VidenCenter

The National Danish Knowledge Centre of e-learning

Formative research on e-learning certification

Report on formative research associated with the pilot project

Certified e-learning

The National Danish Knowledge Centre of e-learning

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preface

For several years now, the offering of vocational e-learning courses has been rising. As a result thereof, Danish Vocational Colleges and Upper Secondary Schools (DEG) has invited the colleges and schools to trial a newly developed certification scheme. A pilot project was accordingly carried out in the second half of 2018, encompassing 23 e-learning courses. I have conducted formative research in connection with the pilot project, and the purpose of this report is to disseminate the key findings from this research.

It is no accident that I use the term *formative research rather than assessment*. The aim of an assessment is to determine the value of the certification process, which is the responsibility of the involved schools and colleges. The purpose of this formative research is, among other things, to produce new knowledge about how one can ensure the quality of e-learning by improving the educators' opportunities to get feedback when they develop and determine the utility of e-learning courses.

For example, educators can obtain feedback that would allow them to create consistency between the students'/course participants' prior learning, objectives for their learning outcomes and decide on the types of organisation, activities and assessment for each course. Therefore, the purpose of the formative research is also to produce new knowledge about the perceived utility for educators of getting formative feedback on their planning and descriptions of vocational e-learning courses.

Part of the formative research has entailed the collection of information through document analyses of the certified course descriptions. Additionally, I have obtained information through interviews with representatives for the involved educators and managers. I would like to sincerely thank every educator and manager who took part in this study.

I am especially grateful to centre manager Michael Lund-Larsen and Senior Adviser in e-learning Daniella Tasic Hansen and Søren L. Jørgensen from the National Knowledge Centre for E-learning (*Det nationale Videncenter for e-læring*) for developing and piloting the certification scheme - as well as for having made this formative research possible.

I would also like to sincerely thank senior advisers Anne Wieth-Knudsen and Stine Sund Hald as well as Educational Adviser for vocational adult education and training (VEU) Lotte Mollerup at Danish Vocational Colleges and Upper Secondary Schools (DEG) for their contributions to the development of the concept for the formative research.

Bent B. Andresen

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Purpose

In this section, I address the purpose of the formative research. I will start by describing the research subject, i.e. the pilot certification scheme.

The pilot certification scheme

Certification of education and training is not a new concept in Denmark or other countries, as several forms of certification and accreditation already exist, but certifying vocational courses offered via e-learning is a new development. In this context, e-learning is treated as an overarching term which encompasses blended learning as well as purely web-based learning (distance learning).

The pilot certification scheme covers descriptions of the objectives, content and organisation of e-learning courses, taking into account the participants' prior learning (Box 1).

Box 1. Pilot project on certification of courses taught through e-learning

A pilot project on certification of vocational e-learning courses was carried out in 2018. Essentially, the purpose thereof was to improve the quality of the colleges' and schools' offerings of e-learning options and, more specifically, to collect experiences from a certification scheme. The scheme is a supplement to the colleges' existing quality assurance with a focus on organisation, as the existing quality assurance systems are more geared towards the completion and assessment of courses taught through e-learning.

Among other things, the scheme is meant to ensure that there is a sound and consistent organisation of e-learning courses in relation to the participants' prior learning and learning outcomes. This has been described in more detail at:

http://evidencenterinfo.dk/certificering-af-e-laeringsforlob/#1490091013521-92fc3c3c-da7b43ad-b6f6

The pilot project has been executed through the organisation Danish Vocational Colleges and Upper Secondary Schools (DEG) inviting the colleges and schools to participate, and the certification was carried out by eVidenCenter, the National Knowledge Centre for e-Learning.

All the colleges and schools that participated in the project have received feedback on submitted proposals for course descriptions with a view to strengthening the developers' e-didactic reflections, internal discussions and a common technical jargon on e-learning courses.

Afterwards, it will be determined whether to make the scheme permanent.

Guidelines and a digital template for describing a course for certification (hereinafter referred to as *the template*) have been drafted in connection with the certification scheme. It encompasses the following:

- terms of the course
- learning objectives of the course
- participant's prior learning
- organisation of the course
- activities and learning methods
- assessment of the course

These main themes have been established on the basis of an analysis of the main findings of the research on what factors play the greatest role in relation to the participants' learning outcomes. For obvious reasons, a vocational college cannot be certain how participants will benefit from a course when the starting point is these main themes in connection with planning an e-learning course, but the likelihood of them benefiting more from the course is generally higher than if one were to plan the course in a less systematic manner or disregard some of the themes.

The template is also designed with the aim of being relatively simple to use for educators who have previously worked with similar templates, for instance in connection with their institution's local curriculum (*lokal undervisningsplan*, or *LUP*)[1] and corresponding templates to describe the flow in e-learning courses (Box 2).

Box 2. Statement from a participant in the pilot project

"Two years ago, the retail division of a vocational college implemented a flow description containing six fields that correspond exactly to the certification template. (...) They use it as a management tool in relation to their clients.

They are very client-focused. They need to be 100% certain about what they have agreed with their clients, who receive the flow description so they can see what they are taught in the courses. There are some HR people in the clients' organisations who need that information. That's why the flow descriptions are extremely important to them. The companies and teaching method require that the participants know in advance what they're getting into. (...)

They haven't changed anything at all in the courses they have gotten certified, but they have elaborated a bit more than usual. They have also elaborated more on the target group than in their own templates, i.e. their normal flow descriptions, and they have included the learning objectives by going a little deeper into what they do."

[1] https://uvm.dk/erhvervsuddannelser/skoleudvikling/lokale-undervisningsplaner

Delimitation of the pilot project

In the pilot project, there is a focus on certification as a practical tool to enhance the quality of courses offered as e-learning. There is a focus on certification as a means to develop students'/course participants' learning conditions, but not as a management tool. More specifically, the pilot project is delimited in relation to the framework conditions such as resources allocated to development and carrying out of e-learning courses as well as the quality of specific digital tools, platforms and materials.

Since the certification in the pilot project is based on descriptions of what the school and educators intend to do, it is also delimited in relation to the actual realisation of e-learning course offerings. More specifically, the pilot project only covers the first part of the process from when a student or course participant registers for an e-learning course and up to their completion of the course. For example, it does not include observations in digital learning environments or analyses of specific learning resources or participant products. It also does not collect information about the effect of the certification among students/course participants. Each vocational college would therefore be well advised to take their own initiative in relation to assessing the ways in which the certified courses help the students/participants and the results thereof.

Purpose of the formative research

The purpose of the formative research is to identify the perceived utility to educators and management of the certification and the associated dialogue with the external examiners institution (eVidensCenter).

The formative research must extract lessons from - and the consequences of - the first certification initiative. This includes creating new knowledge about the template that was used to describe the choice of organisation, activities and assessment of e-learning courses. In connection with this, the intent is also to identify how the target group's differentiated prior learning is taken into account when planning e-learning courses.

In both the certification scheme and formative research, the focus is on *why* certain choices are made and not *what* choices are made. The intention is to create knowledge about the need for and experiences with getting inspiration and feedback in this area without challenging the colleges' and schools' freedom of choice and the educators' freedom to choose their own educational methods in relation to organising e-learning courses.

The overarching problem formulation is as follows: Through certification, how can providers of e-learning create coherence between the participants' prior learning, objectives for their learning outcomes and choice of forms of organisation, activities and assessment?

With a view to addressing this problem formula, the following has also been examined:

- the intended and unintended consequences of the piloted certification scheme
- how the colleges and schools can develop the quality of their offering of e-learning courses in the future.

Research design

As part of the formative research, a limited document analysis has been carried out on the descriptions and comments on the first 23 certified courses (see summary form in Annex 1).

In addition, five interviews have been conducted with representatives of the involved educators and managers about their experiences with the certification thus far. A total of nine participants in the pilot project (representing 18 certified courses) were interviewed.

In the interviews, a recurring theme has been the perceived utility of the certification among the participating educators and managers in the certification scheme. It includes the perceived utility of getting feedback on descriptions of prior learning for potential students/course participants and their learning objectives, with a consistent use of terms that are understandable to students and course participants. It also includes the perceived utility of using the template with a view to ensuring consistency between descriptions of the target group's prior learning, expected learning outcomes and the course's types of organisation and assessment.

The need for e-learning certification

This section provides answers to why e-learning certification is a well-suited means for educators at vocational colleges to develop digital judgement and competences in relation to organising e-learning.

The need for digital judgement

When educators at vocational colleges practice their profession, they collect experience planning, completing and assessing different types of courses, and today, these experiences are characterised by digitalisation. A more detailed description of digitalisation efforts is hardly necessary, but it should be mentioned that, all else being equal, it contributes to raising requirements in relation to the educators' professional judgement.

It is no longer sufficient for educators to consider and explain why and how they intend to organise, complete and assess learning activities. As a consequence of digitalisation, they are now also expected to consider why and how students/course participants can best use IT to promote learning. This creates a need for educators to develop their capacity in this area.

The requirements for digital judgement have also been increasing for several years. For example, today educators are expected to share content in 'the cloud', a metaphor for the Internet, which puts several different platforms at disposal for internal communication and sharing of relevant educational content. Previously, educators were often given a thorough introduction to the use of the schools and colleges' own servers and intranet, whereas today, it is quite often up to them to determine how best to use digital sharing tools and store/disseminate material in the cloud.

For instance, it is often up to the educators to determine themselves where and how best to share course-related content, including creating and using folders with material, assignments uploads/responses, notes, etc.

Furthermore, there has been a fundamental change in the vocational colleges' learning environments. In an early stage of digitalisation, separate facilities were set up with computers for student use on school premises. Today, however, this has transformed into a 1:1 strategy where students and course participants can use their own digital laptops or tablets in relation to accessing the cloud. This transition has occurred over a relatively short period of time following the introduction of the '*bring your own device*' (BOYD) principle, which Denmark was the first country in the world to introduce in the general area of education (Søby, 2013).

This has contributed to changing the framework conditions for teaching so pervasively that it can be considered a *disruptive innovation* (Christensen, 2006). Essentially, this

entails a break with existing fundamental notions of common activities in the educational institutions' learning environments such as those relating to dialogue and cooperation.

In the wake of such breaks follows a phase where the vocational colleges' educators and management can only act on past experiences to a limited extent. They must first gain experience with how they can best carry out the colleges' core responsibility within the context of changed framework conditions. Regardless of how they are inspired to take advantage of this form of innovation, they must still independently develop completely new procedures to realise the learning potential in 1:1 learning environments.

Unsurprisingly, this has resulted in a relatively major need for continuing education regarding "the use of IT as a pedagogical tool" for a period. For example, half of all educators in upper secondary and vocational post-compulsory education lacked continuing education in this area a few years ago, and the extent of continuing education and training in Denmark has been smaller than in other countries (EVA, 2014a). Educators have therefore undergone competence development in recent years. For example, some educators received continuing education in the course "Digital technologies in vocational education and training".

In the higher levels, there is a focus on developing the competences of educators. For example, the assessment criteria in adult vocational training (AMU) courses in 2019 include "the educators' qualifications, academic specialisations and the adult educational environment" as well as "plan for upgrading of educators' skills" (Danish Ministry of Education, 2018b).

Who and what gets certified?

For obvious reasons, helping describe courses for certification can contribute to strengthening educators' qualifications. When a certified course that is organised as e-learning is approved, it becomes perceived as a stamp of quality (Box 3).

Box 3. Statement from a participant in the pilot project

> A participant "likes that there will be a sort of stamp of approval, because otherwise it's difficult for the users to know what they have to do. Where are you on the quality scale? For companies, figuring that out is a jungle. It's a really, really good idea".

The certification is not merely a form of recognition of the college's offering of e-learning courses, but also the educators' efforts and qualifications in the area of e-learning. It essentially has a knock-on effect on those educators who have been responsible for developing courses. For example, one manager at a vocational college noted that the certification contributes to continuing education of the involved educators (Box 4).

Box 4. Statement from a participant in the pilot project

"Participating in a certification project absolutely counts as continuing education. It's an opportunity for competence development".

The certification pertains to the e-learning courses, but the educators benefit from the experience and any continuing education as well. This raises a question about their future role in the certification: Should it be the same educator who describes and submits new courses from the college for certification, or should it be a new educator who is offered the opportunity to develop their e-didactic competences in connection with the certification?

Because - as mentioned earlier - the certification helps upgrade the skills of the educators involved in the process, the dilemma lies in whether or not it would be more appropriate for the college to pass the baton so that it is not always the same educators developing e-learning courses and ensuring the quality is at a sufficiently high level. Naturally, this dilemma is one that must be addressed by the colleges' management.

Certification as a form of competence development

In the pilot project, e-learning courses have in some cases been developed by employees who have essentially specialised in this area (Box 5).

Box 5. Statement from a participant in the pilot project

A participant "has completed the whole thing. He doesn't have any teaching responsibilities but is in charge of the online courses. An educator has offered ideas and input, but he is the one who has built it all. His role is in the pedagogic area and to get the educators to understand what they have to do. They have put together a course as usual, to which he has added some digital elements and made some videos. It's their process.

He has created the certification descriptions by rewriting the course plan they use to the one that the certification uses".

In most cases, it is educators who have developed and described courses for certification. For example, one educator has been responsible for this process in cooperation with the college's head of education (Box 6).

Box 6. Statement from a participant in the pilot project

One participant feels that "the certification has helped improve the work relating to planning e-learning. It definitely has. He can say so with confidence.

For example, the certification process has made him more aware of the e-didactic consideration model which forms the basis of the certification. He has applied it to the certified courses. It has been useful because it gives him more structure in his course.

At the college, it is included as part of a digital strategy. That is why the head of education at the college has also been included in some of the e-mails sent in connection with the certification process.

It is also an element in the school's quality assurance strategy".

In the pilot project, several colleges have gained experience with a team of educators describing e-learning courses for certification. In one case, the team has consisted of three educators and their line manager, all of whom have worked together to describe courses for certification.

In another case, the individual educators in a similarly structured team have been responsible for submitting their own individual courses for certification while working relatively close throughout the process. For example, they have commented on each others' descriptions of goals for the participants' prior learning and expected learning outcomes as well as the organisation and use of different forms of assessment during the course.

In a third case, three educators in a team have each been responsible for describing and submitting an adult vocational training (AMU) course for certification. Their prior learning was very different, but an intensive process helped ensure that educators with very limited prior knowledge about learning outcomes also benefited from participating in the certification project (Box 7).

Box 7. Statement from a participant in the pilot project

"We decided to work together on the development in the team, which met several times a day to discuss how they could ensure that the courses looked relatively alike in Moodle rather than resulting in three very different courses. The team has gotten something positive out of that, i.e. having that kind of cooperation. Usually there isn't time for that at work when you work with adult continuing education, where everyone is often doing their own thing with the competences they have.

The colleagues either had very limited or no prior VET experience. She herself has attended a college and been responsible for local curriculums. She had another approach to the process and did not feel that it was so difficult using the form [template] they had been given. Her two colleagues, on the other hand, felt that it was. They felt it was impossible inserting the content in all the fields. In the end, they managed thanks to working together. It's been a very positive experience for them."

In the above case, one could describe it a team with a 'locomotive'. One of the members of the collegial team had the prior knowledge to act as the 'engine' and contribute to her two colleagues, who had a far greater need for building e-didactic competences, having a successful experience.

Subsequently, the manager of the three employees noted that she thereby also had a better basis for assessing the need for competence development among the employees, who - despite considerable experience - still encounter challenges transitioning to e-learning (Box 8). As will be discussed in the following section, employee knowledge in this area is a crucial prerequisite to managing the transition to e-learning at eye level - and successfully.

Box 8. Statement from a participant in the pilot project

"In that way, she gained a far better managerial insight into strengths and weaknesses. It's one of the things that can be challenging, because after all, when an educator closes the door to their office you don't know what goes on. You can examine the assessment, teaching material and lesson plan, but essentially, you don't know.

For her, it's actually been a really good process through which she gained a thorough knowledge of her employees".

In another case, a team of three educators from three different vocational colleges worked together to describe courses for certification, where one of the educators had the role of an editor. With input from the other two educators at the two other colleges, she was responsible for developing a common course for certification (Box 9). It almost goes without saying that the latter participants would be able to get more out of the cooperation if they subsequently got time to exchange roles and act as editors for the next courses the team submits for certification.

Box 9. Statement from a participant in the pilot project

"It was three colleges working together to create a course, and she was the only one who had a good number of hours to work on it. If she would have had to wait for the colleagues from the other colleges to bring something to the table, they wouldn't have gotten anywhere. It wasn't because they didn't want to, but rather that they didn't have time for it, as they just had to teach.

It was great that they gave her everything they had on the subject, which she was then allowed to set up. She put it all together in Moodle. It was a very realistic situation, as there are many teachers who just don't have any time to do things like that. That's why it's better to get someone to specialise in setting up courses like those and obtaining knowledge where it's necessary".

As mentioned, the certification process can contribute to upgrading the skills of employees at vocational colleges and upper secondary schools. Some developers of e-learning courses have recently completed their professional postgraduate teacher training and therefore know a great deal about how to best describe objectives for the participants'

learning outcomes. Others, however, completed their professional post- graduate teacher training or a shorter course on educational theory and educational studies many years ago, where there was not as much of a focus on digitalised learning environments, blended learning and digital forms of feedback as there is today.

In addition to that is a group of educators who have a more fundamental need for upgrading their skills if they are to satisfactorily complete a certification process. For example, two non-permanent teachers were put in a team to describe the first courses at the college for certification, but the project was abandoned because of a lack of e-didactic prior knowledge (Box 10).

Box 10. Statement from a participant in the pilot project

"It's been a challenge having inexperienced colleagues to work on it. He has already completed his professional postgraduate teacher training, and another is in the process of doing so.

Two non-permanent teachers were involved; they weren't able to contribute much. They didn't understand the terminology. They completely lacked the necessary prior understanding. In fact, they weren't able to contribute much at all in the certification description and development of learning goals. Doing so requires some experience, as well as a certain educational background. They were driven out on the sidelines: 'You two shouldn't be part of this'. They were put back on the project once the goals had been developed. After that, they could develop material for one subject at a time, which they were comfortable with.

At the college, they have started drafting a Pixi guide for the somewhat inexperienced teachers to show them how to use it, and they describe some things so that new teacher colleagues can teach in a uniform way before they are sent off to professional postgraduate teacher training. You can tell that it's necessary before they can be brought on board in the development process. They need to learn the basics before they can be involved.

It's also a good way of providing continuing education. Even though you have completed your professional postgraduate teacher training and had your degree for 20 years, it's good to shake things up again. And that requires that you do it together, i.e. that there are some people or a group working on it. So, it's a great way to get some continuing education, both for the veterans and the newbies".

As mentioned earlier, there is a dilemma in relation to the certification. The described experiences illustrate this dilemma in terms of developing e-learning within the given budget constraints in a way that factors in the need for knowledge of e-didactics among all the educators at the college. It is entirely up to each individual college to decide which educators should be made responsible for the certification of the college's e-learning courses, but because participation in the certification contributes to developing teaching competences, it can be appropriate to form certification teams so that all regular developers of e-learning courses get an opportunity to work on that in the long run.

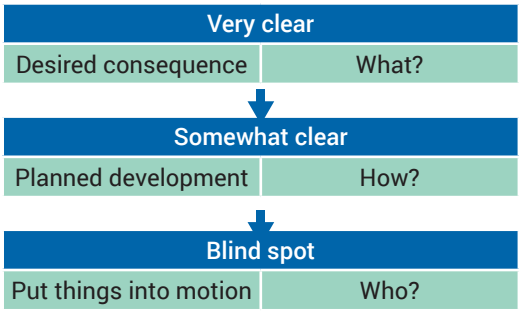
The need for managerial attention

This section provides answers to why there is a need for managerial attention in connection with the colleges' transition to e-learning.

Managerial support for the certification scheme

It is not good enough for the management at vocational colleges to simply announce that the college's e-learning courses must be certified. Even though the general announcements, declarations of intent and visions can set the course and direction for quality assurance of e-learning, the management risks creating a 'blind spot' in relation to who should do what and how to realise the visions (Figure 1).

Figure 1. Blind spot in relation to 'top-down' development (adapted from O. Scharmer, 2010)



To avoid blind spots in relation to the transition to e-learning, each announced vision for more or different quality assurance of e-learning must in principle be accompanied by a plan for how the college intends to implement, assess and monitor these courses as well as when this should be done and who should do it.

The management teams at vocational colleges also create the framework for how educators can gain experience with the potential utility of digital technologies. It is insufficient for educators *to carry out* activities related to e-learning. It is also important that they *understand* the consequences thereof in relation to carrying out the college's core mission.

In general, management of the educators' professional development has a relatively major influence on their development of teaching competences. As measured by the so-called impact size, the influence of these types of measures is generally 0,84, i.e. twice as high as the average influence of other measures (Robinson, 2015). Among other things, the colleges' management can promote the teachers' development of digital judgement through classroom observations and feedback and guidance on pedagogical approaches (EVA, 2014b).

Feedback to educators

In this context, the certification can be a welcome opportunity for educators to receive feedback in connection with the planning of e-learning courses. This includes feedback on plans for more time/location-flexible courses, which is often in demand. For example, many potential participants desire flexibility for geographical and/or family reasons. In the adult vocational offering of 2019, expectations have also been expressed for increased "flexibility and adaptability, education outside standard opening hours and digital learning/ new forms of learning" (Danish Ministry of Education, 2018a).

As mentioned before, the certification can contribute to building capacity to organise, complete and assess e-learning offerings. As the educators develop their professional competences, they can also develop their confidence in their own abilities in relation to e-learning at the same time. This is also referred to as perceived *self-efficacy* in the area of e-learning. For obvious reasons, those educators who systematically describe and receive feedback will develop greater perceived self-efficacy than those who have to settle for 'swimming on land'.

If an educator lacks competences and self-efficacy, such a rumour can quickly spread among companies and other stakeholders, who are dependent on the college's offering of e-learning courses to some extent. In that context, the management would be wise to react proactively. For example, a college's management could factor in certification in current plans to ensure the quality of e-learning and qualification of the college's educators in this area (Box 11).

Box 11. Statement from a participant in the pilot project

"Going through the certification has been an extremely helpful process for them, because what they work on is courses for companies. Once they are certified - i.e. when other people have scrutinised the thinking behind the course - the clients are more inclined to think it is a good course. They feel that it is great that the college has received certification. They would like for that to continue. They want to have some sort of certification when they build something new, as it's really important to get a second opinion from somewhere else rather than just internally.

When they build something, after all, there's a chance that it's not entirely pedagogically pure, and so it's important to get someone else to take a look at it.

The certification should continue. There's no doubt about that, because it also paid off in the media, on LinkedIn and Facebook, and many of our partners liked it. It also means something to the HR departments, because they employ e-learning internally in the companies but with very inconsistent levels of quality.

When the college can explain that they have gone through a process where the pedagogical thinking has been reviewed by eVidenCenter, who have verified that it's a good way to run the course, it makes more sense for the companies to initiate projects. After all, this is such a new area".

What costs are involved?

For e-learning as in other forms of education, the objectives and content ideally establish the framework rather than the other way around. In practice, there is a strong tendency for the hourly budgets to decide a number of factors, and you may digitalise courses based on a hope of cutting down on the number of hours spent on training. In that context, it would be more prudent to look away from the spreadsheet and ensure that you do not at the same time lower the quality of the courses - and thereby potentially risk landing the college in difficulties (Box 12).

Box 12. Statement from a participant in the pilot project

"They devote a significant amount of funds to digitalisation at the college because they can see that it's such a big factor in determining which actors have to close shop. With mergers and all the other things that are happening, they cannot survive unless they have these foundations and digitalise education, and they are really paying attention to what's going on at the moment.

If you don't have an IT educational adviser or project manager - or whatever else you might call them - then you are making a mistake in the transformation period we're in. It's a part of their strategy. Thus, the certification validates their strategy, and their strategy validates the certification".

As mentioned before, the certification can help realise the colleges' strategic plans (Box 13).

Box 13. Statement from a participant in the pilot project

"It's simple enough to make strategies, but then there's everyday life that creates obstacles to progress. Their employees are more focused on operations and the education and training they have to provide tomorrow than they might be on development. How can you make this so simple and straightforward to tackle so that the teachers believe that they can do it?

It's also about being able to see the value of it together. (...) They're actually pretty satisfied in that respect. It's part of what they already need to include in their local curriculums. The system provides a fantastic level of quality, education improves, and you share knowledge and become more efficient".

The piloted certification represents an important step to ensuring quality in e-learning courses. It is necessary to ask what the offering of e-learning costs, but also what the participants get out of it in the short term as well as in the somewhat longer term.

Generally, the sensible thing to do is offering e-learning courses based on the expectation that you can increase the individual participants' persistence and learning outcomes as well as the overall number of participants who complete the course. If you can increase the learning outcome by 50% and simultaneously get 50% more participants to complete the course, you have doubled the same outcome - and within the same timeframes and budgets that applied before the transition.

The need for quality in e-learning

The level of education is not what it once was. It is actually much higher now. The share of the population between the ages of 30 to 60 whose highest level of educational attainment was primary and lower secondary school has more than halved since 1980 (Ministry of Finance, 2016). This trend will continue as younger generations with a higher level of educational attainment take over from the older, less well-educated generations.

One could argue that this constitutes progress. While such progress comes at a price, it is often an advantage both for the individual citizen - who gets to pursue the education and training they want - as well as society in general as it can help create greater prosperity.

In post-compulsory education, intake has risen sharply in recent years, but it has not gone quite as well as desired. The political vision of an increased intake in vocational education and training as well as upper secondary education has stagnated, so there is still much room for improvement on this front.

I recently held a talk for 30 principals from a Norwegian municipality. They said that in their municipality, 49% of primary and local secondary school leavers enrolled in vocational post-compulsory education. They wondered slightly why the corresponding figure in Denmark was only 19%. What are they doing differently in Norway? Where are we falling short in Denmark? For instance, is there a need for increasing the prestige of vocational education and training in Denmark so that young people feel it is cool to go down that path?

Answering such questions is completely beyond the scope of this report, except in relation to one aspect. It cannot be ruled out that intake is linked to the quality of the education, meaning that it is relevant to consider how - if at all - one can improve that quality.

Quality is a very vague concept. It is typically thought of as an entirely good thing, but it is difficult to establish what characterises quality. For that reason alone, it is important to take the initiative to do so through certification. For example, it makes sense to ensure that educators develop knowledge of the terminology used to describe e-learning courses.

There has been a tendency for the actors in this area to use different terminology for the same things. Some employ the rather broad conceptualisation of e-learning, which includes online-based distance learning, blended learning and digitally mediated teaching. Others use the corollary thereof: The narrowed-down conceptualisation of e-learning, which only entails distance learning. In that situation, the colleges' management teams would benefit from strengthening the development of a common technical jargon and use of core concepts in a consistent manner in the organisational units.

If one prefers terms such as *online learning, combination learning* or *blended learning,* the management can ensure that they are defined in such a way that they are easily understood for the participants and used more consistently in all announcements about what potential participants are signing up for when they commence their learning process.

Generally, the term *blended learning* refers to a form of organisation where the actors make use of digital equipment to expand the opportunities for dialogue so that they do not need to physically meet for periods but can remain in dialogue with one another online. Because digital communication can reduce geographic barriers and time wasted on transport, many programmes and courses have increasingly become organised as something in between activities at certain premises and location-neutral online activities, which means they fall under the term *blended learning.*

Because it is used as a term for many different types of organisation, however, it is not all that informative when participants have to assess what is expected in terms of their 'attendance' at the college and 'online participation' in digital learning environments. In order for potential students and course participants to know what they are getting into when they sign up for a course organised as blended learning, they must be clearly informed about the organisation of time- and location-flexible e-learning.

For example, they may to be clearly informed about how much time in total the course is expected to require from them as well as the ratio between the time they are expected to spend on 'attendance' and 'online participation'. The influence of explicit statements measured by the so-called impact value is 0.75, which is considerably higher than the average influence of other types of measures, which is 0.4 (Hattie, 2012).

Explicit statements include clear descriptions of the expected learning outcomes. Previously, there has been a tendency for this to be merely implied. The notion that students and course participants would learn something was perceived as something so obvious that institutions did not always make it entirely clear what they would learn. The influence of clear learning objectives on the participants' learning outcomes is 0.5 and thus also higher than the average influence of other types of measures (ibid.).

The certification has a major focus on easily understandable objectives for e-learning and explicit statements about the forms of organisation and learning activities. A significant part of the intent behind the certification is - as mentioned earlier - to make it more transparent for potential students and course participants to know what they are getting into when they sign up for an e-learning course.

With respect to such signs of quality, the certification can reinforce a break with the prior habit of planning on-site courses.

The theme of the following

What are signs of quality?

Concerning descriptions of student and course participant outcomes, for many years a sign of good quality has been that the participants are taught the relevant content. If you were able to put check marks next to having received instruction in the various subject matters, you had, by definition, achieved the learning outcome. The outcome was essentially satisfactory if the participants had 'dealt with' all the relevant contents of the course. As education progressed, one could put check marks next to the individual components of the course so as to ultimately conclude that they had all 'been reviewed'.

The fallacy therein lay in the assumption that the participants learned enough from the process for them to subsequently make use of what they learned. As we know, that was far from always being the case. For example, students in Denmark are taught to read and write for 10 years in primary and lower secondary school. In spite of that, approximately every fourth school leaver lacks functional literacy skills if they subsequently wish to apply for admission to post-compulsory education. When assessing the quality of a learning process, it is essentially not sufficient to focus on the content that the student or course participant is introduced to. A sign of quality is not that the content has merely been reviewed, but that the participants gain knowledge of it to a degree that they are subsequently able to use it in problem solving or in work-related problems.

In order to avoid this kind of fallacy, there has been a greater focus on the participants' learning outcomes in recent years. More attention is now being paid to the importance of establishing easily comprehensible learning objectives so that potential students/course participants can more easily understand what they are getting into when they sign up for an education or training course organised as e-learning.

Essentially, there has occurred a shift in focus from teaching to learning goals, which has thus far been a shift of the type: two steps forward and one step back. This shift in focus represents progress because it is now easier than before to assess whether and to what extent a course lives up to expectations. Regardless of how you formulate them, it always revolves around carrying out the college's core mission, which in principle is to create value for the participants (Ledelseskommissionen, 2018). For obvious reasons, a course in which the participants learn what they are expected to is better than one in which many do not.

However, these changes represent a step back for several reasons, of which I will mention one of the most important ones. It is not quite clear in the politically led part of the education sector how to best assess the learning outcomes of the participants without at the same time doing so in a reductionist fashion. For example, there are systems to measure these outcomes, where the used assessment methods carry the risk of attaching more importance to the testable skills than knowledge and competence goals ('teaching to the test').

The certification process, however, creates a specific opportunity to describe and receive feedback on descriptions of objectives for the participants' learning. The question is how the process can support educators in formulating clear objectives for the participants' learning. That is the theme in the following, which is intended to provide answers to how best to describe signs of learning and in extension thereof, aspects the certification makes better than before.

From implied to clear learning objectives

When formulating learning objectives, it can be helpful to get a general introduction to central concepts in that field. Otherwise, it can be a challenge to describe easily comprehensible objectives and what the participants actually get out of completing a course before moving on to describe the content, activities and selected material (John, 2006).

For example, three educators at a technical programme needed to be introduced to key concepts that they had to use in describing e-learning before they themselves were able to use them to describe courses for certification (Box 14).

Box 14. Statement from a participant in the pilot project

> At a technical college, it is recommended to have a dialogue with the external examiners institution going forward. The teachers would not have been able to it unless there had been a dialogue with an employee from the institution through a Zoom meeting, but they'll be able to next time.
>
> The certification functions as a form of continuing education. (...) If you have been a tradesman your whole life, you need to upgrade your skills. (...) It becomes an ongoing process to upgrade their skills. (...) Because the tradesman definitely needs to achieve a higher level - in a purely educational sense. (...). What [an employee from eVidensCenter] says, they understand. The dialogue with him was crucial for them to achieve their goal.

In that light, it's fair to consider whether in the future colleges can obtain a 'certification package' that aside from the template and feedback itself also includes an offer for 'a couple of introductory lessons' or the like. For example, the purpose of 'a couple of introductory lessons' could help build a better understanding of the different types of organisation used in vocational education and training. They can be adapted to the educators' needs and help qualify their subsequent reflections on how they can best organise two-day courses or courses corresponding to 100 hours or five weeks.

A drawback of that could be that 'a couple of introductory lessons' lengthens the overall development timetable a bit. In the pilot project, there are several examples of the fact that describing a course for certification can already be time-consuming. However, it is not the only reason for why that is. In any case, it is time-consuming to develop e-learning courses,

although some of that time is also saved because there is less day-to-day preparation when teaching the course (Box 15).

Box 15. Statement from a participant in the pilot project

> They have found that it's very time-consuming to develop a course from scratch. In traditional classroom instruction, a teacher has a schedule planned with a few lessons a week and some preparation. It could be 20 lessons with time to prepare before each one.
>
> Of course, it's a long-term plan, but when you start in September, the lessons for December are still incomplete. It's something you develop along the way, whereas now, you actually have to have the entire course prepared from A to Z. (...) This means that you have to prepare the whole course before the first lesson.

This participant's observation should be taken into consideration when assessing time-consumption in the pilot project, which in one case ran up to 14 working days. Regardless of whether you get an e-learning course certified, it takes time to develop it. In addition to that comes the extra work, which helps describe a developed course so precisely that it can be digitalised.

It is said that all beginnings can be challenging, but one participant in the pilot project has highlighted that in the long run, the certification can prove to be less time-consuming and to some extent become 'automated' (Box 16).

Box 16. Statement from a participant in the pilot project

"There have been lots of e-mails going back and forth about polishing the formulations of this or that, and it can be difficult to get that first course certified.

If you could get other courses certified that comply with a certain structure that the first one does, you can use it as a template that each subsequent course can be designed after. In that case, they would probably use the certification scheme going forward, but otherwise it might be a laborious and time-consuming process. Of course you should work with learning objectives, but if the certification of a course can become an overarching framework for more courses, people will want to go ahead with it. It's important to automate it. (...)

He feels that he has learned a great deal from that way of working, and the college has implemented the template that they got in connection with the certification. The college is now using it to develop other courses. It is a really good tool to work with when describing goals and didactics and what media and material will be included, such as assignments and reading material. It hasn't been done that way before.

It is easier for others to work with courses in a similar fashion and very helpful as a way of clarifying what you are looking at in a given learning process, including that you should use this or that media for the course. It ensures that the participants become more familiar with the development process because the same structure is used for different courses.

It also ensures that you develop specific learning objectives that are easily comprehensible to the participants and which give them a more precise idea of what they have to learn, and that afterwards, they can better assess whether they actually learned those things.

As mentioned before, it is important that explicit statements and formulating easily comprehensible learning objectives eventually becomes so 'automated' that it becomes something that educators just 'do' when planning blended learning and other forms of e-learning. All else being equal, it can help ensure that the planning of high-quality e-learning is done more systematically than before, which is the theme of the next section.

The need for systematic planning

This purpose of this section is to answer why there is a need for systematic planning of e-learning and what aspects the certification scheme helps improve compared to before.

The pilot template

The template which was used in the certification scheme provides for systematic planning of e-learning. For example, it presupposes that the colleges clearly communicate to the participants what learning objectives exist for each course organised as e-learning (Box 17).

Box 17. Statement from a participant in the pilot project

> "The template that has been used in the certification project can definitely be useful. That's been the perception. If we have to develop an entirely new course, it's a good template. But it requires that you know what learning objectives are".

In some cases the colleges have asked the external examiners' institution for help in this area, as mentioned earlier. For example, there have been online seminars where an employee from the institution has given an introduction to the thinking behind learning objectives for educators at a technical vocational college.

In most cases, the template and underlying e-didactic reflection model is a good fit in relation to what the colleges' existing processes (Box 18).

Box 18. Statement from a participant in the pilot project

> "The model works really well, and can actually be used as their local curriculum. It fits well with their system in which they have developed their learning system. The model really fits in well there, so the three things are linked together. They have Zoom as their online platform where you can meet (the classroom) and Itslearning, where you store the material, the local curriculums and the model, which comes from eVidenCenter. Those three things go together".

At a business college that participated in the project, it has been a rewarding learning experience to work on describing learning objectives, as this did not occur to the same degree before the certification (Box 19).

Box 19. Statement from a participant in the pilot project

"They've been a little surprised at how important it has been to work with learning objectives. There hasn't been much focus on that in the past. It's been necessary to delve into the objectives and reset courses... and say: 'We're going to start from scratch now. We're putting the book away. We're not going to be curriculum-driven. We're basically going to decide from the start what's going to happen'.

Afterwards, they had to analyse their learning objectives. They were surprised by how big a task that was, including how much time it took and how many hours they had to devote to considering the learning objectives. They were too ambitious in terms of what they assumed they could achieve in a fortnight. The bar was set too high. When they had to start developing the course, making it operational and inserting content, they acknowledged that it wouldn't be possible to achieve the learning objectives.

That put them a few steps back. They had to go back and work on the learning objectives one more time and say: 'There are some of them where we'll have to lower the expectations for what the students should be capable of by the time we're done'.

In other words, the team has gained a valuable experience. They have not previously worked so thoroughly with learning objectives. They have presented their work at a work seminar with 5-6 other teams that have begun to work on the same thing, and all of whom voiced the same sentiments. It has been surprising that by focusing on learning objectives, they have started to reflect on whether what they were doing earlier was actually appropriate.

It's great to question yourself in that way: 'Did we really do the right thing in relation to what we wanted to achieve? Were our activities appropriate?'"

The work with the template for certification has also been educational in colleges where employees had prior experience working thoroughly with learning objectives.

For example, the developers at one such college have benefited from using the template because it results in greater consistency between objectives and assessment forms (Box 20).

Box 20. Statement from a participant in the pilot project

"They've previously worked a lot with learning objectives. (...) That wasn't the difficult part. Identifying consistencies in relation to the assessment part, however, has been the interesting part, such as asking: 'Are we really monitoring [progress]? How are we monitoring [progress]? How do we provide the feedback to the students that they need?'"

Better consistency in e-learning courses

At some colleges, the certification has also helped create more focus on consistency between the assessment methods they use and the stated learning objectives (Box 21).

Box 21. Statement from a participant in the pilot project

> "In terms of assessment methods, there's greater consistency between objectives and assessment methods [now]. You clarify that the students will be assessed on each topic and whether they will get verbal feedback or online instruction. Sometimes they give group feedback. (...) They have clarified that for every single assignment. It's important to the students because they don't actually meet them. It's asynchronous e-learning, so it's important that the students know what the feedback consists of.
>
> It's been really important to focus on the assessment portion. The assessment refers back to the learning objectives. After working intensely on them, you would look at them as you developed assignments for the topics and considered: 'What is it actually that we want to see that you are capable of once you have achieved the learning objectives?'
>
> They have worked on other assignments that show that the participants have achieved the learning objectives. There has been a focus on examining whether the participants have achieved the learning objectives and that they have learned something and written assignments based on that - and that's also what they get feedback on".

At one college, the work on learning objectives has also helped retire the 'fire at will' type of planning with objectives and topics without ensuring that there is consistency between these (Box 22).

Box 22. Statement from a participant in the pilot project

> "It was actually great to have the template and focus on consistency. Some of those who were involved and hadn't worked as long as others [with it] did not really consider consistency. It became a sort of 'fire away' process where the learning objectives and subjects weren't always connected and there wasn't a red thread going through the entire course".

At another college, the template has also helped create better consistency in the descriptions of e-learning courses (Box 23).

Box 23. Statement from a participant in the pilot project

> "It was helpful and really great to have the template to follow, as it helped us focus on which topic to remember to include in our considerations and - once you defined the learning objectives and transformed them into something operational - to review it all again: 'Was it actually a success in relation to the assessment questions? Are the participants actually being tested on what we have set as objectives?' It's a challenge that the templates help us remember to address".

At a third college, it has also been useful to focus on the starting point of e-learning courses. They had worked with learning objectives prior to the certification, but it had been helpful because they got feedback on their learning objectives, which enabled them to describe them in a manner that was more understandable for the participants (Box 24).

Box 24. Statement from a participant in the pilot project

"They had worked a lot with learning objectives in a [former] project. They have been introduced to how to work with them over the past three years, but in the feedback they received, they were told that the learning objectives were not precise. They needed to be formulated in a less vague manner.

It was actually the wording itself that was the issue. In adult vocational training, it's quite common to have participants who struggle with reading and writing and who struggle with learning in general. That's why the way in which the learning objectives had been stated have not always been a good fit with the participants' prior learning. The certification process has been helpful by being focused on whether things make sense linguistically and whether the learning objectives are precise enough.

The effect of the certification process has been that we've become more attentive to our use of language in relation to the target group. Theoretical literature is not written in the target group's language. That's why we've looked at whether it could be done differently (...) and been conscious of the fact that the language may be too complicated.

For example, the sentence structure could be too complicated. They have reviewed it to make it simpler and have given more thought to the target group when completing the templates. When they were forced to work with the target group in mind, they became more conscious of that".

Adaptation to the target group

Adapting courses to the target group's needs is obviously an essential condition for increasing motivation and diligence and thereby promoting learning. That is the theme in the following, which seeks to answer why there is a need for adaptation of e-learning courses to the target group's prior learning and how the certification can help increase focus on that.

Fundamentally, participants strictly learn by doing. It depends on their learning activities, which as mentioned earlier are a crucial component in the certification.

When organising e-learning, the participants' activities can be organised and adapted to the target group's prior learning in different ways. For example, this could be done through online learning activities and the provision of work-based training in or outside standard opening hours. For the most part, there is a need to adapt e-learning courses in relation to students'/ course participants' mastering of the four fundamental culture techniques (Table 1).

Table 1. Fundamental culture techniques

Receptive	Productive
Listening	Speaking
Reading	Writing

For participants who struggle with reading and writing while working with written materials and assignments as well as participants with Danish as a second language, it may be challenging to even participate in the educational discussion (Box 25).

Box 25. Except from guidance material in the field of adult vocational education (AMU)

If working with texts and numbers if a challenge, AMU course participants should be offered an assessment of their basic skills in reading, writing, spelling, computing and maths (Danish Ministry of Education, 2007; Danish Ministry of Education, 2018b). If a screening reveals that they need tutoring in literacy or maths, they should also receive guidance on signing up for work-based training (FVU).

If the person's mastery of Danish is the issue, this calls for another form of intervention, namely the special educational offerings available to bilingual participants in adult vocational training (Danish Ministry of Education, 2016). These offerings have been developed to give them opportunities in the Danish labour market corresponding to those of ethnic Danes.

It is beyond the scope of the certification to assess whether and to what extent the participants in adult vocational education courses are assessed with a view to ensuring that they have the necessary linguistic and communicative skills to participate in e-learning. That is a matter for the vocational colleges' internal quality assurance. It can only be noted that according to the e-learning courses which have been submitted for certification, the colleges are very focused on the challenges associated with the participants' basic prior knowledge.

For example, one certified course uses "scaffolding through video-based material" and written materials that the participants can 'read with their ears' (Box 26).

Box 26. Statement from a participant in the pilot project

"We know from experience that several course participants have literacy difficulties due to dyslexia or limited school attendance. Therefore, they also have challenges working with written material. For this type of course participants, they can have the material read to them via CD-ORD.

We can also get integrating citizens who have good IT or financial experience from their native country but - because they may struggle to comprehend the Danish language - may find it difficult to carry out the learning activities which entail having to go through a lot of reading material, even though the learning activities are Web-based. That's why we incorporate scaffolding through video-based material in our didactic considerations. The purpose of this is to support those course participants who have special challenges reading and understanding the teaching material."

In the description of the examples of courses that potential participants have access to, there is also a link to the adult vocational education course's level in relation to 'The Danish qualifications framework for lifelong learning'. If a person has competences corresponding to level 1 in this model, they are able to not only "assess their own work" but also "present the results of their own work". Both of these abilities are usually taken for granted in relation to e-learning courses. For example, adult vocational education courses cover the levels 2-5 (Danish Ministry of Education, 2010) while the education-specific subjects are at level 4.

In adult vocational education, the range of levels is accordingly so wide that it can be prudent to identify the participants' level before they are accepted into an e-learning course (Box 27).

Box 27. Statement from a participant in the pilot project

"Together with another IT educator, she has prepared a big template for the employees of a big company to tick the box at the level they feel they are at. They have added a description: 'I can do this and that'.

It's true that there can be considerable differences between the level they are at, and it's crucial to the organisation of the instruction that you know your target group (...). You can't handle it if there's someone who's at level 2 while someone else is at level 5."

Division into levels in adult vocational education (AMU)

Additionally, there are challenges involved in describing adult vocational education courses which the certification scheme is unlikely to remedy. These will be described with reference to a business course which has been certified. The target group consists of employees in an accounting department in a company, and the purpose is for them to acquire knowledge that they can use in their "daily accounting work". More specifically, the target group includes "administrative staff with limited or no accounting experience" while the course relates to the tasks of "registration and bookkeeping of daily accounts".

Because participation in adult vocational education courses cannot take on a character of consultancy services aimed at specific financial reporting in a specific company, the course focuses on "the foundational principles of debit and credit" among other things (Box 28).

Box 28. Excerpt of description submitted for certification

"*Description*: In the course, we work with the relationship between the income statement and balance sheet and the differences that exist between businesses' financial statements. Through a series of practical exercises, we work with the foundational principles of debit and credit.

Target group: Administrative staff with limited or no accounting experience in commercial and service businesses or institutions. The course is aimed at employees tasked with registration and bookkeeping of daily receipts.

Objective: The participant should be able to distinguish between income and balance sheets and use a simple chart of accounts for entering daily receipts in a commercial company. The participant should be familiar with different types and forms of companies as well as the associated legislation, providing them with the necessary insight into how different financial statements are structured. The employee can apply that knowledge to their daily accounting work."

The course accepts new participants on an ongoing basis, and the participants predominantly work individually with individual assignments on a number of relevant topics, including:

1. insight into the structure of different financial statements, including building annual accounts and entering items into the accounts
2. knowledge of different types and forms of companies
3. knowledge of associated legislation (the Danish Bookkeeping Act and the Danish Financial Statements Act).

The course participants are expected to spend two days (14.8 hours) completing this course. It is possible that some of them may have to spend more time learning how to use a simple chart of accounts in an accounting system, entering daily receipts in a company, different forms of companies and relevant laws and regulations in this area.

In relation to the certification, it is an important criterion that the information provided to potential course participants should be transparent so that they know what they are getting into when they register for a course. In the adult vocational education area, action-oriented objective descriptions should be regarded in relation to the level at which the objectives will be met. The above example illustrates that this can be challenging. In the above case, the description provides a link to the level descriptions in "The Danish qualifications framework".

Final reflections and recommendations

This aim of this section is to provide answers to why there is a continued need for certification in connection with the colleges' transition to e-learning and how the certification can be adapted to the colleges' needs going forward.

Naturally, there is a lot to take into account when an educator develops and describes an education-specific course, an adult vocational education course, etc., with a flexible organisation and which is digitally mediated. In this context, one can highlight the following:

- a single core mission,
- two perspectives
- three factors.

As mentioned earlier, the term *core mission* should be understood as the overarching mission of the institution to create value for students or course participants (Box 29).

Box 29. Examples of descriptions of the core mission in submitted descriptions of courses for certification

> "'The student at the centre' means that we (...) put the student's education and learning at the centre of everything we do. The value of every decision and action should be measured against whether it contributes to the student's education and learning."

Additionally, two general perspectives can be applied to e-learning courses, as they can be seen from the point of view of the participants and educators. The planning or e-learning courses is, in principle, always based on the participants' perspective rather than that of the educators. In other words, it is rooted in the students'/course participants' needs.

More specifically, e-learning courses should be planned and taught so that they provide the greatest possible value to the participants (EVA, 2014c; EVA, 2017). In the planning process, the core mission should accordingly always lay at the heart of it rather than professional standards.

Three key factors in the planning process are: learning objectives, organisation and assessment. As mentioned earlier, the objectives for the participants' learning outcomes should determine the forms of organisation and assessment rather than the other way around. Of course, in practice one must take into account the framework conditions that have already been established. For example, one must take into account the centrally determined learning objectives and stated examination and test forms. Within such a framework, one can lay down objectives and choose forms of organisation and assessment that best ensure that a course provides value to the participants while exercising the greatest possible consideration for their prior knowledge.

The other, central perspective is the educators'. It is insufficient to create the best possible conditions for the participants' learning unless the educators are also satisfied in their role.

The educators have received written feedback as well as verbal input and advice in some cases in connection with their work on developing and describing vocationally oriented courses. As the first in Denmark, they have gained experience on certification of e-learning courses through their involvement in a pilot project.

The process has been relatively laborious and appeared stressful to some, but not all, of the educators. Those educators who were already used to working with local curriculums and similar templates have generally found the process far less challenging, but for those who lacked this prior experience, there have been quite a few new challenges for them to deal with. Therefore, the educators who understand the terminology do not have the same challenges. This further illustrates the importance of a uniform terminology when a vocational college offers e-learning courses and embarks on such a process.

In some cases, the educators only completed the process after receiving verbal guidance, either from a more experienced colleague or an employee at eVidenCenter. Going forward, it would be advisable to carry out a needs assessment among potential educators. For example, a college that has planned to involve six educators in a possible next round would be advised to identify any needs for an internal introduction to key concepts in this area.

As mentioned, several of the participants in the pilot project have expressed that it serves as a form of continuing education that can be better focused by offering a few hours' introduction to the template that is used for the certification scheme. This introduction can be provided by an employee who has previously gotten a course certified or an employee from eVidenCenter and be carried out face-to-face at the college premises and/or through Web-based dialogue and guidance.

Continued work with the template

As mentioned earlier, there is widespread satisfaction with the template that is currently in use and which many of the participants intend to use after the certification. It has been disseminated as a spreadsheet in which you can easily add another tab if you wish to adapt it to the local institutional context.

For example, some participants in the pilot project have considered creating another sheet to describe the digital tools they use. This is particularly appropriate if they have deliberately chosen a specific tool or wish to describe the implementation in more detail. Among other things, it provides space to describe how they use audio files, video clips and/or video commentary.

Other participants are more prone to consider digital tools a condition. For example, they are expected to use certain online interactive books or the college's digital learning platform, which is why they have described that in the sheet on 'Conditions'. In any event, the spreadsheet contains a column for describing 'Materials and tools' in connection with the individual sub-components of a course and activities.

Against this background, it is therefore recommended to continue using the existing main components of the template (Box 30).

Box 30. Main themes of certification

Terms of the course

Learning objectives of the course

Participants' prior learning

Organisation of the course

Activities and *learning methods*

Assessment of the course

If a college wishes to prepare the educators for the certification scheme, it would be advisable to use the themes outlined in Box 30 as a checklist to ensure that the educators are well-prepared to develop e-learning courses that meet the certification requirements.

As mentioned earlier, it is recommended that educators who need it are offered an introduction to the certification, which could include all or merely some of these themes. In other words, before embarking on the certification process at a given college, it would be advisable to identify any needs the educators may have for upgrading of skills in these areas.

One of the participants in the pilot project has also suggested to limit the extent of the descriptions of e-learning courses somewhat going forward (Box 31).

Box 31. Statement from a participant in the pilot project

"Limit yourselves to a few words so that it doesn't become a habit. As it stands now, you can find yourself opening the template and thinking that 'they want me to write five pages'."

The same participant has also asked whether it was possible to modify the layout of the template. Their thinking is to avoid having to scroll too much, as is currently the case with more comprehensive course descriptions.

Going forward, it might also be worth considering whether it would be beneficial to make it Web-based and interactive. An explanation could be added to some or all of the fields. For example, this could consist of short video clips with examples of how to fill in a field.

The need for describing methods of assessment

According to staff at eVidenCenter, which has been responsible for the certification scheme, the biggest challenges in the submitted course descriptions have been the two italicised items in Box 30, i.e. reasoning for the choice of learning and assessment methods.

First, I will elaborate on the need for providing the reasoning behind for the descriptions of assessment methods. It is only in relation to a few of the courses submitted for assessment that this has been an issue, however. In fact, in many cases, assessment method descriptions have been submitted that prompted positive feedback (Box 32).

Box 32. Examples of comments on descriptions of courses submitted for certification

"A really great plan for assessment."

"A good and meaningful systematic approach in the assessment plan. Really great that you have incorporated criteria for meeting the learning objectives."

"There's a good systematic approach in the assessment methods, i.e. the consistency between learning objectives, the character of the activities and the methods of assessment is good."

"At first glance, there's a good consistency between the method of assessment and feedback."

In other cases, however, there are doubts as to how best to select assessment methods considering the target group's prior knowledge, learning objectives and the content and duration of the course (Box 33).

Box 33. Examples of comments on descriptions of courses submitted for certification

"The assessment plan should be clarified."

"The assessment plan should indicate which of the learning objectives (ideally with the criteria which you have formulated well) you will assess in relation to the different activities in the course. In what you have submitted, things are a bit 'messy', and you should highlight and clarify how you intend to create consistency between the assessment method, purpose of the assessment and learning objectives."

"For examples, presentations of case assignments are not an assessment method. The presentation is what the course participant does and which forms the basis for the assessment itself, the method of which is described in terms of what the educator will do to examine and assess the extent to which the presentation meets the learning objectives and criteria."

"You should also go into more detail in your description of the feedback: What will the feedback consist of (e.g. type)? How will the feedback be provided (by whom and how?)?"

"You have worked really well with the 'Model for documentation of learning outcomes'. For example, weeks 1 and 2 are described in an exemplary manner in relation to the criteria for the certification. Use that approach in the rest of the assessment plan."

"The wording should be clarified in several places so that you indicate more clearly what the criteria for meeting the learning objectives entails. Formulations such as 'roughly' and 'emerging familiarity' are difficult to assess in practice."

Since there is research evidence suggesting high value of 'ongoing' assessments, it is essential that one assesses the participants' learning activities continuously, taking into account their prior knowledge, expected learning outcomes, activities, etc. Moreover, it may be necessary to consider ritual assessments where one assesses in certain ways without considering the appropriateness thereof.

In some cases, the colleges have been asked to elaborate on or clarify descriptions of how they will conduct assessments and provide feedback. The better consistency there is in this regard, the more likely the participants are to get a good learning outcome, i.e. an outcome that is better than it would otherwise have been. As mentioned, it is beyond the scope of this formative research to assess the effect on this area more in-depth.

The need for describing methods of learning

Another area in which there have been challenges concerns the aforementioned concept of *learning methods*. Once again, this in no way applies to all the submitted descriptions. In fact, the descriptions are explicit and well-founded in some cases (Box 34).

Boks 34. Eksempler på beskrivelser af læringsformer i forløb indsendt til certificering

"Instructional in terms of the available video, material and quizzes and constructivist in terms of the open assignment submissions that are shared with the educator. It is also constructivist in terms of webinars, Q&As, oral presentations as well as the student's opportunities to contact the educator."

"The content has been selected and planned on the basis of an instructional learning method where the content, examples and exercises have been planned in advance."

In other cases, the first version has prompted questions and direct clarification requests regarding the learning methods (Box 35).

Box 35. Examples of comments on descriptions of courses submitted for certification

"Why, for example, are you mainly focused on the instructional learning method?"

"The descriptions of the individual components in the certification are in general very well-considered and thorough. However, improvements can be made in terms of the reasoning for the choice of learning methods. The course is examined in its entirety, and the descriptions contribute to an understanding of the intention behind the structure and learning methods, but there is still a lack of reasons for the choice of learning methods in the template. As I wrote before the holiday: 'The reasoning for the instructional structure of the online course/activities could be a little more explicit: In other words, why is it this exact learning method that is applied to all the activities?"

"Why (...) has an instructional learning method been selected for some activities and a constructivist method with independent work for others?"

"There should be a reasoning behind the choice of learning method (...). Has it been selected out of consideration for the target group, the educational content, etc.? For example, wouldn't it be most appropriate to work collaboratively?"

"Several good descriptions under learning methods and components, e.g. in terms of reflective writing, ways to facilitate social constructivist learning processes and about the pedagogical concept. (...) There's missing a (somewhat clearer) reasoning for the choice of learning methods and elements."

" A very good description of the course. What's missing is an argumentation behind the descriptions of the course organisation and learning methods and elements of the instructional aspect."

"What does the term 'blended learning' encompass in this context? Usually, the term would be used to describe a form of organisation rather than a learning method."

The template used in the pilot project is based on the e-didactic consideration model, which covers three methods of learning: 'instructional', 'social constructivist' and 'constructivist' learning. It is undoubtedly advantageous to be familiar with the model when describing courses for certification but not a prerequisite, and there are certified courses that do not integrate this model.

The distinction between the three learning methods can appear somewhat theoretical in nature, and going forward it may be worth considering providing a more thorough explanation of the learning methods than has been the case thus far. In general, there is a difference between students/course participants being shown/told something, learning something in a community of practice or independently forming an understanding of something. It may be worth considering adding brief explanations (e.g. in video format) for how educators can offer their reasoning behind the relationship between these learning methods.

For example, they could include periods where the educator alternates between a role as teacher and supervisor. They could also include periods where the participants work independently and/or communicate and work together with other participants or colleagues in their company. In such cases, it would be unnecessary for the educators to use terms such as *instructional, social constructivist* and *constructivist* in their description of learning methods.

In any event, it is usually inappropriate to use such terms in the course plan that the college publishes for potential participants. It is more important to describe what the terms mean, which is also emphasised in the feedback on the submitted courses for certification (Box 36).

Box 36. Examples of comments on descriptions of courses submitted for certification

"You could consider refining your reasoning for choosing the instructional learning method. In cases where the student cannot be expected to possess prior knowledge, it can often be argued that the instructional learning method is suitable."

"There's missing a (somewhat clearer) reasoning for the choice of learning methods and elements." It is unclear how the learning method will be constructivist, e.g. in terms of the choice of approach to the subjects or opportunities to work with individually selected issues within the context of an overarching theme. What I feel is missing are some descriptions of what the educator contributes with as a supervisor. It should be clear how the course participant can choose and simultaneously be encouraged to navigate independently through the course if the learning method is to be argued as being constructivist."

Perceived usefulness

In the aforementioned interviews with the educators, there is a unanimous sentiment that the pilot project has been relevant and useful to them. The perceived usefulness has been great for several reasons. They have undergone a valuable upgrading of skills in the area of e-didactics and received a useful and relevant template that they would like to use in the future when planning e-learning courses. They have also improved their ability to plan e-learning courses by using accurate terminology in a consistent manner that makes it understandable to the target group.

In the other interviews, three management representatives expressed a similar sentiment (Box 37).

Box 37. Statement from a manager at a vocational college

"This won't fly if you don't have management on board. (...) If the manager doesn't get involved, it dies. That would only leave the truly committed employees, and they give up too. (...). They are very happy with the cooperation."

If it is to become countrywide - or just adopted at a college - 'a couple of introductory hours' with an employee from eVidenCenter could be a good investment.

Based on the above, it is not possible to determine whether and to what extent the educators have actually become more capable of providing the reasoning for their didactic choices in connection with planning e-learning courses. With a view to elaborating on that, I would distinguish between *implicit* and *explicit* didactic reasoning.

Implicit reasoning applies to situations where the choice of the organisational form takes on the character of a requirement. One example of such a requirement could be participants having to be able to complete the course in an 'Open Learning Centre' at the college. Another example could be participants having to be able to work from home. A third example could be external requirements relating to work-based training that a certified courses would have to fulfil to be feasible.

Implicit reasoning is also evident when an e-learning course has a consistent relationship between the participants' prior learning, expected learning outcomes and the overall organisation form and assessment methods. In general, the certified courses contain good, implicit reasoning. The opposite would be the case if something in the descriptions appeared to indicate that the learning processes will be such that the described objectives would not be met.

For example, the work placement component of some courses could best be implemented by meeting in person in appropriate locations with forklifts, kitchen facilities, etc. Because it is implicit, there is no need to provide reasoning for this when describing the participants' 'attendance' at the college, but of course it may still be relevant to provide reasoning for the degree thereof and the extent of 'online presence' that would be required in digital learning environments.

One weakness of implicit reasoning in e-learning course descriptions is that they are difficult to convey to educators who have to realise or further develop the courses. With that caveat in mind, however, it is likely that a large portion of the participants will undergo the intended professional development and thereby meets the set objectives within the time available and doing the independent work that is expected of them. If the participants are motivated to 'self-study' and able to do so, it essentially has more to do with the expected professional progression, which in this context is not the same as professional perfection.

Explicit reasoning for didactic choices presupposes that one describes these choices and why those choices were made are described. One example of such reasoning relating to considerations for potential participants' linguistic prior learning can be found in Box 26. Explicit reasoning is also provided in nine other descriptions of courses submitted for certification (Box 38).

Box 38. Examples of explicit reasoning in descriptions of courses submitted for certification

"The activities are designed as information acquisition/retrieval so that they know/ can figure out how to store, handle and ship hazardous substances in accordance with applicable rules, as well as safely and sensibly without getting injured at work."

"The instruction is based on the practical learning concept in order to ensure the student is given a good opportunity to create transfer from theory to practice, from practice to theory and from teaching to practice, thereby ensuring that the instruction is meaningful and understandable."

"Each student must have a shop they cooperate with from day one (...) and thereby they are linking theory to practice. (...) Because they work on the assignments and read the theoretical literature at home, the teacher will be contactable by e-mail for supervision. (...) The business plan must be presented in a way that allows the students to elaborate on their answers and argue in their favour. They must also practice how to hold a presentation, as that is the form of examination. The students will be out working in a shop, which is why they should learn to present a product; a business plan, in this case."

"It is important in these first modules of kitchen traineeship that the students gain confidence in their new surroundings, which is also why there is so much focus on self-monitoring, 'good conduct' in the kitchen as well as the safety instructions that apply to the kitchen."

"The learning method has been selected with the target group in mind; in our open workshop, there are often course participants from a company who with this learning method can choose to sit at the workplace to complete the course and receive online supervision."

"The case is used to document the learning outcome as well as to relate theory to practice and create an opportunity to incorporate individual experience."

"The course participants get to reflect on possible utilities and share experiences and ideas with one another."

"The different materials and tools have been chosen to accommodate different types of learning styles. Specific examples make it easier to understand the underlying theory. Supplemental material also provides the opportunity for differentiation in relation to the course participants' varying reading level and ability to deal with abstract concepts."

"The reason why this course is constructivist is because the students' project in relation to the college's local curriculum should be individual, which is why it is necessary to have a teacher-student dialogue."

Based on the above, the explicit reasoning includes the need to learn how to search for information, create close links between theory and practice, develop specific skills, offer work-based training, encourage experience acquisition and provide project supervision.

The template used in the pilot project is also designed in a way that encourages developers to provide reasoning for every single activity/course component. Specifically, the trialled template contains text boxes to provide reasoning for the choice of tools, communication and collaborative forms and the educator's role in each activity. It also includes a text box for a more general reasoning for the choice of organisation form. Going forward, it could be worth considering whether settling for that would lead to more and increasingly explicit reasoning.

Annex 1: Overview of certified courses

This annex contains a complete overview of the courses submitted for certification. It also contains an overview of the courses, categorised by duration and institution as well as a brief description of the dialogue with eVidenCenter in that regard.

Forms of education

For each course, the name of the institution and developer/educator who submitted it has been indicated (Table 2).

Table 2. Overview of certified courses in alphabetical order by provider

Provider	Developer	Title	Form of organisation	Duration
BC Syd	Anni Trier	SharePoint Online - Basic	Location-flexible course via Skype with two hours a week over a four-week period	8 hours
EUC Nord	Brian Dahlstrøm	AMU course: Spreadsheet design and automation	Blended learning with flexible online instruction and physical attendance	2 days
EUC Nord	Gitte Bové	AMU course: Debtor management	Blended learning. Physical attendance may be required.	2 days
EUC Nord	Joan Vang	AMU course: Designing websites with CMS and WordPress	Flexible online instruction Physical attendance required.	2 days
Kold College	Pia Valencia	EUD Student: Emil's Dream	Blended learning in a ordinary classroom and kitchen with electronic contact to teacher	1 week
Roskilde Handelss-kole	Dorthe Schoubye og Mik Gillesberg	Education-specific course in the field of office, commerce and retail	The course is offered as on-site and online education (with the option to attend an onsite start-up meeting)	5 weeks
TEC	Claus Frøberg	AMU course: Storage and shipment of hazardous goods	Blended learning with distance learning on theory, while the practical component is offered through education requiring physical attendance over 2½ days.	5 days
TEC	Lars Andersen	AMU course: Warehouse economics	Blended learning through which introduction to theory, problem solving and continuous feedback and scaffolding is offered through distance learning, while the practical component is offered through education requiring physical attendance over three days	5 days
TEC	Rune Almgren	AMU course: Forklift	Blended learning through which the theory is taught through distance learning while the practical component is offered through education requiring physical attendance over four days	42 hours
UCRS, Mercantec and Learnmark	Christiane Bech, Ole Wang Lønbæk og Kurt Hansen	Being an employee in the workplace of the future (digitalisation)	100% e-learning spread over four weeks	4 days

Provider	Developer	Title	Form of organisation	Duration
UCRS, Mercantec og Learnmark	Christiane Bech, Ole Wang Lønbæk og Kurt Hansen	AMU course: Practical application of LEAN tools	Blended learning spread over five weeks	5 days
Uddannelsescenter Holstebro	Rene Tolderlund Jakobsen	VET - Education-specific course: Office	Blended learning with assignment sub-missions every Sunday as well as online presentations. Supervision on request by e-mail, phone, Skype or face-to-face meetings at the college.	5 weeks
Uddannelsescenter Holstebro	Rene Tolderlund Jakobsen	VET - Education-specific course: Retail	Blended learning with assignment submissions every Sunday and online presentations. Supervision on request by e-mail, phone, Skype or face-to-face meetings at the college.	5 weeks
Knowledge about data - Knowledge Centre for data-base service and business development	Søren Mogensen	Elective subject 'Sales through multiple channels' in Retail training with the following specialisations: Social media - SoMe and influences	Online or blended learning	4 hours
Viden Djurs	Bo Størup Nielsen	AMU course: Working together in groups in a business	Attendance during working hours. 3½-4 hours online	2 days
Viden Djurs	Bo Størup Nielsen	AMU course: Work planning in administrative roles	Attendance during working hours. 3½-4 hours online	2 days
ZBC	Henning Hartwig	AMU course: Placement of results and balance sheet accounts	Blended learning with digital course material and garage-based physical attendance learning	2 days
AABC	Lars Petersen og Hanna Weichert	VET - Education-specific course: Retail	Blended learning spread over five weeks with synchronous supervision and online examination via Skype	100 hours
AABC	Lars Petersen og Hanna Weichert	VET - Education- specific course: Event	Blended learning spread over five weeks with synchronous supervision and online examination via Skype	100 hours
AABC	Lars Petersen og Hanna Weichert	VET - Education-specific course: Commerce	Blended learning spread over five weeks with synchronous supervision and online examination via Skype	100 hours
AABC	Lars Petersen og Hanna Weichert	VET - Education-specific course: Office	Blended learning spread over five weeks with synchronous supervision and online examination via Skype	100 hours
Aalborg Handelsskole	Lars Ringgaard Kristensen	Marketing C	Individual, time- and location-flexible full-time programme with contact to teachers via e-mail, phone, text messaging or Adobe Connect	2 weeks
Aalborg Handelsskole	Lars Ringgaard Kristensen	AMU course: Using large data volumes in spreadsheets	Either distance learning with webinars, feedback conversations and presentations via Adobe Connect or physical attendance at the college's 'Open Learning Centre'	1 day

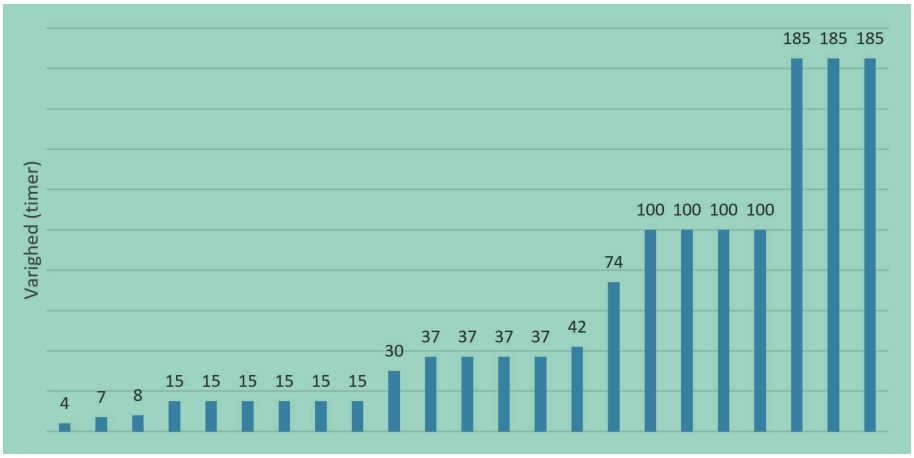
The subject/title of the course has been retrieved directly from the descriptions in the column with the title. For the sake of comparison, I have created a summary of the different forms of organisation.

Length of the courses

It appears that the majority of the courses are organised as blended learning. The duration of the courses varies from 4 to 185 hours.

The certified courses have an average duration of 59 hours. Two out of three of the courses have a shorter duration, while the rest have a longer duration (Figure 2).

Figure 2. Duration of 23 certified courses



Dialogue on certification

In many cases, the educators have had an extensive dialogue on the certification, as it has entailed different forms of teamwork and dialogue with their line managers. In some cases, this dialogue has taken place over several weeks.

They have also been in dialogue with an employee from eVidenCenter. Moof this dialogue has been in writing. First, the college would submit a description, which would prompt comments, after which a revised description would be submitted and finally certified. For the most part, 1-2 comments were provided for each of the 23 certified courses.

In addition - and as mentioned before - some educators have been in a verbal dialogue with an employee from eVidenCenter. This became necessary in some cases as the educators struggled to complete the template because they lacked knowledge of the terminology in the field. In other cases, an agreement to have a verbal dialogue was made in advance as the college had requested an introductory presentation from eVidenCenter.

Going forward, it is not recommended to hesitate with such introductions, as mentioned before. In fact, it should be clarified from the start whether the involved educators have a need for upgrading of skills to be sufficiently able to participate in the certification.

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