Ron Augustus	SURF	Chief Innovation Officer
Christien Bok	SURF	Innovation Manager for Education
Walter van Dijk	SURF	Manager of Strategy & Relationship Management
John Doove	SURF	Open Science Programme Manager
Michael Go	SURF	Programme Manager for Making Education more Flexible
Johanna de Groot	SURF	Programme Manager Acceleration Plan, Team Head Strategic Relationship Management.
Jurre Laven	SURF	Procurement and Contracting Manager
Lieke Rensink	SURF	Project leader of Open Educational Resources and liaison for Towards Digital (Open) Educational Resources
Yvonne Rouwhorst	SURF	Consultant
Pim Slot	SURF	Senior Contract Manager
Martine Teirlinck	SURF	Product Manager
Kirsten Veelo	SURF	Project leader of Open Educational Resources
Jenny de werk	SURF	Project Manager
Inez Westerman	SURF	Team Head of Content Procurement & Contracting
Ilja Boor	ComeniusNetwork	Committee member
Marcel Brosens	Mannen met plannen	Communications Strategist
Marc Dietzenbacher	VISTA College	Education and Technology Policy Advisor
Manon Geven	MBO Digitaal1	Programme Manager Doorpakken op digitalisering
Hans Hoekstra	Marktwijs Consultancy	Commercial Adviser
Ben Janssen	OpenEd Consult	Open Education Adviser/Researcher
Stef Smits	Morgens	Senior Consultant and Programme Manager of the Towards Digital (Open) Educational Resources zone
Maaike Stam	MBO Digitaal	Policy Adviser
Arjan van Venrooij	Verdonck, Klooster & Associates	Management Consultant
Ton Bakker	Bohn Stafleu van Loghum	Publishing Manager
Pim Bellinga	Grasple	Founder
Michel van den Burg	Uitgeverij Coutinho	Digital Publishing Coordinator
Marieke Cambeen	Bohn Stafleu van Loghum	Managing Director
Nynke Coutinho	Uitgeverij Coutinho	Publisher & Director
Paul Emons	Noordhoff Uitgevers	General Manager
Michiel van der Graaf	Edumundo	Senior Publisher
Pim Stuurman	Grasple	Business Development Consultant
Menno Thijssen	Edumundo	CEO

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