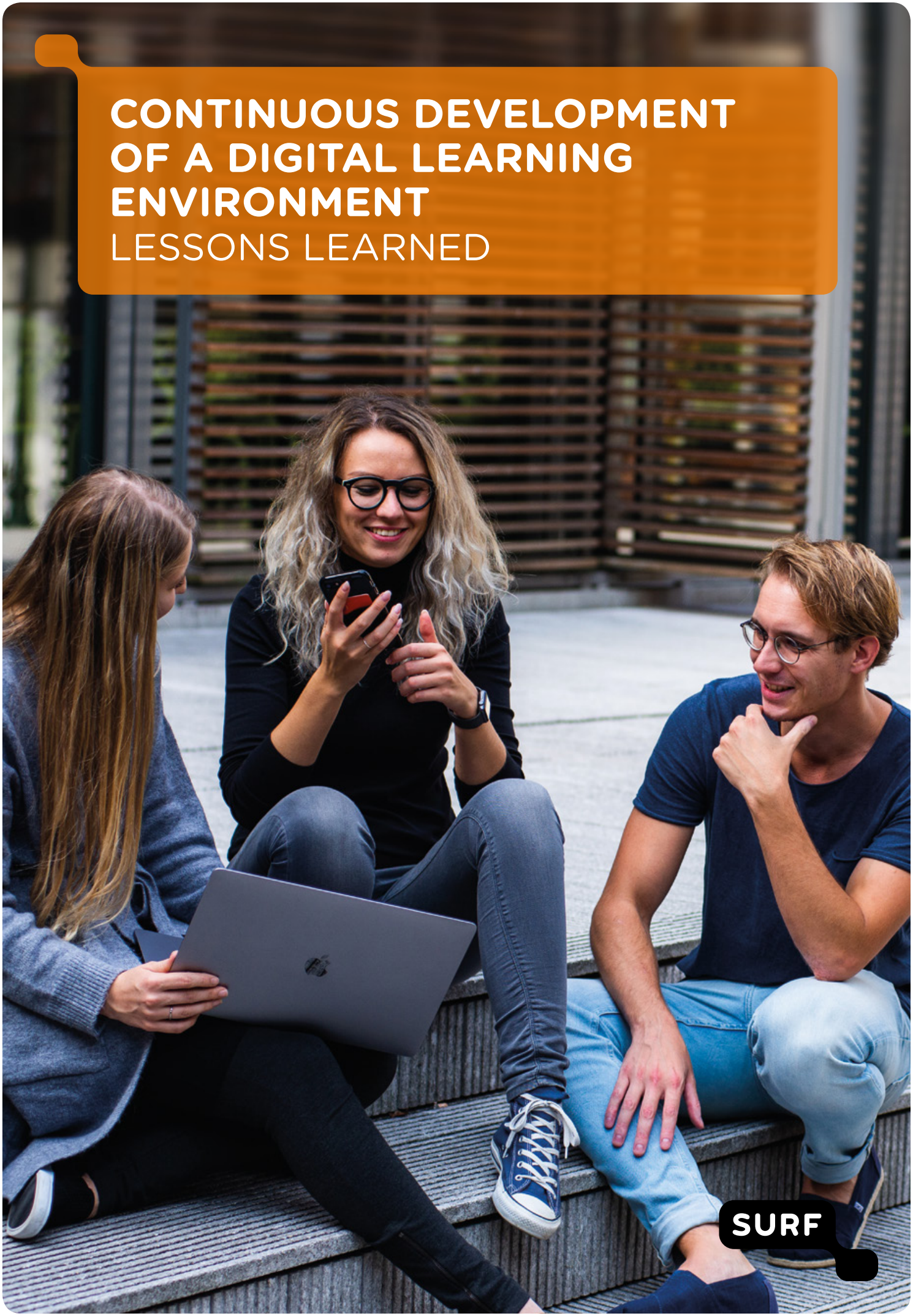
CONTINUOUS DEVELOPMENT OF A DIGITAL LEARNING ENVIRONMENT

LESSONS LEARNED



SURF

PREFACE

A digital learning environment is never finished. That does not fit with an educational environment, as it should constantly be adapting to educational developments and insights, technology, and new questions from users.

In recent years, SURF has continuously worked with Dutch higher education institutions to develop knowledge about various issues related to the digital learning environment, at technical, information and management levels, as well as at organisational and didactic levels. Among other things, this has led to a demo of the modular learning environment, many knowledge exchange activities, and an extensive knowledge base on digital learning environments.

In 2018, SURF organised a learning community about digital learning environments. The aim was to broadly disseminate the knowledge gained about all aspects of digital learning environments and enable institutions to get started with various topics. Participants in the learning community wrote a policy document, vision, or a plan of action. These plans enabled participants to take next steps within their own institution to further development of the learning environment. The substantive programme provided input for these documents and participants were able to reflect on this during meetings or online at a later stage. The final products were presented during the last meeting. This yielded many interesting insights that we believe have added value and can inspire others. This themed publication is made to share these insights with everyone involved in furthering development of digital learning environments.

We would like to thank all participants of the learning community. We also would like to thanks all those involved that have contributed to these developments, for their insights and their contribution to this themed publication.

We wish all readers inspiration in working on the continuous development of their own digital learning environment!

Marieke de Wit, Nico Juist, and Lianne van Elk

INTRODUCTION

THE DEVELOPMENT OF A DIGITAL LEARNING ENVIRONMENT AS A PERPETUUM MOBILE

Digital learning environments of educational institutions have developed into complex environments that are made up of different systems and applications. Through a tender, many institutions have recently acquired a new learning management system (LMS). At the same time, specific didactic tools that are not a standard part of the LMS, have been taken into use. This includes tools such as peer feedback, videos, or digital examination. Both the LMS, as well as the tools linked to the LMS, use information from source systems. The user expects the entire learning environment to be presented as one, where all information is up-to-date, and where it is clear what tools can be used for what purpose.

Institutions strive to meet that wish. However, it will be necessary to revise or add certain parts of digital learning environments regularly. This requires organisation, management, and governance. With new applications, the acquisition, technical implementation, maintenance, and efficient use therefore remain a recurring point of attention.

We distinguish four steps to get to a well-designed digital learning environment (DLE).

1. **Vision formulation & support**
   Many institutions have been working on a vision for their digital learning environment in recent years. Often, this resulted from the need to formulate wishes and requirements for a tender for a new LMS. However, several institutions in The Netherlands looked further than those requirements and focused on a vision for the future of their digital learning environment. The coherence of the various components of learning environment, the involvement of stakeholders, and the investment of ownership are important aspects in this phase.

2. **Purchase or development**
   The various components of a digital learning environment have to be purchased or developed. Organising the procurement or development of these components has important phases. This includes market exploration, defining desired services and functionality, tendering or developing, and monitoring all these processes.

   The purchase of an LMS requires a European tender for most institutions. However, this may also apply to other educational applications and tools an institution wants to purchase. Purchasing, implementing, phasing out, and archiving an LMS are recurring activities.

3. **Technical implementation**
   Technical implementation is about fitting new tools to the digital landscape of an institution. It is about integrating and exchanging data, and sometimes even about migrating from the old to a new environment or application.

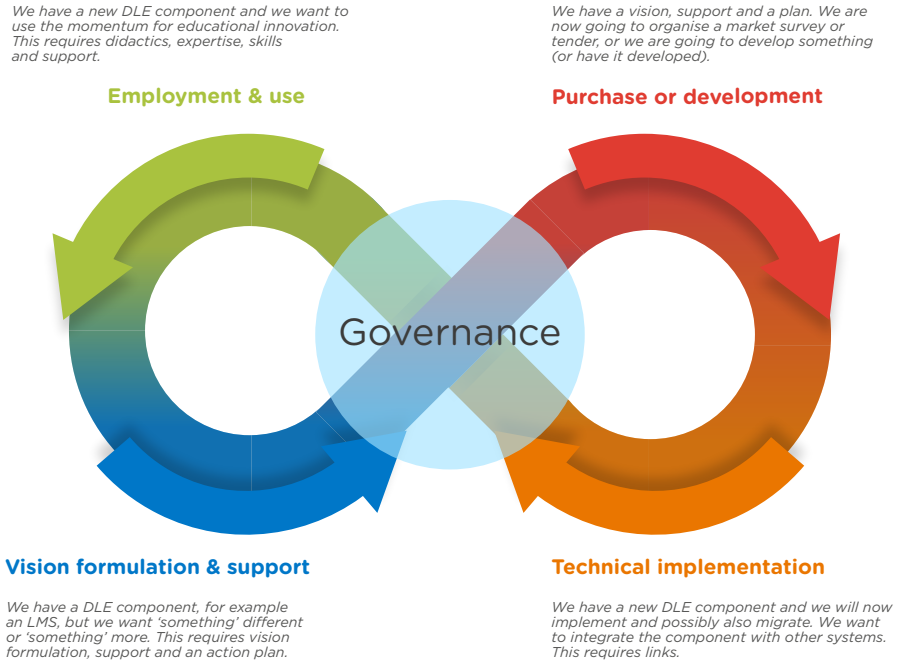
   Students and teachers may expect institutions to succeed in making a consistent unity of the digital learning environment and tools, where users can find their way and, for example, do not have to enter data that is already known within the institution.

4. Employment & use

How do you ensure digital environments are actually used? How do you ensure you properly support the didactic process with the right tool or application? Once everything has been purchased, is technically operational, and where necessary, is integrated, successful implementation of a digital learning environment remains a challenge. This also applies to the support of daily use of these environments. How do you organise support within a complex landscape of applications? How do you ensure that users can really manage using the environment? Where do you archive content? What forms of skills training are successful? And what does it mean when a landscape as a whole is also dynamic?

In the dynamics described above, we recognise a recurring process of vision formulation, realisation, and implementation. We named it a 'perpetuum mobile': one step sets the next step in motion.

THE DIGITAL LEARNING ENVIRONMENT PERPETUUM MOBILE



Perpetuum mobile

A 'perpetuum mobile' is a device that continues to move forever when it is set in motion. With traditional machines, this is practically impossible, as friction, among other things, means energy is always lost causing the device to eventually stop. This, of course, also applies to digital learning environments. It takes a lot of energy to keep digital learning environments up-to-date, to continue to develop these environments, and to keep the process moving.

Governance

This continuous process requires good management. It is the fifth factor that acts as the central axis around which the other four aspects can move. We call it governance.

Organising the management of continuous development is an important challenge for many institutions. Digital tools are increasingly used in education, ICT developments in the professional and research areas are moving, and the expectations and needs of students and teachers on tools and their usability continue to grow.

Previously, the purchase of a DLE – or LMS – was a one-off, project-driven event. After implementation, the results were taken over by the organisation. Nowadays, implementing a digital learning environment is often done through an agile approach to cater to new wishes. Applications that are purchased as SaaS (Software as a Service) or as a cloud service are also constantly evolving.

How do you ensure this dynamic is guaranteed? How do you ensure the development of the learning environment remains on the agenda? How do you involve all stakeholders? Who determines the priority of projects?

In short: how do you organise the governance of these continuous developments?

LESSONS LEARNED

HOW DO YOU CONTROL THE CONTINUOUS DEVELOPMENT OF A DIGITAL LEARNING ENVIRONMENT?

It is necessary to pay constant attention to the further development of a digital learning environment. This continuous process requires governance. Who determines what happens, at what speed, and why? In this chapter we describe the lessons learned from five Dutch higher education institutions.

1. **Organise clear governance of continuous development**

   Continuous development of a digital learning environment also means continuous changes for teachers, students, and functional managers. For example, necessary changes are required as applications are revised or added. Users cannot just know how to use these applications, they also need to know what to use it for. It is important guidelines on these challenges are clear for all the people involved.

   Applications are evolving too. Most educational applications, including LSMs, are now offered as a SaaS solution. This means the supplier takes care of the hosting and further development of the application. As an institution, you therefore have less control over updates and renewals in the application. An institution has to be able to deal with that dynamic.

   To ensure all involved parties remain motivated to adopt changes, it is important to keep them well-informed and to manage expectations: a future learning environment will not be perfect for all users. An agile approach can be helpful when dealing with changes in a flexible way. In an agile approach, a multidisciplinary team is responsible for furthering development of a digital learning environment. By working with product owners (or service owners) instead of project leaders, you implicitly make clear the development of a digital learning environment is not something temporary, but a long-term responsibility.

   Of course, there are other instruments that ensure continuous development stays on the agenda. Consider a dedicated support team and developing strong connections with faculty representatives.

2. **Education is leading**

   A digital learning environment has to support the institution's vision on education. The development of a digital learning environment always has to be in support of education, and changes ultimately always have to benefit teaching activities. Be mindful of this. This can be done, for example, by involving education representatives (students, teachers, managers, education directors) at the start of the development processes. They have to be in charge of determining priorities and whether or not projects get the go-ahead.

   DLE boards can be established to steer development of digital learning environments. This should mainly be attended by educational representatives. This can be teachers and students, but also representatives from central IT services. By working with a support team of students who know what works and who are at the heart of education, it is possible to gain insights into the problems and questions stemming from education.

This can be further coordinated with teachers and faculty representatives. Another option is to work with personas and user stories to provide insights into what processes can be improved.

3. Connect with the culture of the organisation

The existing organisation should always be the starting point when organising the management of the further development of a digital learning environment. The culture of an organisation is important here. For example, are decisions usually made top-down or bottom-up? To what extent do processes take place in a formal way and to what extent is there an informal tradition in choices about development of digital learning environments? Is it a network organisation? Or is the organisation organised more hierarchically? Is a digital learning environment organised around one application or are you starting from scratch?

For many institutions, the replacement of an LMS is a starting point for setting up the management organisation for a digital learning environment. The design of such challenges usually also ties in with the culture of an organisation. However, it can work well to use the new impulse a project gives, to choose an innovative working method. This could then also act as an example for other projects.

4. Clear terminology and scope of programmes and projects

Make clear what you mean by certain terms. What is considered a digital learning environment? Is a digital learning environment the composite of applications, as one? Or do you use the term for specific software with learning management functionalities (LMS), such as Blackboard, Canvas, Brightspace, or Itslearning? And if you opt for the broad definition: which applications belong to the digital learning environment exactly? Does it include scheduling systems, a portal, and a planning system? Does it only concern applications used between students and teachers (digital examination tools, feedback tools, etc.)?

In addition, ensure clarity about the scope of the programme or project you are working on. This also applies to the scope of the responsibilities of a steering group or a multidisciplinary team. What tasks and responsibilities are included and which ones are not? Is it about the development of the LMS or about the all educational applications? Is it about information policy, support, and professionalisation? And how far do these responsibilities go?

Clarity about the scope also means you are able to say ‘no’ to certain requests or wishes. If there are many requests and wishes that cannot be addressed at the same time, a roadmap can be useful. With a roadmap, requests and wishes can be prioritised and expectations about the fulfilment of these requests can be managed.

5. Standardise the change process

To organise the continuous change of the learning environment as well as possible, it can help to establish a process for making changes. This includes agreements about desired functionalities, monitoring and replacement of applications, and financing (new) applications. This also includes the conditions pilots must meet in order to be able to scale up to the requirements of the existing organisation. For each (new) application, agreements about change management are required, so that user requirements can be responded to in an optimal manner. For all new applications it is important to look at standards and possibilities for integration. Moreover, it is important to look at implicit and legal requirements, for example from GDPR. Reliability of, and good cooperation with, suppliers is important here.

As replacing components of a digital learning environment are incidental costs, it can be possible to have a replacement budget (in addition to a licensing and support budget) as a structural part of financing a digital learning environment. The approach to these costs is determined by what an institution considers important. For example, the appreciation of the involvement of all employees, the need to place ownership as low as possible in the organisation, or to need to create an environment where making mistakes and learning from them is accepted. This requires an approach based on trust rather than control. From experience, we know that it is important to reward people who make an extra effort for their work with time or money. This applies, for example, to teachers who have a key user function, or students, who participate in the DLE board. Another example is the involvement of managers early on in the process, so that support staff can take note of their questions, and can prepare appropriately to service management.

6. Organise professionalisation and support

Professionalisation for teachers is especially effective when it comes to the current demand from an education team, for example about the use of digital tools for educational innovation. Also, support can be most effective when it is available at the right time - when there is a question. Organise support and professionalisation as close to the teachers as possible. Support and facilitate pioneers with time, money, and fast support. The dedicated support team is preferably multidisciplinary and close to the end user. The TPACK model can be used to assess team competencies and help articulate support questions.

PUBLICATION DETAILS

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