Graham Burns & Anne Harmoinen (Eds.)

Digital transformation of learning environments

From the classroom to student-centred online learning

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Digital transformation of learning environments

FROM THE CLASSROOM TO STUDENT-CENTRED ONLINE LEARNING

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DIGITAL TRANSFORMATION OF LEARNING ENVIRONMENTS

From the classroom to student–centred online learning

Graham Burns & Anne Harmoinen (Eds.)

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Ms Anne Harmoinen, MA, is working as a Specialist in Learning Spaces and Operational Environments at Centria University of Applied Sciences. She has worked as a Principal Lecturer and a Professional Teacher Educator. While working as a Principal Lecturer she was also managing international University - research projects in the USA and Japan. Her specialties are adult learning environments, change process management and future oriented learning environment research. In MOPEDE her expertise is institutionalizing online learning in education.

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Ms Ilona Laakkonen, MA, currently works as an RDI expert in emerging technologies and learning in the Jamk University of Applied Sciences, School of Professional Teacher Education, Finland. She has 15 years of experience in the convergence of education and technologies, as a researcher, developer, e-learning designer, and trainer. She combines research-based knowledge and practical expertise to create innovative and learner-centred pedagogical practice in digital environments and to support change in education. In the MOPEDE project she focused on capacity building in blended learning and sustainable pedagogical change.

Dr Yishak Degefu has a PhD in Curriculum Studies from the University of South Africa and was a proponent of the blended approach for TVTI before the onset of the Covid-19 pandemic. He was the local project coordinator of the TECIP project, the predecessor of MOPEDE project, which was implemented by the FTVETI, the Addis Ababa University from the Ethiopian side and Jamk University of Applied Sciences and University of Jyväskylä from the Finnish side. He is currently working as assistant professor and faculty dean at the FDRE Technical and Vocational Training Institute. In the MOPEDE project he was a member of the project board and the Operational Committee. He has rich experience in project planning and implementation besides his role of educator.

Dr Pekka Makkonen has 35 years of experience in the field of ICT and education. He is currently working as a Principal Lecturer in Centria University of Applied Sciences in Finland. His experience covers strategic management, organizational change management, ICT project management, system development, programming, databases, office applications, e-learning tools and development, ICT strategies, ICT services management, and cloud services. In addition to teaching in Finland for different institutions and many European countries under the EU's Erasmus+ programme, he has worked in different countries in Asia and Africa under different funding such ADB, KfW, and WB.

Mr Naol Anbesie has MA in Leadership and Management, a BSc in Computer Science as well as a BSc in Electrical and Electronics Technology. He has 8 years' experience in the field of ICT, especially involving system administration and networks. Additionally, he has been working as an ICT specialist and blended learning digital technical trainer in the MOPEDE project, for capacity building of the E-learning team and ToT team to upskill their digital skills. He is currently working as a content development expert and senior system administrator at the FDRE Technical and Vocational Training Institute in Ethiopia.

ABSTRACT

Graham Burns & Anne Harmoinen (Eds.)
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From the classroom to student-centred online learning
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The MOPEDE project ran from 1 September 2020 to 31 August 2024 involving a consortium consisting of Jamk University of Applied Sciences, Centria University of Applied Sciences, both from Finland, and the Technical and Vocational Training Institute from Ethiopia. The specific outcome of this collaboration was to institutionalise e-learning throughout TVTI and its 15 satellite colleges, by integrating online learning across the curriculum, thereby modernising teaching and learning methods.

This guidebook is divided into four thematic chapters in which each of the interwoven processes are exemplified. In the first chapter, *Futureproofing the institution*, we look at the various aspects of creating an application for third-party project funding. Chapter 2, *Institutionalisation of online learning*, discusses the process of change management conducted within TVTI, the cornerstone of successful and sustainable digital transformation. The upskilling of TVTI's faculty members is covered in the third chapter, *Creating sustainable blended learning*. This process was based on the cascade method as a multiplier of new skills. Finally, chapter 4 clarifies the technical requirements and processes needed to support e-learning. It details the hardware requirements and also the administrative processes and procedures that must in be in place to make such a transformation successful and sustainable.

Keywords: pedagogics of higher education, web learning, change management, vocational education, online learning, project management

FOREWORD

It is with great pleasure and anticipation that we introduce this final guidebook, *Digital transformation of learning environments. From the classroom to student-centred online learning*, documenting the journey and impact of the Modernizing TVET Pedagogy (MOPEDE) project. This project, with its far-reaching implications for the future of Technical Vocational and Training (TVT) in Ethiopia, has been a beacon of innovation and progress, focusing specifically on student centred blended learning.

At the heart of MOPEDE lies a fundamental mission: to enhance the accessibility and quality of VET teacher education throughout Ethiopia. By modernizing pedagogical approaches and embracing technological advancements, this initiative seeks to align TVT-sector practices with the overarching goals outlined in key strategic documents such as the Ethiopian Education Development Roadmap (EEDR, 2018), the Technical Vocational Education and Training for Sustainable Development framework (TSDP, 2018), and the Growth and Transformation Plan of Ethiopia (GTP II, 2016).

The significance of MOPEDE's objectives cannot be overstated. By bridging the gap between traditional teaching methods and contemporary digital approaches, the project aims to revolutionize the TVT landscape, ensuring that it remains relevant and responsive to the evolving needs of students and industries alike. Central to this endeavour is the institutionalization of e-learning within the Federal TVT Institute and its satellite colleges, thereby facilitating the integration of digital resources into curricula and enhancing teaching and learning methodologies.

Crucially, the impact of MOPEDE extends far beyond the confines of individual institutions. By equipping future TVT trainers with the skills and knowledge necessary to embrace modern pedagogical techniques, the project lays the groundwork for systemic transformation within the entire TVT system of Ethiopia. The ripple effects of this endeavour will be felt for years to come, as graduates go on to shape and elevate training practices across the sector.

As we reflect on the achievements of the MOPEDE project, it is essential to acknowledge the tireless efforts of all those involved: from the visionary leaders who conceived of this initiative to the dedicated project managers and coordinators who worked tirelessly to bring it to fruition. The acknowledgement also goes to all active participants, whether they were

the Finnish experts guiding us, core members of the e-learning team or the many ToT instructors.

Their collective commitment to excellence has made this journey possible, and their ongoing dedication will be essential as we continue to build upon MOPEDE's successes in the years ahead.

In closing, we extend our sincere gratitude to all partners and stakeholders who have contributed to the realization of MOPEDE's objectives. May this guidebook serve as both a testament to our accomplishments and a roadmap for the future, guiding us as we strive to unlock the full potential of digitalization in TVT in Ethiopia and beyond.

HE Dr Teshale Berecha
State Minister for TVET
Ministry of Labor and Skills

Dr Biruk Kedir
Director General
Technical and Vocational
Training Institute

Futureproofing the institution

FUTUREPROOFING THE INSTITUTION

Graham Burns, Jamk University of Applied Sciences, and Matiyas Teshome, FDRE Technical & Vocational Training Institute

This chapter assumes that you, the reader, has had a great idea for developing e-learning either in your own institution or another higher education organisation abroad. It also assumes that you have not been through the process of writing an international project proposal yet. It will therefore guide you through the main stages of what you will need to consider, what information you will need to gather, to a certain extent, how you could write your narrative proposal for best effect. So, buckle up, as they say, here we go.

PROJECT PLANNING AND PROPOSAL DESIGN

Before we begin to think about how to design a project proposal, we must be clear on the meaning of three crucial terms, *inputs*, *outputs* and *outcome*, and the differences between them. A project's **inputs** are the actions you will take, for example, training colleagues, creating new or revised curricular, to achieve certain concrete goals. A project's *inputs* should be designed in such way so that they produce the **outputs**. These can be new learning programmes, methods, or physical products, such as academic articles, guidebooks, etcetera. A project's **outcome**, however, is often described as the effect the *outputs* will have on achieving a stated change. In recent times, this has often been seen as an indicator of the sustainable legacy of project actions. This process and the relationship between *inputs*, *outputs*, and *outcomes* are exemplified in Figure 1 and Table 1 below.

WHERE DO I START?

You might imagine that the answer to this question is rather simple, start at the beginning. Well, yes and no. The need for change; the underlying reason for the requirement to create a project, can be a product of a political directive. Governments often introduce legislation that requires change to be affected at grassroots level. In such cases, the needs are often implicit in the new legislation but may require detailed examination to discover the core imperative. Often educational projects are born out of identified needs of a single, or group of organisations, often revealed by conducting a standard

SWOT analysis. Such needs can be a new initiative or the next logical step or series of steps in a longer journey of transformation. From this perspective the process can be said to begin with the impetus for change. However, whatever the impetus, our project planning must now jump to the opposite end of the process.

The best place to start your project plan is at the end, and then work backwards. Your first task, therefore, is identifying what outcome you need to produce or affect. This can often be found in the impetus for change itself but, as previously mentioned, if the impetus comes from a change in the relevant law or regulations, it may need you to examine the legislative text very carefully. You should consider, what the end goal of what you want to do is. What the sustainable legacy – long-term effect – of want you want to achieve will be. Once you have clearly defined the desired outcome, you can decide how you will do that, what your output will be. What will be the mechanism to achieve the desired affect? This can be, for example, a new higher education module, course, or programme. It could be a new procedure within your institution, or a different way of doing existing tasks that will improve effectiveness and/or efficiency. Knowing what output you want to create helps you decide how you will achieve that. You must then consider what the best input or inputs would be to produce that concrete output. Once you reach this point, you have the basic outline of your project plan, and you can create a series of dynamic slides that you can use to inform potential partner institutions of your ideas as you try to get them agree to join your adventure. This slide pack can be updated as you discuss your ideas with potential partners.

Figure 1. There must be a clear link Input through Output to Outcome. Source: Graham Burns.

WHAT ABOUT THOSE PARTNER INSTITUTIONS?

In any project consortium there be will two types of partner institutions, full partners and associate partners. It is important for you to understand the difference between these two groups and what they can and cannot do for the project right from the beginning. As a rule, you should always be aware of the eligibility criteria for the funding instrument you wish to apply to before you contact any external partners. As a general rule you might consider the following to be benchmark, especially if your funding instrument is part of the European Union's Erasmus+ programme.

In the context of projects that are designed to build capacity at higher education, a full partner can only be either an institution of higher education (university, university of applied sciences/polytechnic), or an organisation or institution active in the labour market or operating in the education, training or youth sector. A government ministry or agency cannot be a full partner. Associate partners, on the other hand, can be any organisation which can provide expertise or services that cannot be found from within the consortium. In this group of partners, you could consider specific individuals from government ministries or agencies who can provide expertise you deem critical for the success of a particular task or series of tasks, for example, accreditation of new academic products. A second group of associate partners to consider are those professional bodies, for example, teachers and/or employers' associations who might be agreeable to using their existing networks for dissemination purposes at both national and regional levels. In the same vein, you might want to disseminate your project's work at a wider level. Therefore, you can look at international teaching and learning professional associations. Such associations have annual conferences that can attract large number of educators from around the globe. They can be open to guaranteeing you a presentation slot at their conferences during the project's implementation.

You could begin by considering those institutions you are already aware of, those in your existing network of international contacts to be full partners. Keep in mind your desired outcomes as you decide which institution might be best to help you achieve your goals. You might have experienced working with certain universities, NGOs, or external private companies previously and that is a good place to begin, if a partner's experience is relevant to your needs. Often higher education institutions can be very busy and therefore might not have the resources to be able to join your project at the particular time. You can always ask them to recommend another suitable partner for you to reach out to. That's how you grow your network. Institutions often welcome 'cold

calling' from new partners. If you are planning to submit a proposal for the European Union's flagship education programme, Erasmus Plus, you can use their in-house partner search function, eupartnersearch.com. The main point in your partner search must be to create a consortium that is best suited to achieving the project's goals, i.e. the outputs and outcomes.

Once you have agreed that particular partners will join the project consortium, there is a lot of information about each institution, and its team, that you will need as you move forward. The best way of gathering that information is by asking them the complete a Partner Identification Form (PIF). A common template for this is included at annex 1 to this chapter. From each completed PIF, you will be able to create a description for each partner that describes their suitability as consortium member to achieve the project's goals. It should include a detailed paragraph about their core functions and how that is relevant to your project's action. Additionally, you will need to include all their relevant experience in similar projects in the thematic and/or geographic area as well as a short biographical description of the expertise of each of their team members to demonstrate their suitability towards the endeavour.

TABLE 1. Simplified example of narrative linkage. Source: Graham Burns		
Input	**Output**	**Outcome**
Actions	Concrete results	Sustainable Results
We propose to purchase (n) tablets for loan to the most under-privileged student teachers. These will be configured for direct, secure and stable access to online learning material.	These underprivileged students will then be able to conduct their studies even if they reside in remote locations away from the main conurbations. This will increase the number of highly educated TVET teachers in RW and ET by (n) in each year from 202X to 202Y and beyond.	Having more highly educated TVET teachers will contribute to the number of successfully trained TVET graduates available for the domestic labour market, thereby increasing the possibility of regional mobility of employment for an exponentially larger number of vocational workers.

SITUATING YOUR IDEAS IN REALITY

Throughout the proposal writing process, allow yourself to be guided by the fund giver's application process and online application frame. There is always a set of questions in each section to which they expect you to answer. Recent application processes have included emphasis on focus areas such as equality and equity of ethnic minority and under-privileged involvement, gender equity, climate sustainability, among others. Make sure you answer each question posed in every section of the application frame explicitly in your text, ensuring the link from input to output to outcome is clear. Now it is time to fill in the gaps beginning with situating your proposal in the current reality.

Change, and the projects that deliver the necessary actions for change, do not occur in a vacuum. There are always relevant factors that come into play that you need to consider. You must look at the current national (and regional, if applicable) legislation and regulations that are in place and relevant to your work. You must ask yourself these questions:

- How do these laws and regulations affect what I do as an educator? You should also consider the effect of any recent changes in the legislation. Think about the aim of such changes.
- Is there a clear goal for such step-changes to the educational law?
- What are the long-term goals of the government for the relevant sector of the education ecosystem you work in?
- How do those goals affect your institution, your daily work and how are those likely to change in the future as more legislation is enacted? If you are considering a project with regional implications, you will need to be aware of the geo-political situation across the region in a similar way.
- Is there a legislative framework in place to facilitate the changes you want or need to introduce?
- What are other nations in the region doing to meet similar goals? Is there an applicable regional/international framework in place already? If so, how can you work within it to achieve your goals? If not, is one expected, when and which entities are responsible for it, what stage is it at currently, and when might it be agreed and signed by governments?

Clearly not all the points above are relevant to every project so you must select only those issues that are relevant to the proposal at hand. You must write the answers to all relevant questions in exhaustive detail though so that the need for your project is explicit in the opening pages of your proposal. To be successful, a proposal must allow an evaluator to understand why the action is necessary with having to think too deeply.

HOW DO I DECIDE WHICH IS THE BEST APPROACH AND WHAT ARE THE BEST METHODOLOGIES TO ACHIEVE THE DESIRED RESULTS?

As part of your work in preparing your outline plan, you will have no doubt considered what inputs you might like to design to achieve your aims (outputs). You may even have decided who will lead their delivery. That's good, because it is always better to have an outline plan than to have no plan at all. It is also good to remember now what we said earlier about having a dynamic plan. By now you will have invited the partners you have identified as being the most suitable for your project to be members of the consortium. You might even have had a 'get-to-know-you' type of meeting, probably online. It would be a good time now to organise your first co-creation meeting to begin to develop your application text into a proposal. This best done face-to-face but in extremis, can be done online. The biggest problem that you will have in this part of the problem you face now, before you even submit your proposal, is funding for the work that is necessary in this preparatory phase. If you are planning to include European higher education institutions and/or apply for Erasmus+ funding, you can apply for Global mobility funding from your national or regional Erasmus+ agency to cover those costs. Further details of this can be found on the Erasmus+ Global Mobility webpage. (Mobility projects for higher education students and staff, n.d.)

When you eventually get all your partners in the same meeting, your tasks should be to decide on the best methods of achieving the projects outputs. This should be a collaborative process in which all partners have equal sway. You should rely on those more experienced to make sensible suggestions about the input tools and mechanisms, deliverable products, methodologies and, critically, to make suggestions for improving your initial outline plan. Once the partners have agreed what all those aspects could be, you can begin writing the description of each work package (sometimes called outputs). As with the background text you wrote earlier, you need to make sure that the

relationship between the input, the output and outcome are made explicitly clear in each work package description.

This part of the process is often lengthy and can involve a lot of, sometimes, heated discussion. Do not try to force these discussions into a short timeframe. They must take as long as they take, because it is important that all parties feel that their voice has been heard and their input is valued. This way the whole consortium will develop joint psychological ownership of the whole plan and therefore be more committed to its success. Once you have written these descriptions, you can think about which order these myriad tasks have to be completed in – and that means creating a logic framework, unless you have already so.

WHAT IS A LOGICAL FRAMEWORK OF ACTION/THEORY OF CHANGE AND HOW DO I DESIGN IT?

Now you have done the creative part of your plan you have to begin to think logically and decide in which order certain tasks need to be performed. A logical framework, sometimes called a theory of change, is a description (or diagram) of work packages, tasks, and resources that can bring about the desired change. It is a way of describing the relationship in time and causal linkages among many tasks. It is often created in dual formats, one can be pictorial or tabular, and other is a narrative description in which you describe the logical process you have devised. Your logical framework or theory of action should follow the same principle as we outlined earlier depicted in *Figure 1* of ensuring the explicit linkage from input to output, to outcome, is clearly evident.

Once again, this is an activity best done collectively. Some project planners believe that completing this before the one outlined immediately above. They feel it helps the team to create the details for each work package more effectively because they have to be clear above what outcomes are required, what outputs would be needed to achieve those outcomes, and, logically therefore, what inputs would be most effective in attaining the outputs. You may also be required to create a Gantt chart showing when each task will occur within the project.

Some funders may direct you to produce a results-based framework instead. This table will function the same as a logical framework of actions. It will also help you to identify those critical tasks and essential outputs or deliverable products and/or services that you need to demonstrate to prove the success and sustainability of the project. Does that sound familiar? It

should do because it is the principle shown in *Figure 1*. It is possible for funding agencies to identify fixed outcomes in their programmes. If that is the case, your inputs and outputs must be created to address those fixed outcomes. You will need to identify overall project impact and describe in detail each main task and deliverable included in every work package. A typical framework will ask you to describe the indicator (task/product), the baseline (situation before intervention), the target (desired situation after intervention), the evidence you will use to show the success of the intervention, and any assumptions you made to be able to complete that task. This clearly best completed in tabular format and a suggested format in included at annex 1 of this chapter.

When you are working with an online application frame, the space is often limited so be careful not to waste your effort describing actions that simply will not fit the application frame. Oh, and by the way, when the online application frame says a particular section is limited to 1500 characters, that usually includes spaces as well.

WHAT IS A RISK ANALYSIS AND HOW DO I CREATE IT?

Risk analysis is the process of identifying and analysing potential situations or actions which might affect the progress of a single task, or the whole project. We conduct this step so that project leaders are aware of all potential risks and consider all the necessary means to mitigate them. In other words, it is important to have a Plan B for when things go wrong that are beyond your control. This is an important step in the planning process which, generally does not take too long but should not be thought any less important for it. You therefore need to consider every risk to your plan and create a document in which you examine each risk independently.

Different funding agencies will demand that risk assessments are completed using their own specific template but, generally speaking, they often require the same information. You can prepare this information as soon as you can with your partners by discussing and answering the following set of questions:

- A brief statement of what the likely risk is.
- How likely is this risk occurrence, classified as low, medium or high?
- How dangerous is this risk to your project, classified as low, medium or high?
- Why do you think this risk poses a threat to your project?
- What will you do to mitigate the effect of this risk in case it occurs?

A good practice is to categorise these risks into groups, for example, contextual, programmatic and institutional. Under contextual risks you can include those factors that are related to events outside the educational sphere but have the potential to affect it. For example, politics, environment, national and or regional infrastructure (transport, telecommunications, and so on). In the category of Programmatic risk you should consider things like cultural differences between partners, existing limitations of institutional processes and procedures and loss of key actors from partners in your consortium. Finally, thinking about institutional risk, you might consider our partner organisations, for example, political appointees to senior management roles might change the university's whole curriculum, internal (ICT) infrastructure failure, loss of key project staff, sustainability of project's legacy. All these risks should be discussed openly and honestly, particularly with those institutions that will be the main beneficiaries of the funding.

WHAT IS COMPLEMENTARITY AND WHY IS IT IMPORTANT?

The golden rule of development projects is do not try to reinvent the wheel. There are many players from all around the globe vying for funds to work where you are planning to deliver your project. Many of they will receive grants from different funding agencies to that which you have or will apply to. If you think you have a great idea to transform education in any given way, in a specific location, you can be assured that someone else has had the same plan. This has been a thorn in the side of funding agencies for some considerable now. How can they ensure that we are not doing the same work as the next guy and thereby wasting valuable resources? The answer is complementarity.

Complementarity means working by supporting each other to achieve similar or a joint goal. Knowing what other actors are doing in your target area is the key to making sure you achieve complementarity. You should contact each organisation and share your ideas of what you each want to achieve. For example, if both you and the other team have decided to build and equip a digital studio to create e-learning material, for example, you can agree to share the cost. You have to decide who will do what, who is responsible for which tasks and the deadlines for completion. Working in that way **complements** the work of the other team and is a more efficient use of limited resources. In other words, it creates a win-win situation.

It sounds self-evident and easy, but it is not in either case. It takes time and effort by a project manager to find relevant actors and then negotiate the work that should be shared. Liaison between teams should continue throughout

the projects' life cycles so that working relationships and rapport develop. A good idea is to take part in each other's activities if time and circumstances allow. You can also produce dissemination products together which both highlight your collaboration and your project's activities.

WHAT IS DISSEMINATION AND WHAT SHOULD I INCLUDE IN THE PROJECT PLAN?

In development project work, the term *dissemination* is used to describe all the products that collectively tell stakeholder groups outside your consortium about your project's plans, progress and results. These products fall into different categories depending on the type of message and the target audience. You might want to include social media to communicate to professional associations or organisations, for example, teachers' associations or unions, employers' organisations, etcetera. Perhaps it would be good to publish press releases in local newspapers or feature articles in trade magazines, and it is always a good idea to publish academic articles based on aspects of your work in peer-reviewed international journals or attend academic conferences hosted by professional associations mentioned in the paragraphs about finding partners above. It is worth keeping in mind that some benefactors like the EU, for example, require that information about their funded development work is disseminated openly during the project and the results are disseminated at the end of the project. Further information about this aspect of dissemination is included below in the paragraphs about impact.

As part of your project proposal, you can expect to have to describe in detail your plans for disseminating news about your project to your stakeholders and to your colleagues throughout the consortium. Therefore, during the planning phase you will need to sit with your partners and create a dissemination plan. The first step is for each partner to define who their own stakeholder groups are in relation to your project's outcomes. Then, for each of these identified groups, decide what type of message you wish to use to communicate with them and which channel you will use to that. Finally, you should decide how often you will communicate with each group, and when. A good tool for organising that is the Dissemination Planning and Reporting template found in annex 4 of the chapter.

When have defined the dissemination products you intend to produce and you have entered them into the template in annex 4, you should also create a dissemination plan and reporting policy document to guide all partners in their actions. This policy document should outline the project group's

dissemination strategy, the channels it intends to use to communicate with stakeholder groups, explicitly define those stakeholder groups, the project's visual identity, timing of each communication (limited to 3-month periods, e.g., 2025 Q2 (in the period of April to June of 2025)), and finally concrete qualitative and quantitative KPIs for each category of product. This policy must be subsequently monitored by the project's board and applied throughout. It could be, of course, that your project design includes a separate work package solely for dissemination. In that case, the WP leader should be responsible for monitoring all dissemination and report progress to the project Board at each of its formal meetings. Dissemination is an important part of project work. It plays a considerable role in ensuring the sustainability of your project's actions long after the period of funding eligibility ends.

The project's visual identity, as mentioned above, is like a mini branding guide for your project. It should define the project's logo, what internal and external document should look like; the layout of certain document types, where and in which order are the necessary logos placed, what font and pitch should be used, etcetera. It can also stipulate a colour scheme to be adopted for the website and, to a certain extent, partners' webpages. You might like to keep in mind that the latter products always remain with the control of the partner institution and therefore will have to conform to their own in-house branding guide.

HOW DO I ENSURE THE PROJECT'S SUSTAINABLE LEGACY?

Demonstrating the sustainability of your project's work is a vital element in obtaining funding, no matter which benefactor you apply to these days. It is therefore important that you are able to describe all the steps the consortium will take to ensure the project's legacy remains and that any product or service developed with project funding is not simply put on a shelf and forgotten as soon as your final report has been accepted. The are a number of aspects that you need to include here, for example, academic products such as modules, courses or programmes; fixed assets; e-resources, such as websites or pages related to your project; and well look at each one of these separately.

If your project wants to develop academic modules, courses, or a whole programme, it is important that those who are going to deliver that product in the target institution are part of the developing team. The strength in the co-creation method of developing a product or service is that it fosters psychological ownership from the beginning. New courses must often go through a system of accreditation before they are allowed to be offered to

students. It therefore makes sense to involve the relevant accreditation body in the development process. Once the product has received accreditation it becomes a part of the institution's curriculum and should remain so. Funders like to know that such products will be supported by the target institution for a stated length of time, usually 5 years after the project has ended. Your funding application and the project's final report should therefore state this fact explicitly.

Similarly, fixed assets must be maintained by the receiving institution in the normal manner for a period beyond the end of the project. That normally equates to the accepted length of usability of the item in question. Each institution will have a property register of one kind of another. Therefore every item, whether it is a chair or a high-specification piece of computer technology, must be entered into the property register as required by local regulations. The responsibility of the receiving institution is then to maintain that item as it would for every other item in their property register. Funding agencies often demand that all fixed assets procured with project funds are clearly marked with their logo and are recorded as part of the project's final report. As a project manager, you should therefore keep a separate record of each item bought so that you can provide that information when it is required. It is also good practice to photograph technical acquisitions and post them in your social media channel(s), including recognition of the funding agency. Once again, make sure that this is made explicit in your funding application and the project's final report.

Dissemination, in its various forms, ensures impact and sustainable legacy. As part of your dissemination plan, you will probably have included a dedicated website, specific project webpages on each of your partners' websites, and these will all, no doubt, have hyperlinks to all the others' relevant project pages. On your project's website there should be a clear but concise explanation of what the project is planning to do. It should include a list of all the full partners' contact details and, optionally, relevant associated partners. There should be a section for news about project events and progress reports. Importantly, there must be a part of the website where visitors can access all deliverable products and download them if the so wish. It is worth remembering that all products derived from publicly funded projects remain the property of the public and must therefore be freely and openly available. A project website must always display funder's details, logo and relevant disclaimer prominently. Partners' webpages somewhat less prescriptive but must always contain the same funder's details, logo and relevant disclaimer. All this, and any other elements required by the

funding, which you will ascertain in the programme guide from the funder, must be described in the project proposal and reiterated in the final report. As will the preceding paragraphs, as beneficiaries of public funding, your institution, and each of your partners, will be expected to maintain these web-based resources for at least 5 years beyond the funding period. You should therefore include a statement in both your application document and the project's final report to that effect.

Finally, as a means to provide support to each element of sustainability, some project managers have, in recent past taken to producing a sustainability agreement, which all partners are required to sign at the end of the project. It follows the same format as that of the initial partner agreement that you will negotiate with each partner institution if your application for funding is approved. A sustainability agreement explicitly lists all the requirements, in terms of each category of product with a specified timeframe, for each consortium partner. At the time of writing, I do not believe this is common let alone mandatory practice, but it is a good idea, because it makes your intentions explicit.

PROJECT ADMINISTRATIVE ARRANGEMENTS

So, at this point in the process, you know what you want to achieve and how you want to implement the required change. Now you need to turn your thoughts to what it is going to cost. Everything you will do in your project will be based on the cost of using certain resources. Those resources can be categorised as staff costs, travel and costs of stay, sub-contracting, and procurement of fixed assets. Before we can look at how you calculate the costs in those categories, we have to consider co-financing.

CO-FINANCING

You will have chosen the most suitable funding instrument for your project from any number of benefactors, for example, your own national government, the European Union, World Bank, African or Asian Development Bank. You must be aware that each and every funding instrument (development programme), will have a requirement for what is called, co-financing. This means that each beneficiary of the granted funds, in other words, every partner, has to commit to providing a minimum of their own funds to the budget according to a stipulated percentage. This is designed so that institutions can develop as they must but without making a financial profit with granted funding. The

percentage requirement for co-financing can be as high as, for example in the EU's case, 20%. In real terms, this means that if your overall budget is 1 million euros and you have five full partners, their individual co-financing commitment must be 20% of their own total budget. See Table 2, for clear example of how this can work.

TABLE 2. An example of how co-financing works in relation to a third-party grant.			
Partner	Third-party granted funds	Co-financing responsibility at 20%	Partner's total implementation-budget
P1	125 000,00 €	25 000,00 €	150 000,00 €
P2	160 000,00 €	32 000,00 €	192 000,00 €
P3	175 000,00 €	35 000,00 €	210 000,00 €
P4	190 000,00 €	38 000,00 €	228 000,00 €
P5	176 000,00 €	35 200,00 €	211 200,00 €
Project total budget			991 200,00 €

As you can see in Table 2 above, the project-level budget for this example is 991 200 euros. The first partner (P1), for example, must commit to spending a MINIMUM of 25 000 euros of its own funds in this project. Along with granted funds of 125 000 euros, that allocates P1 an implementation budget of 150 000 euros. That level of co-financing is reported as an integral element of expenditure to the benefactor.

   Partners may include values in excess of the calculated requirement and while such reporting is voluntary, it is recommended that beneficiaries do so to give the benefactor an overview of increasing costs. The co-financing rate, sometimes called the contribution, is always set by the benefactor and is non-negotiable. As I mentioned earlier, each benefactor will have their own application platform in which you must submit your proposal, including your budget. In this part of the online application, the co-financing requirement will be calculated automatically, therefore, you must keep an eye on the subtotals and project-level total to ensure your costs remain within the maximum permitted levels.

STAFF COSTS

Now, let's look at those cost categories one by one, beginning with staff costs. Usually staff costs are calculated by the day and according to the staff category rates applicable in your institution (and often in your country). Those staff categories are usually defined as manager, teacher/lecturer (this can sometimes also be subdivided into senior, junior levels) administrator, and technician. You should now gather information about the daily cost, according to the categories identified by the application proforma, of employing each individual you plan to involve in the project. This is information that you will need from each partner. Remember, these rates will be different for each partner because of national variations in salary structures. The application proforma is then likely to need you to input the number of days you require in each category, for each partner. This is often a process related to each work package or output. You might consider, therefore, that your institution has the following staff costs for a particular work package/output:

TABLE 3. Calculating staff costs for a work package/output.			
Staff Category	Daily rate	Number of days	Cost
Manager	50,00 €	1	50,00 €
Senior teacher/lecturer	45,00 €	14	630,00 €
Junior teacher/lecturer	40,00 €	20	800,00 €
Administration	35,00 €	2	70,00 €
Technician	35,00 €	0	0,00 €

As you will notice, the daily rate has been input for each category, and the number of days required. The application proforma will then automatically calculate the staff costs for that work package/output (shown in light green column above). Now we can turn our thoughts to travelling.

TRAVEL AND COSTS OF STAY

Just like staff costs, we need to think about how we pay for travel, subsistence and accommodation for every field trip. You can begin by thinking about the answers to these questions:

1. How will the traveller(s) get to and from the airport and what is a reasonable estimation of the cost for that?

2. How much will it cost for one return flight ticket?

3. How much will hotel accommodation cost per person for the planned length of stay?

4. How many people need to travel?

5. How many days will each trip take (from leaving home to arriving back at home)?

6. What daily allowances are payable in the location you are planning to visit?

Use the internet or your dedicated travel agency to find the answers to questions 1 to 4. When you have the answers to these questions, it is a matter of simple arithmetic ((A1:A3) x A4) to work out the travel cost for each field trip. Then you need to know what daily allowances are payable for the travellers in each specific location. Your partners are usually best placed to source this information for you. Once you know those rates, again, simple arithmetic comes into play (A6 x A5 x A4). Inputting all this information into the benefactor's application platform is then a matter of filling the boxes with the required data and letting the programme add it to your project-level costs. Now it's time to turn to sub-contracting.

SUB-CONTRACTING

Most benefactors are aware that projects can sometimes be enhanced by sub-contracting certain services to organisations or individuals outside the consortium. The main justifying point here is that the service in question must be critical to the success of the work package, or specific task, and cannot be provided from existing resources within the consortium. At this point must be explained clearly and explicitly in the narrative description of the project. You must then calculate the cost of every sub-contracting action, whether it is producing a guidebook like this one, hiring a bus to visit a relevant organisation, or engaging a renowned expert from the other side

of the world to deliver specialist training. A common example of this in the higher education context is when your project is introducing new courses or programmes that must be formally accredited before being allowed into use. If the accreditation body is within the partner university, you can include their work in your normal project activity plans, and they can receive budgeted funding accordingly. If, however, the relevant authority is within a government ministry or agency, you can still include their work, but they can only receive funding as an external expert. Then you need to negotiate with the relevant office and agree who will do what, when, where, and what contribution to the output will be achieved, and crucially, what the cost will be.

Take the time to calculate all the costs carefully and input them individually into the relevant place in the application proforma. If, during the implementation of your project you realise that you need to sub-contract addition external services, you should always consult the programme managers before doing so. Not doing so may result the costs of that additional service or services being deemed ineligible for project funds. The last financial element you may wish to consider is whether or not you will need a contingency fund.

CONTINGENCY FUNDS

Some benefactors will expect you to include a contingency fund in your budget, others may allow you include one, while others may not. Please remember to check the funding instrument's financial rules on this. The whole purpose of a contingency fund is to provide a relatively small amount of funding that the project coordinator can use in the case of unforeseen events. It can often be limited to a set percentage of the project's total budget. Decisions concerning its use are often delegated to the project management board. The fund can be used for anything deemed appropriate by whichever partner. The amounts in question are therefore relatively small and are thus under the financial ceiling whereby the coordinator must refer the transfer of funds to the programme managers for authority. Now you have written your application and constructed your budget, all in collaboration with those partners you carefully chose, you will wait for what will seem to be a long time to hear whether or not your project proposal has been accepted by the benefactor. It is worthwhile knowing that 'only the best' proposals are accepted for funding. You may therefore find that out of six or seven proposals you submit, only one may receive funding. Don't lose heart, keep trying. We are all in the same position and all applying for the same pot of gold.

CONTRACTUAL AGREEMENTS AND THEIR LEGAL STATUS

Let's now imagine that your project has been accepted and you have received notification that your grant will be paid. What are the important documents you need to be aware of, and why? First of all, the benefactor will send you a grant agreement for the head of your institution to sign. This agreement is a legal contract between the benefactor and your university, as the coordinating institution to deliver what your proposal, now the project plan, contains. It is enforceable in a court of law. Once this contract has been signed and a copy returned to the benefactor, you will need to begin negotiating bilateral agreements with each partner. Partner agreements are very similar to the grant agreement in both content and status. Once signed they are legal contracts to deliver what has been agreed in the project plan. It is usual that the benefactor receives a copy of each bilateral partner agreement once they are signed. It is also usual for these agreements to state which in court will disputes be settled.

The accepted practice is that the high court in the territory in which the contract was instigated will be nominated. For example, a grant agreement between the EU and TVTI will state that the high court in Brussels, Belgium, will adjudicate in disputes. All partner agreements instigated by TVTI, regardless of the geographic location of the partners, will state that all disputes will be heard in the high court in Addis Ababa. It is highly unlikely ever that disputes will ever reach this level, but it is an important safeguard that you must include. Normally, if disputes cannot be settled through discussion between the parties involved, there must be an internal mechanism to resolve any issues.

CONFLICT RESOLUTION

The project management board is responsible for managing conflict resolution when the disputing parties cannot find a way to work together to resolve the issue. Therefore, the board must have a plan of how they will do that, to which all partners agree to abide by. This is best achieved by including it in the bilateral partner agreements. The framework within annex 5 is a suggested mechanism that can be used for this purpose.

FINANCIAL AND ADMINISTRATIVE REPORTING

Let's now begin to look at financial and administrative reporting. This is often different from one programme to the next. Some programmes require you to submit a report midway through your project, which details the tasks you

have completed and those that remain in each work package/output, and then once again at the end of the project. Other programmes require you to do this annually in a cumulative manner. Whatever the reporting timetable is, the fact remains that information must be gathered from partners and financial accounts reconciled in each case.

The programme of which your funding instrument is a part, will have a document, or a set of documents, which will guide you and your partners in administering your project. They are all very similar to each other in that they will focus heavily on financial reporting and transparency, ethical and equitable practices, and certain documentation that the programme managers have decided is important. It is worth reading these administrative guides thoroughly so that you will understand what is required of you when it is time to submit the project reports to the benefactor. Read all the instructions very carefully and follow them to the letter. Pay particular attention to every aspect of financial management. You will need to record every hour of work and each Euro, Indonesian Bhat, Ethiopian Birr, or whatever currency your grant is given in meticulously. For time spent working on project tasks, each individual must record their work on specific documents, which are usually directed by the programme managers. If the programme managers do not direct you to use a specific document, you can create your own based on the example of a time sheet that you will see in annex 6.

Every instance of expenditure on, for example, travel, accommodation, fixed assets, must be supported by invoices and, where necessary in the case of fixed assets, documentary proof that the procurement process was conducted in accordance with your institution's regulation for such actions. Fixed assets must also be shown to have been entered into the institution's property register. Some benefactors require stickers showing that a particular item had been bought with funds they provided. It is good practice to take and save photographs of all fixed assets, particular those with benefactor's stickers to support the expenditure.

Speaking of good practices, it is recommended that all project managers create a standard, digital filing system in which they begin to collect and save supporting documentation for each action from the beginning of the project. The more supporting documents you have, the easier it will be for you to respond to requests for evidence from the benefactor's evaluation team at the end of the project.

In many ways, financial reporting is much easier than administrative reporting because you will be provided with the spreadsheet templates that the benefactor requires you to use in all cases. Your institution's bookkeepers

should record every item of expenditure in accordance with the benefactor's instructions. There may even be a separate financial management reporting guide which both you and the bookkeeper need to be aware of. Follow the guidance given and if and when you get stuck, always ask the benefactor for advice. There are another two important elements of project management that you need to keep in mind, and hopefully, you have included them in your initial budget proposal. If not, go back to your budget proposal now and ensure they are.

At the conclusion of every project the coordinator is responsible for conducting a financial audit of the project's budget in accordance with the rules set out in the relevant administrative guide. If your institution has a contract with an external auditor, you may use that firm. If not, you may need to open a tendering process in accordance with your institution's regulations and procedures. In either case, the audit must be completed by an independent chartered accountant. The auditor must review all transactions, including supporting documentation to ensure that expenditure is eligible for project funding. They can also be asked by the benefactor (via the administrative guide) to assess the effectiveness of the project's financial management team, and the processes that have used throughout. On completion of their task, they must produce a thorough report of their findings, which you will have to provide to the benefactor as part of the final report.

At the same time, or more usefully in the final weeks of your project, you must have the project externally evaluated. While an auditor will examine the financial performance of your project, an external evaluator will look at what you had promised to do and compare it with what you actually did. In other words, they are required to examine the linkage between input, output and outcome, the effectiveness of the projects internal processes and procedures, communication and management. They are required to produce a comprehensive written report, which again will be part of the final report, one way or another. It is recommended that this report, even in draft form, is available to you for the final project meeting when it can then be used to support the dissemination of the project's results.

So now all that remains is for you to implement your project with care, and in accordance with the myriad of complex rules and regulations. If you are in any doubt about anything, consult the programme managers. You will undoubtedly have days when the things go wrong. In such times I wholeheartedly recommend that you discuss the way forward with the relevant partners and their key players. Finding a route out of a troublesome labyrinth is always best done collectively. Finally, please remember that all the people

you work with are worthy of equal respect and consideration. Your role as a project manager is complex and sometimes very challenging and stressful so, please remember that while it's nice to be important, it's more important to be nice.

LESSONS LEARNED FROM MOPEDE BY MATIYAS TESHOME

Working as a local project coordinator for a four-year student centred, blended learning project spanning Ethiopia and Finland, it was both a challenging as well as exciting experience. In the course of this transformational endeavour, I encountered many challenges, celebrated milestones, and learned invaluable lessons that profoundly shaped my professional growth and personal development.

To give readers the full context, this is my first project as a local coordinator in terms of the project focus area, duration, and nature of the partner institutions. My role in the project was "Local Project Coordinator". This role makes me the first contact person to coordinate the overall project activities from our institution side as a partner institution. The project manager is the leading project focal person and is from the coordinating institution. I directly report to the project manager.

In this section, I will reflect on the lessons I have learned as a local project coordinator for MOPEDE from the following points of angles: culture, communication and collaboration, flexibility and adaptation to change, team empowerment and leadership, and continuous learning and reflection. Finally, I have put some key points as remarks that I believe they require due attention by project coordinators in similar context.

CULTURAL SENSITIVITY AND ADAPTABILITY

Coordinating a project with collaborators from two regionally and culturally different countries underscored the importance of cultural sensitivity and adaptability. Recognizing and respecting the unique cultural norms, communication styles, and work practices of each country were crucial for fostering trust, collaboration, and mutual understanding within project teams. Embracing cultural diversity not only enriched the project experience but also enhanced our ability to navigate challenges and capitalize on opportunities effectively.

EFFECTIVE COMMUNICATION AND COLLABORATION

Clear and open communication emerged as the cornerstone of successful project management. Establishing channels for transparent communication, both within and across teams, facilitated information sharing, alignment of goals, and resolution of conflicts. Embracing collaborative tools and platforms enabled seamless collaboration despite geographical distances, fostering a sense of unity and shared purpose among project stakeholders.

FLEXIBILITY AND ADAPTATION TO CHANGE

Flexibility and adaptability were imperative in navigating the dynamic nature of the project environment. As we encountered unexpected challenges and evolving requirements, the ability to pivot strategies, reallocate resources, and embrace innovation was essential for maintaining project momentum and achieving desired outcomes. Embracing a growth mindset allowed us to view obstacles as opportunities for learning and improvement, driving continuous innovation and improvement throughout the project lifecycle.

TEAM EMPOWERMENT AND LEADERSHIP

Effective leadership and team empowerment were instrumental in driving project success. Empowering team members to take ownership of their roles, contribute their unique expertise, and pursue creative solutions fostered a culture of accountability, initiative, and collaboration. Providing guidance, support, and mentorship enabled team members to thrive in their respective roles, unleashing their full potential and maximizing collective impact.

CONTINUOUS LEARNING AND REFLECTION

The project journey served as a catalyst for continuous learning and reflection. Embracing a culture of curiosity, experimentation, and reflection allowed us to iteratively improve our strategies, processes, and outcomes. Regular evaluation and feedback loops provided valuable insights into what worked well and areas for improvement, informing future decision-making and enhancing project effectiveness.

KEY REMARKS

Finally, the following are key issues I strongly advise fellow project coordinators to give due attention to, when they coordinate a project in a similar environment and context.

- From the onset of the project implementation, critically assess whether planned actions in the project document and the way they are being implemented leads to the desired output.

    - ✓ The beginning is critical for any project.
    - ✓ Discuss openly with members whether the way things going now will lead to achieve the desired goals of the project.

- In settings similar to my institute, project coordinator must have full follow up of the financial transactions. I emphasize this point because sometimes there is a tendency from the project coordinators to leave everything financial to the project accountant. However, a project coordinator, as a minimum, must have up-to-date data on what amount is transferred to the project bank account from the funding institution and when, all expenses from the project account and their reason, and make sure the balances are always correct. Have a financial updating session with the project accountant to maintain a common understanding regarding all expenses, make sure all payments are supported by valid financial documents/payment receipts. It is also very important to make detailed investigation and cross check all the financial reports prepared by the project accountant before sending them to the coordinating institution.
- Close follow up and discussions with implementing members, based on a predefined schedule is key.
- Delegating tasks and discuss challenges and successes with delegated colleagues. Follow up delegated tasks to ensure they are going as planned.
- Evaluation of results by individuals based on an agreed check list, announcing best performers publicly is helpful.
- Close constructive follow up of individual participants, and if need be, share their work hours with colleagues from same department as early as possible helps to better attain the planned goals of the project.
- I have found it very helpful to have list of activities to be completed with a deadline after each physical visit by the project manager.

- I have witnessed that physical experience sharing of as much participants as possible, from Ethiopia to the partner country boosts their work moral in the project. It is obvious that such opportunities are limited but participants get practical exposure to the main themes of the project and that helps them to visualize that planned results of the project are practical and attainable.

- Being well documented on all aspects of the project is very critical. Have well-organised personal notes on these:

    - ✓ Clarifying notes on changes/modifications to the project plan, budget, processes, or anything if there is. Otherwise, we tend to forget why something was modified. For example, we can easily forget why some budget was shifted from certain activity to the other. Have a standard note for such needs and remember to write the clarifications immediately.
    - ✓ To do lists based on urgency of tasks.
    - ✓ Have calendars for events.

- Have a good work relationship and prompt communication with the project manager, use additional communication platforms in addition to emails for instant communications that are urgent.
- Incorporate and implement feed backs given by funding institution following each yearly report and incorporate changes sooner.

REFERENCES

Mobility projects for higher education students and staff. (n.d.) Erasmus+ EU programme for education, training, youth and sport. European Commission. Retrieved on 12.4.2024. https://erasmus-plus.ec.europa.eu/programme-guide/part-b/key-action-1/mobility-projects-for-higher-education-students-and-staff.

ANNEX 1 – PARTNER IDENTIFICATION FORM

A. PARTNER ORGANISATION	
PIC (only for EU funded projects)	
Full legal name (National language)	
Full legal name (English language)	
Acronym	
National ID (if applicable)	
Department (if applicable)	
Address (Street and number)	
Country	
Region	
P.O. Box	
Post Code	
CEDEX	
City	
Website	
Email	
Telephone 1	
Telephone 2	
Fax	

B. PROFILE	
Type of Organisation	
Is the partner organisation a public body?	
Is the partner organisation a non-profit?	

C. BACKGROUND AND EXPERIENCE	
Please briefly present the partner organisation.	
What are the activities and experience of the organisation in the areas relevant for this application?	
What are the skills and expertise of key staff/persons involved in this application?	

D. TEAM LEADER	
Title	
Gender	
First Name	
Family Name	
Department	
Position	
Email	
Telephone 1	
Address	
Country	
Region	
P.O. Box	
Post Code	
CEDEX	
City	
Telephone	

Source: Adapted from the EU's Erasmus+ programme

For detailed information about how to register an organization with the EU's Erasmus+ programme, go to https://erasmus-plus.ec.europa.eu/programme-guide/part-c/registration

ANNEX 2 – RESULTS-BASED FRAMEWORK TEMPLATE

Add more row for each additional Outcome and Outputs as necessary.

Name of Project:

IMPACT				
Programme Impact: *[You should be able to find this in the programme guide.]*				
Project Impact: [What is the project's overall target?]				
Indicators	**Baseline**	**Target**	**Sources of verification**	**Assumptions**
[BIG picture, project-level description for each indicator, etc]				
OUTCOME 1				
[Briefly describe the outcome here. Remember, these can be defined by the funding agency, and you might have to select those that are relevant to your project]				
[Briefly describe the major indicators that will contribute to affecting the outcome]				
OUTPUT 1				
[Briefly describe the output here]				
[Briefly describe each task that will contribute to the output]				

OUTPUT 2			
[Briefly describe the output here]			
[Briefly describe each task that will contribute to the output]			
OUTCOME 2			
OUTPUT 3			
OUTPUT 4			

Source: Adapted from the Higher Education Partnership (HEP) programme funded by the Ministry of Foreign Affairs of Finland and managed by the Finnish National Agency for Education.

ANNEX 3 – RISK ANALYSIS MATRIX TEMPLATE

Risk Statement	Likelihood of Risk Low/Medium/High	Impact of Risk Low/Medium/High	Explanations for the assessments	Risk Response and Mitigation Action
Contextual Risks				
Programmatic Risks				
Institutional Risks				

Source: Adapted from the Higher Education Partnership (HEP) programme managed by the Finnish National Agency for Education.

ANNEX 4 DISSEMINATION PLANNING AND REPORTING TEMPLATE

Product[1]	Channel	Target Date	Audience[2]	Lead[3]	Status[4,5]
Workshops[6]					
Conferences and Seminars[7]					
Public Communications[8]					
Scientific Communications[9]					
Annual/Mid-point, Final Reports					
Social media posts					
Websites and pages[10]					
Podcasts[11]					

Notes:

1. Any kind of message, document, AV recording, meeting/workshop or any other form of external communication related to this project.
2. Who needs to know about this information? There can be more than one stakeholder group.
3. The partner responsible for creating the product and the communication.
4. Record the status of the action as, Planned, In process, or Completed.
5. When recording status as Completed, include the link/URL to the communication as an embedded hyperlink.
6. Workshops used to raise awareness of project aims and activities. Do not include internal workshops for development, or educational workshops for enrolled students.
7. Only those open to external stakeholders, not only enrolled students.
8. Includes local, national or international media outlets.
9. Publications in professional, peer-reviewed journals.
10. When recording the status of websites and pages, record the status as In process and embed a hyperlink to each resource.
11. Record each episode separately and include In process in the Status column and embed a hyperlink to each episode.

ANNEX 5 CONFLICT RESOLUTION MANAGEMENT FRAMEWORK

In the event of a conflict arising between project partners, the matter is to be reported immediately to the Project Management Board who will investigate and work with both sides to achieve reconciliation. This action is to be completed in as timely a manner as is practicable. In all cases, the decisions of the Project Management Board in relation to conflict resolution are final and its directions for reconciliation are to undertaken without further delay or recourse. In the unlikely event that resolution cannot be achieved through this process, the Board is to refer the matter to the benefactor without delay.

The following framework is to be used by the Board as a tool to manage the process and achieve resolution.

Step 1	Clarify what the disagreement is. • Both parties need to have a mutual understanding of what the problem is; what needs are not being met. • Through discussion, gain as much information as possible on each party's point of view. • Do not move forward until all parties (conflicting parties AND the Board) understand the situation.
Step 2	Establish a common goal for both parties. • Both parties must agree on a common desired outcome. • Discuss what each party would like to happen and identify commonalities. • Highlight those commonalities as a goal to be achieved together. • The goal can be as simple as both parties agreeing they want to find a solution.
Step 3	Discuss ways to meet the common goal. • Work with both parties through dialogue to create ideas of how to reach the common goal identified and agreed in Step 2. • Do not proceed until all options have been explored.
Step 4	Determine the barriers to the common goal. • Discuss with both parties what has caused the conflict and what problems may prevent a resolution. Understanding the problems that may be encountered allows proactive solutions to be found more easily and to create plans for dealing with them. • Define what can and cannot be changed in the conflict situation. • Discuss ways of getting around those issues that cannot be changed.

Step 5	Agree on the best way to resolve the conflict. • Identify solutions that both parties are happy with. Refer to the common goals in Step 2 and the agreed method of how to reach it from Step 3. • Discuss the responsibility each party has in reaching a resolution. • Get each party to agree to those responsibilities. • Ensure that the root cause of the conflict is understood by all parties so that the problem does not arise again.
Step 6	Acknowledge the agreed upon solution and determine the responsibilities each party has in the resolution. • Get both parties to express aloud what their agreed responsibilities are towards resolution. • Have both parties use phrases like, "I agree to …" and "I acknowledge that I have responsibility to …"

Source: Graham Burns

ANNEX 6 EXAMPLE OF A TIME SHEET

[Project acronym]
[Project full name]
Benefactor: [benefactors name]

Timesheet

Name of the Expert :	(name)
Position in the project:	(role)
Month/Year :	[mm.yyyy]

Day	Hours worked	Place of performance	Activity / Output number	Description of Project Work

Insert more rows as required

Total hours	0	
Total days	0	(one working day = 8 working hours)

1. Date and Signature of Expert

3. Approved by the Project Coordinator

2. Approved by the Supervisor of Expert

4. Approved by the Project Manager

CHAPTER 2

Institutionalisation of online learning

INSTITUTIONALISATION OF ONLINE LEARNING

Anne Harmoinen, Centria University of Applied Sciences, and Eden Kebede, FDRE Technical and Vocational Training Institute

BACKGROUND FOR THE CHANGE MANAGEMENT PROCESS

The MOPEDE project effectively introduced online learning to the FDRE Technical and Vocational Training Institute (TVTI) through various means, such as assigning expert assistance in course design, implementation of the Moodle Learning Management System, a knowledge-sharing trip to Finland, and the provision of financial and ICT materials that promote online learning system at TVTI. The project highlighted crucial lessons, including the significance of expert guidance for successful online learning implementation, the value of practical experience sharing among educators, and the essential presence of sufficient financial and physical resources to ensure the smooth integration of online learning at TVTI.

The TVTI is a capacity building centre responsible for training technical and vocational trainers and education leaders. It is Ethiopia's primary technical and vocational education and training (TVET) institute in this regard. In the MOPEDE project the first step was to look at communication within the organization to discover which change process needed to occur first. There are several steps leaders can take to create a sense of urgency and gain the commitment of managers and coworkers. It is important for management to demonstrate commitment to the change to staff in multiple ways. At the same time, valuable information will be gained to inform the necessary decision-making process. Managers need to listen their coworkers and stakeholders to understand their concerns. It is important to share all supporting data related to the coming change of the working environment throughout the institution and ensure that institutional decisions and management actions reflect such communication.

TVTI's management are committed to online learning pedagogy and supporting personnel in the sustainable change to continuous development of modern pedagogy.

While creating learning environments, that bring together the arts, sciences, and computing in education, it could provide avenues for changing stagnant practices within those disciplines that currently marginalize people with non-normative identities and practices (Finch, Shapiro & Carstens, 2018). "As a novel method for creatively engaging participants and stakeholders

to find solutions to complex problems, co-design holds great promise for policy makers. It has been vaunted as a way to generate more innovative ideas, ensure policies and services match the needs of participants, achieve economic efficiencies by improving responsiveness, foster cooperation and trust between different groups, meaningfully engage the 'hard to reach', and achieve support for change" (Blomcamp 2018, 729).

Regarding Kotter, to manage a successfully transformation, we must create a compelling opportunity that serves as a North Star, a guiding point, around which we can mobilize large groups of people. This is an important step. Put together those who are critical for the transformation and take the time to get it right. Then use it to build urgency – unlocking the potential of those across the institution and its stakeholders to innovate and act. There is an amazing power within the walls of any organization. It is a matter of figuring out how to channel it in an aligned and inspiring direction (Kotter 2018). In the MOPEDE project, one of the main outputs was to develop the institutional support and management to adapt online learning as a part of the organisation's learning and teaching strategy.

This chapter describes the process of change for online learning development and a new information sharing cultural information. Its purpose is therefore to strengthen the institutional support and management for online learning development and promote a co-operative way of working. It will help you to identify what online learning change in the work of employees means and needs to and what it requires, and how you can support your colleagues to develop their own skills, thereby increasing the quality of education for their students.

LEARNING ENVIRONMENT

The topic includes a wide range of concepts, so the terminology is quite rich. The concepts used in a diverse learning environment include hybrid teaching and learning, blended-, online-, distance, face-to-face-, virtual learning, HyFlex- and asynchronous/synchronous teaching. There is no uniform definition of a diverse learning environment, and the literature refers to the topic using many different terms. Blended learning, hybrid and HyFlex are concepts that refer to a flexible way to combine learning face-to-face and online. Online pedagogy, i.e. the combination of teaching forms, methods and tools, guides the implementation of online teaching. Blended learning is one form of online teaching where both distance and face-to-face learning environments merge. In this context, we use the term online learning which includes all the different combinations of network learning.

The Covid pandemic forced the educational sector to quickly adapt to the crisis and shift to online learning environments. The teacher's interest and attitude play a major role in the design of the learning environment. Without a high level of competence, ready-made online learning platforms can help you get started, increase knowledge, and develop your own skills (Gebremariam, H.T. 2024).

We recommend using the principle of "less is more" when planning online teaching. The purpose of this is to ensure that the material taught contains core elements to a reasonable extent. Pay attention to the way you implement emotionally rewarding interactions with students, as well as student engagement. At the same time, in online learning, creating a learning environment plays a major role in achieving the desired learning outcomes. Getting change in students' cognitive skills should focus on teaching methods. In the next chapters of this book, you can discover information relating to the technical aspects and services created during the MOPEDE project.

Teachers and trainers can work tri-modally when doing three things simultaneously: contact teaching in a physical space, guiding remote students through video equipment or on the Moodle LMS platform, and recording the teaching situation. This type of instruction is common in the HyFlex model, where students are free to vary the way in which they participate. A virtual environment refers to a simultaneous online teaching or training situation where students and teachers or trainers can interact with each other. (Panopto for Higher Education, 2024.)

INSTITUTIONALISATION OF CHANGE

Based on the online teaching methods described above, reforming teaching from classrooms to online is a big process and may cause great resistance or interest in the new way of working among different staff groups. The task of middle management in all education institutions is to organise the activities of the teachers, trainers and student services and supervise all the staff. Based on the methods described above, the job description of middle managers thus becomes very different. There will be new tasks, responsibilities to undertake, as well as motivating and supporting staff in their work. The progress of students' studies is also the responsibility of middle management. Middle managers must be well aware of the changes in teaching styles and habits of distance learning, they must accept those changes and see their own role in the development process as a supporter of staff and a pioneer in development.

MANAGEMENT TOOLS TO SUPPORT DIGITAL CHANGE IN EDUCATION

In the MOPEDE project, we created four different tools, which we assessed would help managers and trainers to take over the implementation of teaching in a situation that has changed rapidly due to the Covid pandemic. The surprising change facilitated co-operation and promoted the co-operative way of working. The change affected the administration, trainers and students equally, thus having positive effect on reducing resistance to change.

1. ENCOURAGING LEADERS TO DEVELOP THEIR OWN MANAGERIAL SKILLS

The key question is, how do you promote and encourage leaders to develop their own managerial skills? In answer, we will divide this tool into three easy to follow steps. Part one is a series of reflective questions which should be answered individually. Part two then offers a few questions that should be discussed with your staff members. Finally, in Part three a workshop, which can be arranged in any suitable modality, which should be conducted to clarify and consolidate the key findings of the whole process.

With this first tool you can, at the same time, learn to use the online tools that are integral parts of Google Suite, such as Forms, Docs, Meet, and other online collaboration platforms like Jamboard. Using these tools, you can create and share all the instructions and tasks required to meet your goals. All tasks, for example, related to the first two parts of the process can be assigned at once. For each section, you should remember to specify the deadline for the task and clearly identify the folder into which you require the responses to be returned. You can implement the workshop in Part Three of the process using some of these tools depending on whether you choose to have the event face-to-face or online. In both of these scenarios you can use Jamboard to collect, organise and consolidate your findings.

In the MOPEDE project the implementation method was new to members of the TVTI middle management strata, but they were able to put themselves in the position of their personnel in the face of the new situation.

In the first part of the training, the following reflective questions were answered individually.

- How do I create a co-operative working culture?
- How do I support my staff in changing the working culture?
- How do I lead the online learning process?

In the second part, a critical question was devised which was then discussed with 2–3 of their staff members aimed at establishing psychological ownership of the change process. That question was, how should e-learning development be organized in the future?

All experiments were performed and shared remotely using Google tools. For future use, you can facilitate online workshop for managers about the key findings for change management in a similar manner. The title could be: What does it require for online learning development to become the new normal in your daily work?

2. KOTTER'S 8- STEPS PROGRAMME AS MANAGERS' TOOL

This management tool is based on Kotter's Model of Change principles. It's planned to describe the ongoing stage and to create future-oriented solutions for durability in online learning. (8-Steps to Accelerate change in your organization, 2018.)
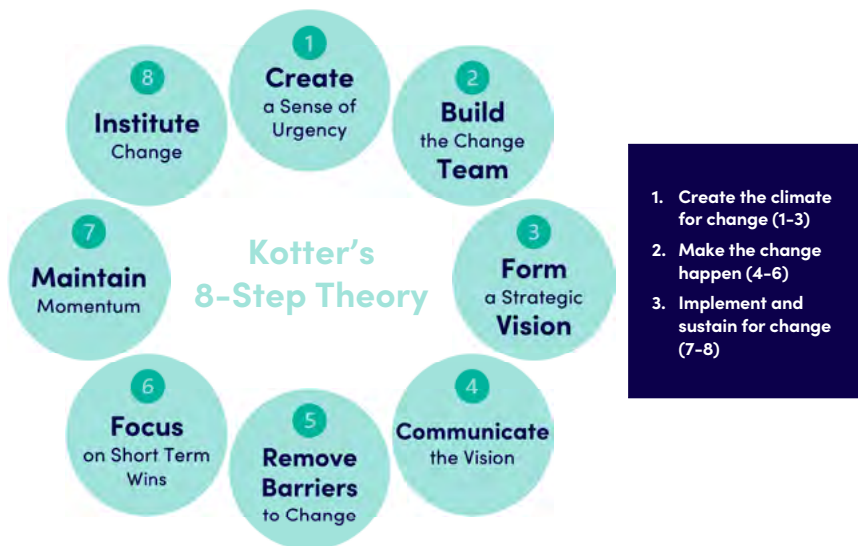

Figure 1. Kotter´s 8-steps programme. Source: Kotter 1996; Kotter 2018.

Kotter helps organizations mobilize their people to achieve change process. Pragmatic approaches with co-operative way of working to accelerate culture like digital transformation – despite barriers. The process is divided in three parts and easy to use divided like that. You can use three different workshops and at last remember to collect the decisions to comply. (See for example: Richesin, 2011.)

1   **Create the climate for change (Kotter's Steps 1–3)**

Create Urgency and explain the necessary of change by highlighting potential threats or opportunities that necessitate action. Build a team of influential individuals who can support and drive the change initiative is crucial. The team should include people with diverse skills, expertise, and positions. Develop a clear vision that outlines the future direction of the organization after the change is implemented to inspire and motivate employees.

2   **Make the change happen (Kotter's Steps 4–6)**

Communicate the change vision to all workers, ensuring that everyone understands the reasons behind the change. Identify barriers or obstacles that may hinder the progress of the change initiative. Celebrate all small victories achieved because these short-term wins help build confidence.

3   **Implement and sustain for change (Kotter's Steps 7–8)**

Ensure that the changes are integrated into the organization's culture and strategy. Update policies and procedures to support and sustain the change in the long term. (Kotter, 1996; Richesin, 2011.)

3. MANAGEMENTS THIRD TOOL

This third management tool aims to strengthen the personnel`s sense of community and highlight different needs, concerns, strengths, and areas for development. The tool also enables staff to discuss and exchange experiences regarding the change. Again, it used by presenting and answering a series of questions and following the rubric.

What is especially challenging me and my team in online learning at the following levels:

1 individual,

2 departmental, and,

3 organizational?

Give the questions to everyone to think about first (15 min). Ask participants to consider the questions also from the perspective of students, their own work and an administrative points of views.

Divide participants into groups and ask them to select one of the group members to act as a scribe. Next, the groups should discuss, select, and write down the three most important development targets for each theme (35 min).

After the discussion period, all groups come together and, in turn, present their results, after that the most important subject areas for development are voted on for each theme (1h, depending on the number of groups). You can use a digital platform like Jamboard to collect the data from all the groups.

After the event, information about the results will be transferred to the administration responsible for implementation.

4. MANAGEMENT'S WORK TASKS TAXONOMY

Our task in the MOPEDE project was to provide institutional support to middle management while they implemented the online learning and teaching strategic development. Paraphrasing Sprague and Watsons Decision Support System, we highlighted middle managers' work tasks in the online learning process by describing their areas of responsibility. It is also useful in supporting a wide range of activities that are goal-directed but not defined in advance as belonging to anyone. (Sprague R.H & Watson H.J. 1993, 2.)

To use this tool, you need to ask managers to make a list of decision-making or managerial tasks within their area of responsibility, related to online learning, at individual, departmental and organisational levels. In this example below we gave 20 examples (table 1), which they could use, but it was not mandatory.

The participants were first asked to discuss the task in groups and based on that determine the following points:

1   what kind of tasks were included in their job description related to their responsibility for organising online learning?
At the same time, they were asked:

2   what the managerial actions in their work are?

3   at which of the three levels did each responsibility relate to?

4   to consider whether they were strategic, tactical, or operational management tasks.

TABLE 1. Management tasks			
Description of responsibility	Strategic	Tactical	Operational
1. Promote online learning			
2. Infrastructure of enrolment systems			
3. Self–development			
4. Financing structures and new financing needs			
5. Taking care of sustainability			
6. Development of the entire higher education institution			
7. Ensuring equal treatment of all students			
8. Continuous development			
9. Future development needs			
10. Students' wellbeing in the institution			
11. Student services organization and evaluation			
12. Quality criteria for online teaching			
13. Curriculum work			
14. Quality criteria			
15. Online teaching modules approval			
16. Online teaching skills development			
17. Students' feedback of their learning			
18. Teachers' workload track			
19. Students' workload in course and in study programmes			
20.Taking care of equality in education *** common responsibility	**	**	**

The workshop (3h) included instructions, presentation of the theoretical background of taxonomy thinking, discussion in teams while collecting and arranging material in tables. At the end a joint review and adoption of the breakdown was carried out. During this workshop, the participants listed the new tasks that had emerged with online learning. They also noted overlaps in tasks and the need to change their responsibilities. It was also interesting that there were tasks that were considered to fall in within everyone´s area of responsibility.

With the help of the co-operative working method, it is possible to detect new areas of responsibility as well as the status of students and the change and growth of the role of student services due the online learning. The strategic, tactical, and operational divisions of management, organization, planning and quality assurance of e-learning made it easier for the community to see the big picture and to place the necessary tasks in different areas of responsibility.

💬 QUESTIONS AND EXPERIENCES OF EDEN KEBEDE

In the following paragraphs we have asked questions and experiences from an institutional leader who experienced this digital transition to online learning.

WHAT DOES ONLINE LEARNING MEAN?

Online learning provides a flexible and convenient avenue for individuals to access educational resources, acquire new skills, and engage in continuous learning from anywhere with an internet connection. The MOPEDE project was hugely contributory in introducing online learning, especially during the challenging times of Covid-19 pandemic, proving its significance. Online learning has emerged as a vital tool in educational institutions like TVTI, which is effectively addressing various challenges that might have been overlooked with conventional teaching and training methods.

Acknowledging the transformative potential of e-learning, the proactive leadership at TVTI, the primary provider of education and training services for TVET educators and industry professionals in Ethiopia, which has eagerly embraced the shift towards online education. This strategic move not only benefits the enhancement of skills and knowledge among TVTI's professionals but also promises a multiplier effect, with these

well-equipped educators passing on this evolution to their students, thereby catalysing a broader educational revolution within and beyond the institution.

While the management's dedication to this educational transition is unwavering, challenges persist due to resistance from both staff and students alike in adopting and engaging with the online learning system. Despite this resistance, the management remains persistent in its determination to implement a variety of strategies and techniques to ensure the successful integration of online learning within the institute.

HOW DID WE FIND OUT THAT WE NEED TO ORGANIZE TRAINING FOR THE STAFF AND STUDENTS ABOUT ONLINE LEARNING?

Many teachers and trainers encounter obstacles when developing digital content for their courses, leading to lower engagement in online learning. This can be attributed to several factors, such as inadequate training, technological barriers, time constraints, and resource limitations. Similarly, students' reluctance to engage in online learning can be attributed to reasons like the absence of technical tools in handheld devices which support online learning, a negative attitude towards online learning, and technological skill gaps.

To address these challenges effectively, it is essential to conduct a systematic needs analysis. By employing various techniques to assess students' attitudes and behaviours towards online learning, we can better understand their perspectives on how online learning can address the current needs and demands of the global educational system. This analysis will help identify the real challenges hindering optimal engagement in online learning, paving the way for tailored solutions that enhance the effectiveness of online education. Therefore, to effectively organise training in online learning, it is crucial to understand the genuine demand that needs to be addressed. This understanding will foster the development of essential skills and cultivate a strong interest in utilizing online learning as a robust educational platform. By identifying and responding to the specific needs and challenges faced by educators and students, the training can be tailored to enhance their capabilities and motivation to engage with online learning effectively. This targeted approach will not only improve the adoption of online learning but also empower individuals to leverage its full potential in the educational landscape.

WHAT KIND OF TEACHING SUITS ONLINE LEARNING?

Online learning is suitable for many different types of teaching methods. Some good examples are listed below.

Personalised learning: it is crucial to utilise online learning when individuals seek to enhance their knowledge and skills by exploring, reviewing, and accessing various online courses. These courses are easily accessible to students at their convenience, enabling them to learn at their preferred time and location.

Virtual Reality (VR) and Augmented Reality (AR): Integrating VR and AR technologies into online learning enhances student engagement, facilitates interactive simulations, aids in understanding complex concepts, and provides practical training in simulated environments. By utilizing different augmented realities and simulations, students can learn specific competencies practically. This teaching method benefits teachers and trainers, students, and institutions by enabling students to practice competencies repeatedly at no additional cost and minimizing physical, chemical, and biological hazards.

Blended Learning: Combining online and in-person instruction offers a balanced approach that harnesses the advantages of both traditional and digital learning environments. If the constituent elements are chosen and designed carefully, this approach can be part of an institution's drive towards eco-friendly, and sustainable education.

Interactive Learning: Through the use of various interactive multimedia resources, students can gain a better understanding of situations and diverse experiences through gamification, video cases, and other interactive tools.

Collaborative Learning: Online platforms allow for collaborative learning experiences where students can engage with peers, work together on projects, and participate in group discussions, fostering a sense of community and enhancing social learning.

Adaptive Learning: Adaptive learning technologies can personalize the learning experience by adjusting the content and pace of instruction based on individual student progress and performance, ensuring targeted support and optimized learning outcomes.

Synchronous Learning: Real-time online sessions such as live webinars, virtual classrooms, and video conferencing enable interactive discussions, immediate feedback, and active engagement between students and instructors, and promoting dynamic learning experiences.

Project-Based Learning: Implementing project-based learning approaches in online settings encourages students to work on real-world projects, apply theoretical knowledge to practical scenarios, and develop critical thinking and problem-solving skills in a hands-on manner.

Peer Assessment: Incorporating peer assessment tools in online courses allows students to provide feedback to their peers, engage in self-assessment, and develop evaluative skills while promoting a collaborative and reflective learning environment.

ICT – WHAT SHOULD BE THERE?

To implement a successful e-learning system, a strong Information and Communication Technology (ICT) infrastructure is essential. The following key components of ICT should be in place to support an effective e-learning environment:

Institutionalized Learning Management System (ILMS): A comprehensive LMS serves as the central platform for delivering online courses, managing course content, tracking student progress, facilitating communication, and assessing learning outcomes.

Handheld devices (such as smartphones): This is the most common challenge. With wider ownership, these devices would facilitate increased levels of access to online learning materials for students as well providing a reliable conduit for communication between students and staff.

Multimedia Tools: Integration of multimedia elements such as videos, audio recordings, interactive simulations, and animations enriches the learning experience.

Internet Connectivity: Reliable and high-speed internet access is crucial for the smooth delivery of online content and interactive activities and services.

Technical Support: Efficient technical support services should be available to address any IT-related issues promptly, ensuring uninterrupted access to the online learning platform.

Data Security Measures: Implementing robust data security protocols is essential to safeguard sensitive student/s and institutional information from cyber threats and breaches.

User Training: Providing comprehensive training programmes for both staff and students on how to effectively use the online learning tools and platforms can enhance adoption rates and overall efficiency.

Collaboration Tools: Integration of collaborative tools such as discussion forums, group projects, and virtual classrooms enables interactive learning and fosters a sense of community among learners.

Accessibility Features: Ensuring that the online learning system is accessible to students with disabilities by incorporating features such as screen readers, closed captioning, and alternative text options is crucial for inclusive education.

Scalability and Flexibility: Designing the online learning system to be scalable and flexible ensures that it can adapt to changing educational needs and accommodate future growth smoothly.

By considering these key components of an online learning system, institutions can create a dynamic and effective online learning environment for their stakeholders. For more information on how TVTI has developed its ICT services through the MOPEDE project, see chapter 4 of this guidebook.

WHAT IS IMPORTANT TO TAKE CARE OF IN INTERNATIONAL PROJECTS?

The transition from conventional teaching to blended and online learning systems presents challenges for countries like Ethiopia, including cost constraints, limited awareness and motivation among educators and students, and insufficient technological skills. To address these obstacles, institutions such as TVTI, operating under government funding, can benefit from collaborating with international projects for support and opportunities. This collaboration can involve:

- **Experience Sharing:** Partnering with international projects allows TVTI to learn from the experiences of other institutions that have successfully implemented e-learning systems. This knowledge exchange can provide valuable insights and best practices for overcoming challenges.
- **Skill Development:** International collaborations can offer training programs and workshops to enhance the technological skills of teachers and students. By equipping them with the necessary competencies to navigate online learning tools and platforms, TVTI can facilitate a smoother transition to online learning.
- **ICT Resource Support:** Access to ICT resources, such as software licenses, hardware equipment, and learning management systems, through international partnerships can alleviate the financial burden associated with implementing online learning infrastructure. This support can enable TVTI to establish a solid foundation for online education.

As the premier institute in Ethiopia dedicated to producing TVET teachers, TVTI's participation in international project collaborations such as MOPEDE is a crucial step towards achieving its vision of institutionalising online learning and fostering a multiplier effect within the education sector. By engaging in global initiatives, TVTI gains access to the best practices, innovative methodologies, and diverse perspectives that can significantly enhance its online learning implementation strategy. Through partnerships like those developed in the MOPEDE project, TVTI can benefit from international expertise and resources to strengthen its online learning infrastructure, curriculum development, and teacher training programmes. This collaboration not only enriches the educational experience for teachers, trainers and students but also positions TVTI as a leader in

educational innovation within the TVET sector. By actively participating in international projects and embracing the opportunities they present, TVTI can accelerate its journey towards creating a sustainable online learning ecosystem that empowers teachers and trainers, engages students, and drives positive change in the Ethiopian educational system. For further detailed information about how to create international project applications, see chapter 1 of the guidebook.

CHANGE MANAGEMENT – WHY DO WE NEED IT – WHY DOES IT EXIST?

In this digital era, the world is rapidly transitioning towards online learning for various reasons. To effectively meet this global demand, it is imperative to promote and implement online learning. Our approach towards its integration should be nurtured and refined, especially within educational institutions like TVTI, which is dedicated to cultivating top-tier TVET trainers and industry technicians. Embracing online learning is essential to ensure our graduates meet international standards.

The management plays a pivotal role as catalysts and change agents in driving the successful implementation of online learning. Their deep emphasis and commitment are crucial in fostering a culture that embraces digital learning methods. By championing this shift, TVTI can effectively equip its teachers, trainers and students with the necessary skills and knowledge to excel in a rapidly evolving global educational system.

WHAT ARE THE BEST PRACTICES WHILE MOVING TO THE MOODLE LEARNING MANAGEMENT SYSTEM?

The rise in online learning's popularity in recent years has been greatly boosted by the Covid-19 pandemic, making it an essential element for many educational institutions. This modern method allows teachers, trainers, students, and schools to easily access relevant content. In contrast, the traditional system faces several constraints.

What sets online learning apart from conventional teaching methods is its capacity for effortless content updates, cost-effectiveness, consistent quality standards, enhanced flexibility in terms of both time and location, personalised feedback mechanisms, and individualised student evaluations.

This evolution in learning methodologies not only ensures adaptability but also fosters a dynamic and interactive educational environment that can adapt to and accommodate the diverse needs of learners.

The MOPEDE project at TVTI has significantly advanced the institute's transition to online learning by introducing the LMS, Moodle. This platform is known for its flexibility, user-friendliness, multimedia support, and robust assessment tools. Over 40 teachers have embraced online teaching, creating course content and enrolling students. This initiative has provided valuable exposure for both students and teachers, equipping them to navigate the evolving educational environment effectively.

WHAT ARE THE NEXT STEPS IN CASCADING?

Cascading in other faculties in general. Futures thinking, what kind of weak signals there might be? – How to be prepared for the change?

The MOPEDE project has set the groundwork for introducing online learning at TVTI, a crucial step in meeting the demands of the digital age. It is imperative to extend and sustain this initiative across all facilities and departments to bring a transformative shift that better supports both students and educators in navigating the complexities of the contemporary global educational landscape.

Despite the evident benefits, a key challenge lies in the lack of motivation among some staff to fully embrace and engage with the online learning system. This reluctance stems from a failure to recognise the system's potential in enhancing learning outcomes, streamlining efforts, and conserving resources. To address this issue effectively, a tailored training programme must be developed to reshape their perceptions and attitudes towards online learning, aligning them with the overarching goal of fostering a more efficient and effective educational environment.

WHAT WOULD HELP IN DEALING WITH THE CHANGE?

Implementing a customised online learning training programme is essential to equip teachers, trainers and students at TVTI with the necessary skills and mindset to effectively utilise digital learning tools. In addition to structured training sessions, facilitating experience-sharing opportunities can be instrumental in fostering a culture of change acceptance. By promoting motivation, cultivating positive attitudes, emphasizing the significance of online learning, and encouraging practical application, these initiatives can drive meaningful transformation within the institution, ultimately enhancing the educational experience for all stakeholders.

LESSONS LEARNED FROM THE MOPEDE PROJECT?

The MOPEDE project effectively introduced online learning to TVTI through various means, such as assigning expert assistance in course design, implementation of the Moodle Learning Management System, a knowledge-sharing trip to Finland, and the provision of financial and ICT materials that promoted the online learning system at TVTI. The project highlighted crucial lessons, including the significance of expert guidance for successful online learning implementation, the value of practical experience sharing among educators, and the essential presence of sufficient financial and physical resources to ensure the smooth integration of online learning at TVTI.

It is built upon the idea of embracing equal access and improve access to high quality education also in peripheral areas. Modernising teaching methods and widening opportunities in peripheries is an important opportunity especially for women and marginal groups, as it strengthens diversifies learning opportunities around Ethiopia. Managers have an assistive role to take care of accessibility, to provide career guidance and professional support for all teachers as well as ensuring they have the tools that they require to complete their allotted tasks.

As a manager, you make new ways of working possible by resourcing the new methodologies. You have to deliver a strategy for how to make online principles clear to staff. You need to make sure that teacher educators and trainers have sufficient and modern pedagogical knowledge and understanding to implement that strategy. You must also support and prepare students for online learning. It requires you to create and deliver a strategy for how to make sure students know how to learn in an online environment, are aware of the institution's policy on the ethical use of artificial intelligence (AI) in education. When students understand their own responsibilities towards their own learning, they are likely to be more actively engaged in studies and thus avoid dropout.

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CHAPTER 3

Creating sustainable blended learning

CREATING SUSTAINABLE BLENDED LEARNING

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Blended learning is an approach that combines classroom and online activities and synchronous and asynchronous work modes. There are various pedagogical strategies for the implementation of blended learning, with the general aim of providing flexibility, accessibility and efficiency for learning and accommodating the individual needs of learners. In TVTI, and within the MOPEDE project, the aim was to enhance the quality of vocational teacher education and to modernise pedagogies and teaching methods through online delivery methods. Thus, in this context, blended learning applies e-learning (online materials and activities) to complement in-class learning and diversify learning modes. Experiences throughout the pandemic emphasised the importance of online learning materials and access to lectures across physical distances, but the implementation of online learning encouraged a shift towards a more learner-centred approach in general.

This chapter summarises the key concepts of sustainable, learner-centred blended learning. First, we will shortly cover blended learning and sustainability in the context of vocational teacher education. Second, we will outline the training process applied in the project: the key principles of the initial training of the e-learning team and the ensuing training process that will cascade the knowledge and skills. We will then introduce the two documents that were created to provide a foundation for quality blended learning, and further pedagogical development: the pedagogical principles and the e-learning standards. Finally, the process of upskilling TVTI's staff will be reflected upon and some lessons learned from that process will be discussed.

BLENDED LEARNING AND SUSTAINABLE CHANGE IN EDUCATION

The aim of the project was to modernise pedagogies in vocational teacher education. The target was to introduce complimentary e-learning practices to classroom learning, and thus create a blended learning approach that would fit the local context. The project was planned during the pre-Covid-19 -period and the outbreak of the pandemic accelerated the goals of the project and created a sense of urgency and motivation.

Blended learning can provide many benefits. Typically, they are outlined as follows:

- **Flexibility:** Blended learning allows for personalized, flexible learning experiences. Learners can engage with content at their own pace, and, with internet access, whenever and wherever they choose.
- **Active learning:** Combining face-to-face and online activities can keep learners engaged, and online work modes are designed for active engagement.
- **Equitable access to multimodal resources:** Online platforms support multiple modalities and provide an access to a variety of learning resources. This benefits learners with diverse learning needs and preferences.
- **Efficient use of time:** Well-designed blended models ensure that classroom time can be used purposefully for interaction and problem-solving, while leveraging digital tools for independent learning.
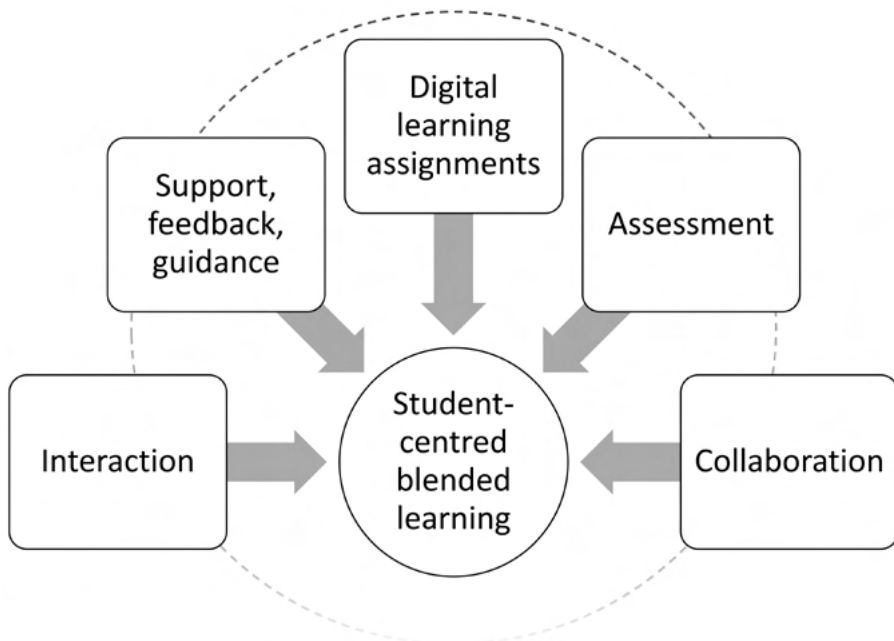
Figure 1. Student–centred blended learning.

Compared to traditional classroom teaching, the design for blended learning must consider two dimensions: time and space. In practice, blended learning is a combination of activities taking place in the same physical space at the same time (synchronously), and activities taking place online (distributed physical location) synchronously or asynchronously. As time and location dependence are not a necessity in the context of online learning, shared time and space become valuable resources for both students and teachers. Thus, this must be considered in blended learning both when selecting the modality and designing the activities for each modality. The choices must be meaningful and beneficial for the learning process. This means, that gradually the introduction of online components will create a shift in the classroom activities as well.

Classroom – Synchronous online – Asynchronous online – Independent study

As the shift towards blended learning can be pedagogically transformative, it can invite educators to redefine the concept of teaching. The aims and pedagogical strategies applied in e-learning are usually based on a learner-centred approach: instead of seeing teaching as transfer of knowledge and the teacher as a sage on the stage, it pushes towards a mindset where learners are active constructors of knowledge, often as a learning community, and the teacher's role is to be the guide on the side. Furthermore, the teacher also becomes a designer of learning experiences and activities (Laurillard, 2012).

BUILDING CAPACITY FOR BLENDED LEARNING: TRAINING AND CASCADING

As the implementation of blended learning does not provide the benefits right at the start of its implementation, it can be deeply transformative to teaching practise. For teachers, it involves learning new skills and approaches, spending time in designing online materials and activities, and embracing a change that at some stages can feel unpleasant. To create circumstances for successful change and sustainable development, the competence building was based on cascading.

Cascading is a method widely used in teacher professional development and educational change (e.g. Bett, 2016; Dichaba & Mokhele, 2017). Usually, it involves training a core team of teachers, "training of trainers", who then conduct training within their own community, school, or department. Cascading

is popular as it can be cost-effective, but it has also pitfalls, one of which can be the dilution of quality along the process. However, standardised tools, practises, and methods can support the process.

In the MOPEDE project, cascading was used as a principal method for creating pedagogical change. Figure 2, below depicts the cascading process from the initial training of the core e-learning team throughout to the final cascading and institutionalisation of e-learning components and blended learning practises.

In practise, capacity building in blended learning progressed in 4 overlapping stages:

1 Baseline research and target setting (experts, project board)

2 e-learning team training (20 trainers across the institute): benchmarking online courses; pedagogical training, technical training; pilot courses in Moodle

3 Formulation of e-learning standards and pedagogical principles for TVTI

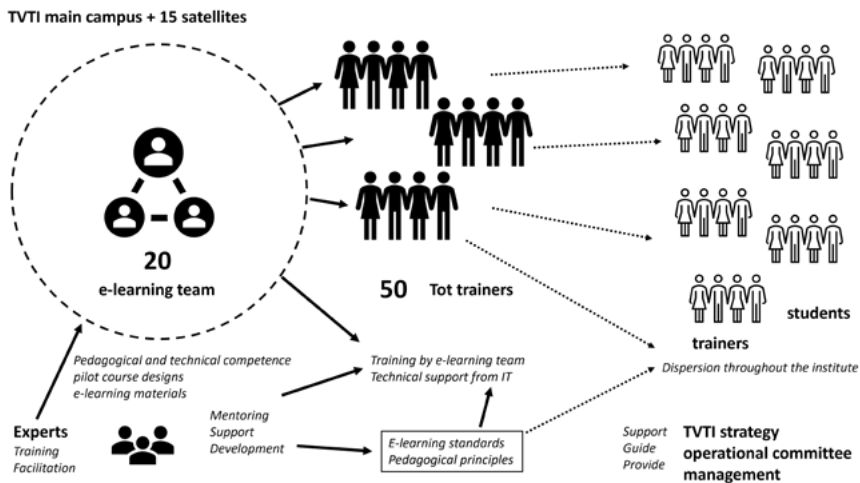**4** Training of trainers (cascading) by the e-learning team; mentored by experts.

Figure 2. Capacity building through cascading.

The core e-learning team in TVTI comprised academic staff across the institute. Key principles of the training were learner-centred blended learning and learning as a community to encourage sharing, collaboration, and mutual feedback. Due to the pandemic, the majority of the training was provided online during a six months period. During the training the e-learning team started creating their pilot courses. In addition, technical training in Moodle was provided locally.

Benchmarking sessions of e-learning practices were organized online, and later also within the Finnish context.

At the cascading stage, mentoring was provided to the e-learning team on effective training methods. E-learning standards and pedagogical principles were drafted to ensure the quality of blended learning, which were also relevant in the cascading process, to avoid one of the pitfalls in cascading, the dilution of quality.

THE BACKBONE FOR QUALITY BLENDED LEARNING: PEDAGOGICAL PRINCIPLES AND E-LEARNING STANDARDS

To create sustainable pedagogical change, ensure the quality of online materials and blended learning, and support the institutionalisation of blended learning in TVTI, documentation crystalising the overarching pedagogical strategy and specific e-learning standards was needed. For this purpose, TVTI's own pedagogical principles and e-Learning standards were formulated. These two foundational documents can be seen in annexes 7 and 8 at the end of this chapter.

Implementing digital learning does not equate to improved education or pedagogical quality on its own. Methods, practices, and approaches are central, and they are often the responsibility of an individual trainer. Well-designed blended learning should support the students' learning process comprehensively and across individual courses. In addition, the digital platforms and technologies affect the affordances available to students in their learning environment.

The pedagogical principles outline the general guidelines for teaching and studying. They summarise the foundation of education at TVTI: posit digital learning as part of the curriculum, define teacher and learner roles in education, guide assignments and assessment, and encourage learning partnerships, continuous capacity building and professional development.

The e-learning standards for TVTI ensure the quality of the online components of blended learning. In this specific context, quality refers to the

e-learning materials' and course environment's ability to support the learning process and add pedagogical value. Added value refers to, for example, online practices relevant to the subject matter and working life, community building, sharing and construction knowledge, or increasing access, inclusion or flexibility.

The e-learning standards can be used as

- a measure of quality for e-learning
- an instrument for peer feedback and training
- a tool for developing digital materials and online components in blended learning
- a framework for collecting student feedback on online learning.

The e-learning standards consist of 13 themes, with clearly stated objectives and guidelines for practical actions that guide how these objectives should manifest during the planning and execution of digital learning.

💬 TRANSITION TO STUDENT-CENTRED BLENDED LEARNING – LESSON LEARNED BY YISHAK DEGEFU

The process of preparing this guidebook was carried out by contextualizing the e-learning standards and pedagogical principles applied by Jamk University of Applied Sciences for its own use. After contextualization, feedback was sought from the e-learning team members and Operational Committee members. We have learned from the standards and principles that the quality of the blended learning materials could be ensured using these instruments. We have checked the blended learning materials we had developed for piloting using these instruments and found out that they are very important to develop quality e-learning material.

The courses we developed for blended learning have been and are still being implemented. We have found this format to be helpful in that it enables students to take responsibility for their own learning. It also helps students to learn at their own pace and convenience. Thus, trainers have ample time during their face-to-face classes to focus on assessment and feedback.

Students have shown mixed feelings towards blended learning. There are active students who enjoy the approach and there are others who do not feel comfortable with it. The latter have been used to the traditional face-to-face teacher-centred approach and have had a hard time stepping

out of their comfort zone. Thorough preparation was made by the institute to enhance the Moodle Learning Management System which has been operational since the onset of the Covid-19 pandemic. The look and feel of the system has been improved and has become more attractive to the end-users. However, the internet connection speed still poses a major challenge in departments and workshops, which needs consideration in the future.

ANNEX 7 – PEDAGOGICAL PRINCIPLES OF TVTI

The table describes the principal objectives included in the purposes and core principles and the way they appear in teaching, instruction and guidance. A separate description has been prepared of the standards for e-learning.

Principle	Practices
1 All TVTI students and partners have equal opportunities to study.	Educational solutions support the learning, expertise and professional development of all students and institutional partners in an equitable manner.
	The guidance support services are available to all.
	The studies are flexibly arranged, and students can choose the most suitable ways to obtain the targeted competence.
	Students can build the skills they need on their life-long learning path, using the services provided by the institution.
	The learning environments and opportunities to participate are barrier-free. The learning environments are open and diverse and equally suitable for students and partners who come from different backgrounds.
2 The personnel have a shared pedagogical understanding, and the competence of the community develops on a continuous basis.	The pedagogical competence of the personnel and the development of a communal way of operating are strengthened by means of regular training, shared forums and online meetings, among other things.
	The personnel and students are provided with induction on the pedagogical principles by the schools and development services.
	The implementation of the pedagogical principles is monitored by means of student feedback and any shortcomings are actively corrected.
	The feedback data collected from the students and other information produced by the quality system is systematically utilised in the development of education and training.

Principle	Practices
3 The student is the owner of the learning process.	The students have an opportunity to personally plan the targets and content of their studies.
	The studies are primarily based on the students' active engagement. The students are personally responsible for their learning in accordance with the jointly agreed-upon intended learning outcomes.
	Self-evaluation is an essential part of the assessment of learning and is also used as evaluation material in competence evaluation.
4 Teachers and instructors are learning process enablers and supporters.	The teachers and instructors give constructive feedback throughout the learning process. Courses are developed during them based on the feedback received.
	The teacher acts as a coach who supports the student's learning process. The teacher defines the competence needs in collaboration with the student, instructs the student's individual learning process and evaluates the development of the student's competence.
5 The structures and learning environments that enable studying are flexible and appropriate.	The students can pursue part of their studies irrespective of place and time when working with online materials.
	Blended learning is meaningfully designed, acknowledges the infrastructure available to the students, the learning objectives of the programme, and the strengths of online and face-to-face learning modes.
6 The curriculum is competence- based.	The working-life relevance of the training has been ensured.
	Degree programmes and other study modules have clearly defined learning outcomes that meet the National Quality Framework criteria.
	Course learning outcomes have been defined in terms of concrete competences.
	The curriculum will be organised into tasks and the procedures defined to complete those tasks.

Principle	Practices
7 Assessment is constructive and criteria-based; the student is aware of the assessment criteria.	Competence evaluation is focused on the competence defined as the learning outcome of the course concerned. Students get feedback throughout their learning process and utilise it in support of professional development as part of their personal learning plan. Self-evaluation and peer review and feedback from the working life cooperation network are part of the learning assessment. Students collect the competence accumulated during their studies in their portfolio. The student and all the parties involved are aware of the assessment criteria that the assessment decision is based on. Assessment decisions are made on an equitable basis.
8 Learning is based on meaningful learning tasks.	The learning tasks are understandable, relevant and well-reasoned. Learning tasks are carried out independently, in groups and in the form of broader working life cooperation projects. The student has the opportunity to influence the learning task content and the methods with which the learning tasks can be duly completed within the given time limit.
9 Learning partnerships are utilised in a purposeful manner.	The implementation of the education and training supports the student's integration in working life. Partners participate in the development of the training and, to the extent possible, in the planning and implementation of learning assignments. The staff work in close cooperation among themselves and with students and partner organisations. The cooperation benefits all the parties involved.
10 Digital technology is used in a versatile way in the learning process.	The quality criteria for online pedagogy are duly achieved in online teaching. Various tools that enable cooperation and interaction between students are utilised in a purposeful way in the implementation of courses and in the completion of learning tasks. Critically selected online materials are used as sources of learning.

Principle	Practices
11 All learning materials provided support the diverse learning needs and talents of the students.	Learning materials are relevant, appealing and support the students' needs and talents. Learning materials, including online learning materials, are accessible, usable and up to date. E-learning standards are adhered to in online environments and materials.
12 Guidance is need-based and available throughout the studies.	The students have versatile and need-based guidance services at their disposal throughout their studies. Guidance services between individual institutes of higher education is agreed upon with the partner institutes concerned. The guidance supports the student's graduation within the recommended period of study. The students' individual needs for support are considered in the preparation of their personal learning plans and in the targeting of services.
13 The student has an opportunity to learn in RDI and service business.	RDI and service business can be included as part of various courses. The implementation methods are described in the course description. The results of RDI activities and new research-based knowledge are integrated as part of the teaching and curricula in a purposeful way. RDI and service business are implemented flexibly by making use of the expertise of JAMK's expert teams, partners, students and customers.
14 Studying and teaching aim at long-term competence development based on research-based and foresight knowledge at different career stages.	A barrier-free learning path that enables lifelong learning is secured for the students. The studies implement the student's personal development and career plan. Anticipatory and foresight knowledge is brought up in the orientation of studies and in their guidance. Learning focuses on theoretical and practical knowledge that is needed in working life.

ANNEX 8 – E-LEARNING STANDARDS OF TVTI

The e-learning standards for TVTI outline the distinctive aspects teaching and learning in digital environments. This is key to quality blended learning. The key themes, objectives and practices are presented in the table below.

Theme	Objectives	Practices (actions)
Pedagogy	The course follows the pedagogical principles of TVTI. Suitable pedagogical models, modes of work and teaching methods are applied.	Teacher designs a course that supports learning and the attainment of the intended learning outcomes. Blended learning is designed in a way that builds on the benefits of both online and face-to-face learning. The use of digital tools is relevant to pedagogy and to the professional field.
Course description and basic information	All information that is essential for the completion of the course is disclosed on the learning platform. The information is consistent with the course description.	The purpose and objectives, learning outcomes, practices, working modes, assessment criteria, contact information and schedule are clear, up-to-date and easily accessed on the learning platform. The course timeline and relevant steps are described from the students' point of view.
Structure and functionality	The structure of the course is clear and functional.	Teacher designs a course structure that supports the learning process and explains the structure of the course to the students. Teacher names the content items, e.g. folders, pages, videos, assignments and files clearly and ensures their technical functionality. Teacher uses visual and multimodal elements to support the content.

Theme	Objectives	Practices (actions)
Online tools	Online tools are appropriate and support learning and attainment of the intended learning outcomes.	Digital tools supported by TVTI are preferred. Students are not required to log in to external services. Teacher selects online tools that align with the chosen pedagogical approach and the intended learning outcomes. Digital tools and resources that are relevant to the professional field are applied. Teacher ensures that instructions and technical support are available for the selected tools.
Materials	Learning materials support the attainment of the intended learning outcomes.	Teacher provides a clear and organized structure and introduction for the materials online. Compulsory and additional materials are clearly differentiated. Teacher and students provide and produce materials that are up-to-date, accessible, multimodal (e.g. text, image, video, sound) and in compliance with the copyright laws. Materials and activities are interactive, use various work modes, and encourage active learning.
Interaction online	Interaction is meaningful and relevant online.	Teacher plans meaningful and appropriate social interaction for the online course. Students have opportunities for interaction, collaboration, peer learning and sharing of experiences. Students participate actively according to the instructions.

Theme	Objectives	Practices (actions)
Learning activities	Online learning activities and assignments are relevant and support the learning process with regard to students' diversity.	Teacher explains the purpose, intended learning outcomes, work modes, assessment criteria and timeline of the activities and assignments.
		Teacher considers the special aspects and preconditions of digital environments when designing learning activities.
		Teacher considers the skills, equipment and the infrastructure available to the students when designing and instructing learning activities, tasks, and assignments.
		Students engage in the use of available technologies and resources.
Guidance and feed- back	Guidance and feedback are continuous and timely.	Teacher provides information and guidance prior to and throughout the course.
		Teacher gives feedback to the students throughout the course.
		Teacher indicates the persons responsible for, modes of, and timeframe for guidance and feedback, and abides by them.
		Teacher uses the learning analytics tools on the online platform to guide and support the students' progress.
		Students participate in the guidance and feedback processes actively.

Theme	Objectives	Practices (actions)
Assessment	Assessment is transparent and versatile and supports the development of reflective skills.	The assessment criteria and activities are aligned with the intended learning outcomes of the course. The assessment criteria and assessment modes are explained to the students. Students have opportunities for self and peer evaluation.
Course development	The course development is continuous and well planned.	Students are provided with the possibility to give feedback and ask questions throughout the course. Students are encouraged to give anonymous feedback on the course. Teacher engages in continuous development of the course and materials, based on feedback and their own progress in digital teaching competence.
Individual learning needs	Students' individual learning needs are acknowledged.	Students have an opportunity to discuss the activities and contents to support their personal learning goals and needs.
Support services	Support for pedagogical and technical challenges is available.	Teacher and students can contact TVTI Helpdesk services for technical advice in accessing the platforms and resources. Links to relevant support materials and instructions for students are provided. Teacher colleagues and the e-learning team support the teachers in the design of the online courses and provide feedback to ensure the quality of the digital materials and courses. Support materials (e.g. guidelines, standards, instructions).

Theme	Objectives	Practices (actions)
Students	Students have the capacity and skills for digital learning.	Students take responsibility for their learning.
		Students are responsible for providing themselves with functional equipment necessary for studying online (e.g. headset, smartphone, computer).
		Students are responsible for developing their capacity and skills for digital learning.
		Students are provided with the instructions and support they need, in order to use the digital tools and environments and to engage in digital practices.
		Student capacity for digital learning is continuously developed and supported.

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CHAPTER 4

Technical requirements and processes
for digital transformation

TECHNICAL REQUIREMENTS AND PROCESSES FOR DIGITAL TRANSFORMATION

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This chapter aims to clarify the ICT related outputs of the MOPEDE project. In that project, Output 1 dealt with ICT infrastructure and its upgrading. Output 2 dealt specifically with the e-learning platform, otherwise referred to as the Learning Management System (LMS), and its effective use. The overarching aim of the MOPEDE project was to modernise TVET teacher training in Ethiopia. One aspect that contributed greatly to the success of the project was the existing good ICT infrastructure. We introduced and developed robust management policies and procedures to effectively administrate the resources which the in project developed thereby establishing good practices for asset management the future. In this chapter of the guidebook, those aspects related to technical requirements and processes that were developed to facilitate digital transformation, are explained from the perspective of the users. While the information presented in this chapter is contextualised in its description of TVTI's development, the same requirements and process can be applied in any other institution.

ICT INFRASTRUCTURE, EQUIPMENT PROCUREMENT, HELPDESK, AND CYBER SECURITY

This section focuses on resources, how to procurement equipment in TVTI, the helpdesk service, and cyber security.

RESOURCES

The current hardware and software resources are explained below. TVTI currently operates the following hardware resources to provide online services:

LEARNING MANAGEMENT SYSTEM (LMS) – MOODLE

- Physical Server
    - Server model
    - Model: PowerEdge R740xd
    - Processor: Intel(R) Xeon(R)Gold6234 CPU @ 2.60GHz

- Guest OS or Virtual server
  - Microsoft Windows Server
  - Compatibility ESXi 7.0 U2 virtual machine
  - CPUs 18
  - Memory 32 GB
  - Virtual Desktop Infrastructure VDI
- Software
  - Moodle 3.11.11 (Build: 20221114) version can be updated.
  - MS Office 365
  - MS Teams
  - Study Admin System or Registrar System
- Network
  - Fiber optics, with 1.5Gb of internet connection internally
  - Fiber optic connections from Datacentre to all campus buildings
  - Lan Cable network in academic and administration buildings,
  - Wireless network (Wi-Fi) around all campus buildings including dormitories.

USERNAME AND PASSWORDS

To gain access to TVTI's ICT services, such as email and the LMS, all users must have appropriate usernames and passwords in accordance with TVTI's policy. As a member of the TVTI community you will be granted user credentials in one or other of the following two categories:

- Staff category
  - Staff members will apply for user accreditation to the ICT Directorate for permission to access online services.
  - The ICT Directorate staff will verify the authenticity of the staff and create new user and notify accordingly.
- Student category
  - The student must be formally registered to student admin system (SAS) or called registrar system with in TVTI and be included in the institution's list of registered students.
  - The course teacher from the student's department will submit a bulk list of all their students' names to the ICT staff in .csv format.

– The ICT Directorate will create user accounts for all students according to the bulk list and enrol them onto the course that they will take.
– The account list of students will be returned to the course teacher, for distribution.

DATA STORAGE

Data storage resources for all ICT users are as follows. The member of the community can utilize network drives to save their work.

- In the Institute the cloud based Office365 drive provides 1Tb of cloud storage for each user.
- Users can simply drag and drop files into their account where it will be saved automatically.
- When using the LMS, students' submitted assignments will be stored on the LMS platform.

ICT CLASSROOMS

ICT classrooms need ICT capacity in terms of both hardware and software. Here we explain how to get new hardware and software for your classrooms through the procurement process.

1 Every procurement request must be submitted by the respective lab assistant and department head using the institution's procurement portal.

2 Once a request for procurement has been submitted, it will be subjected to an approval process by the procurement office.

3 If approved and budget funding is allocated, the request will be processed by the procurement office following the necessary government procedures.

4 Once the procured item has been delivered it will be included in the institution's register of equipment before being issued to the requesting department.

ONLINE LEARNING TOOLS

Online learning tools are necessary resources for running blended or e-learning. You can acquire these tools as a teacher as follows.

You will find that certain online learning tools, for example, Articulate 360, Rise 360 are licenced online digital course development tools, which require yearly licence. Microsoft Forms, for surveys and online questionnaires is included in Microsoft 365 free in the institutional portal. H5p and other Moodle tools are included in the Moodle LMS.

If the tool you require is not available in the institute portal or LMS, you should search online for which you require. Please remember to check with the ICT directorate before installing any of these tools onto any computer.

PERSONAL DEVICES AND SOFTWARE AS AN EMPLOYEE

If you need a device, for example a laptop, a mobile phone or other hardware, or simply a specific piece of software for your work, you must submit a request through the procurement portal. Such requests will be processed in the same manner as described previously in this chapter for classroom equipment. Updates of software are usually automatic and occur once in a week.

If a device is too old to process automatic updates, it mostly means that it is time to replace it. In that case, you should follow the procurement process as described. When your new device arrives, old devices must be returned to the institute store with the return request form. These procedures were in place in TVTI at the time of writing this guide in 2024. As with all such procedures, they are subject to periodic review and therefore may change without notice. Remember to check the institution's intranet for procedural changes at the appropriate time. If in doubt, check with the ICT Directorate by raising a ticket in the Helpdesk.

CYBER SECURITY AT TVTI

Cyber security is crucial because it protects all categories of data from theft and damage. This includes sensitive data, personally identifiable information (PII), personal information, intellectual property, and governmental and industry information systems.

You can make your ICT use more secure in the following ways. There are redundant firewalls for load balance and failover protection. The network-based firewalls are able to monitor communications between TVTI computers

and outside sources, as well as restricting certain websites, IP addresses, or other services. Below the basic instructions can be found for making ICT use secure:

Instruction 1: Ensure your virus-protection software is up to date. Virus protection is installed in every institute computer and should update automatically. If in doubt, contact the ICT Helpdesk.

Instruction 2: Change your password(s) regularly and always use a strong password. It is highly recommended that users adopt different passwords for different services.

Instruction 3: The password strength is forced by the system. A strong password must contain a combination of at least 8 characters, including lowercase letters, uppercase letters, numbers and special symbols.

GETTING HELP

Sometimes you will encounter problems when you use ICT. For this reason, the helpdesk service has been created in TVTI. There are three reasons behind this logic, and they are:

- Reason 1: The best expertise is available in the ICT Directorate. If one expert operating the helpdesk service does not know about the problems, they can forward the ticket to someone who knows better.
- Reason 2: It is a tool to measure customer satisfaction. Customers should always have a way of rating the helpdesk service and giving feedback to improve processes.
- Reason 3: Instead of having to track down someone from the ICT Directorate to get help, employees can simply submit a ticket through the helpdesk team using a customizable web-based form.

To get help in solving problems or to gain new knowledge of how to overcome such there are two steps which should be followed.

1. The Best Practices / Frequently Asked Questions (FAQ) page

- The FAQ page can often provide solutions to problems, which users can solve themselves. Before initiating a helpdesk ticket, users should go to the page to try to find a solution they can use.
- The ICT Directorate staff is responsible for collating the information on this page and keeping it up to date. The page includes a useful classification of known problems and a search feature.
- If a user cannot find a solution to the problem on the FAQ page, they should then go the Helpdesk.

1 Helpdesk

- Initiate and submit a ticket, briefly stating the problem.
- After the ticket has been submitted, you must wait for the response from the ICT Directorate.
- All correspondence relating to your ticket will appear in your email.
- The ICT Directorate staff will handle all requests on the helpdesk system.
- A technical support team member will be assigned by the Helpdesk Master.
- The nominated technical support team member will respond to your ticket and devise a technical solution and give you corrective instructions as necessary.

MOODLE LEARNING MANAGEMENT SYSTEM (LMS)

Every teacher needs to set up their own course(s) on the LMS. Here are the instructions to do that.

- The teacher will request a course copy or a new blank course from the LMS administrator.
- The admin will create or copy the course according to the preference of the teacher and enrol the teacher onto the course.
- The teacher will find the newly created course in their dashboard.
- Courses have been created according to the policy standards of the institution and are based on the institute's general template which creates a standard appearance for all courses.

Sometimes a teacher will need to modify their course and they automatically have the rights to be able to do that, within the bounds of the institute's general course template, when the course is created on the LMS. By turning on the edit function, they can edit the content of the courses, by uploading or creating new digital content.

Once a teacher has been assigned to a course in the LMS with a teacher role, they will have full privileges within that course environment allowing them to monitor and manage the course and their students' progress. They can view the learning analytics to monitor the progress of students in multiple ways. Moodle shows last logged in time, login activities and completion progress for each student, with check marks and results of each assignment. Additionally, each student's participation in self-directed learning and peer-to-peer learning events is visible.

Students enrol onto courses in Moodle as explained earlier in section **"Username and passwords"**. The teacher will give the students a short orientation and, in the case of first registration, issue their usernames and passwords. Students will login to their account in Moodle and change their password, before being able to attend the course.

Students must be active in Moodle to get full benefit from it. The basic tasks for the students are:

- Students are expected to check announcements for information and posted notices frequently in each of their own courses in the LMS.
- Students are expected to attend lessons and take part in all course-related activities, whether synchronous or asynchronous, and submit all assignments before the given deadlines.
- Check attendance lists, if available, to ensure their own attendance has been recorded correctly.
- Engage actively in the course forum and discussions.
- Complete the course.

STUDENT ADMINISTRATION SYSTEM (SAS)

The purpose of the Student Administration System (SAS) is for teachers and other personnel to manage the processes involved in students' enrolment and grading. The primary tasks within the SAS are:

- The SAS or registrar system is an isolated system for security reasons. It is used for student grade record keeping, and course assignment.

- A course is assigned to the department according to the academic curriculum; departments select and assign teachers to deliver the courses.

A teacher manages a course and its enrolment in the SAS as follows.

- Enrolling students to the course in the registrar system is the duty of the registrar (institute administration).
- Enrolling students to the LMS is the mandate of the LMS admin.
- The teacher's mandate is to conduct training, assess the trainees, and report the grading to the registrar.

Access to SAS is as follows.

- Teachers have access to insert grade report to their assigned course in the system and this task must be completed before a set deadline to facilitate approval by the registrar.
- Teachers have access to view the enrolled students in their own course in SAS.4.
- Students have access to view their own grade report in the system.

SERVICE PORTFOLIO CONTENT

The Information Technology Infrastructure Library (ITIL) service management approach applied to the ICT environment in TVTI's context is as follows. ITIL is based on the service view which means that we should define ICT services needed for the operations of the institution.

A service strategy means that all ICT services have the fit into the operations of an organization (company, public organization etc.), in this context, TVTI. A service portfolio describes what the most important ICT services that you can access as a trainer or an employee at your institute, and the best way they can be supported by ICT services.

The service strategy needs continual development. Each key service has a nominated member of staff who is responsible as the product owner. Each product owner chairs a change advisory board, which includes representatives of the user group, the process owners. The meaning this kind of organisation is to ensure that the perfect match between the basic operations required by faculty members, the process owners, and the technical operations of the ICT Directorate, the product owners, remains in balance.

One of the key points in the process was defining the key services which are the core of the service portfolio at TVTI. Early in the project, we defined four key services. These are:

- Meeting service (Google Meet and Zoom)
- Learning management system (Moodle)
- Collaboration platform (MS Teams)
- Course and studies management platform (Study Admin System).

In the ITIL context, continuous development of the key services and their administration is essential At TVTI we have decided these practices and procedures as follows in the simplified way.

- The Director of ICT Services and the Senior ICT Technical Expert form TVTI's Change advisory board.
- Contact persons from different departments represent the users of each product.
- According to ITIL principles, best practices are published widely throughout the institution providing guidance to all users.

💬 LESSON LEARNED FROM MOPEDE BY NAOL ANBESIE

The current technical capacity of the ICT Directorate should be sufficient to support e-learning activities in the short-to medium term. In the longer term, as uptake of online learning increases, users will become increasingly frustrated if the technical capacity is not developed. This will also lead to a drop in user engagement as well as dissatisfied students. It is essential, therefore, to ensure that hardware and network resources are constantly updated. In this way the smooth use of resources and high user engagement and satisfaction will be achieved.

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This guide is produced as part of the Capacity Building for Modernizing TVET Pedagogy in Ethiopia project (MOPEDE, 2020–2024). The project introduced online learning in Ethiopia's Technical and Vocational Training Institute, with its 15 satellite campuses.

This guidebook summarises the key conclusions of the project and provides practical guidance for introducing and institutionalising online learning. It covers essential aspects of the process: the project application and administration, change management as the cornerstone of sustainable digital transformation, staff professional development and quality measures in blended learning, and the technical requirements and support processes needed for effective online learning. All in all, this guidebook paves the way for anyone working internationally with digital transformation in education.

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