



# INTERNATIONAL STRATEGIC CONCEPT FOR CREATING DIGITAL LEARNING CONTENT FOR CUSTOMERS THE TENSION BETWEEN PERSONALIZATION AND STANDARDIZATION

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**Abstract:** *We all know by now that the importance of topics related to the digital world has increased enormously after the Covid-19 period. Many companies or state institutions whose main business areas were in education or training and consulting have had to come up with many innovative models to remain competitive in the market or to keep their business running. For some companies, topics such as digital learning, eLearning or virtual training have suddenly and almost surprisingly become very important, although they have been thinking about these topics for years, but never implemented them until the corona period. For internationally active companies, the big question was how best to roll out such a concept of developing digital learning offerings tactically and strategically internationally, but in such a way that useful results are available in a short time. The challenge was to develop a functioning concept in different languages, in different cultures, according to different standards, in which customers and internal employees in the different countries can benefit from it. On the one hand, there was the personalization of the digital learning content in terms of scope, learning culture, etc., and on the other hand, the project process, uniform strategic concept and its sustainability. This paper explores this area of conflict in general, but also takes a look at the practical solution using the EPLAN GmbH & Co. KG company as an example.*

**Key Words:** *Learning Content, Education, EPLAN, Stanardisation, Personalisation*

## 1. INTRODUCTION

The COVID-19 pandemic dominated our lives for a total of three years. The negative consequences of the crisis were clearly felt in all areas of life. At the same time, the virus crisis triggered various discussions: Does the digitalization push present opportunities for the world of work and the education system, for example? What has

our life looked like since Covid-19 and how could coronavirus change our society?

We now know:

- According to studies, corona has accelerated the digitalization of the world of work.
- The proportion of all employees working from home has risen from 12% to 25% in 2022 and 36% in 2023 in Germany as a result of coronavirus (Statista, 2023). In the USA, this desire was 29% according to the latest statistics (Statista, 2024). This not only increases the pressure on companies to create a digital infrastructure for working from home. It also raises the politically debated question of whether a right to work from home needs to be enshrined in law.

- According to studies, working from home is predominantly viewed positively.

What impact has it had on education?

- There is still a lot of catching up to do internationally when it comes to the digitalization of schools and universities.

- The studies from 2020 still show that almost every second school in Europe is having great difficulty getting through the coronavirus crisis. Pupils and students have learned less (Magomedov, 2020).

It is now well known that the pandemic has provided a long-term boost to digitalization and has not brought about a return to analogue learning.

The fact that corona has worsened the educational opportunities of disadvantaged people (people who are less digitized) and made the education system more impermeable has now changed, because a lot has been done in terms of digitization in the last 5 years.

For many industrial companies whose core business depends largely on consulting, training and education in general, this period was a deep crisis that decided whether they would stay in the market or be lost.

So it was the turning point to decide whether or not to get seriously involved in digitalization (LpB BW, 2021).

## 2. PERSONALIZATION OF LEARNING CONTENT - YES OR NO?

The fact that learning offers can be personalized via Learning Management Systems (LMS) or Learning Experience Systems (LXS) with corresponding advantages and disadvantages is nothing new and has been known for years [6]. However, when it comes to the creation of learning opportunities that need to be made available to customers in an international context within a certain period of time, the decision on personalization and customization is an essential strategic issue that has many consequences.

Imagine that a company with an international training and consulting business has to change its previous face-to-face training concept to virtual instructor-led training or self-paced training (using eLearnings) within 6 months.

What impact would it have on planning the creation of learning content? These effects are shown in the following table.

Table 1. *Experimental results*

Topic	Impact no. 1	Impact no. 2	Impact no. 3
Creation of learning content in various languages	Who creates them internationally?	How much time do you need for a piece of content?	How long does it take to localize the content into the target language?
Effort, implementation and costs	How is the content provided to customers in all countries?	What IT effort is required?	What costs are involved?
Cross-cultural differences	Is non-personalized and customized content accepted in the same way in all countries?	How important are differences in learning cultures in different countries?	Does an international offer of learning content in local languages jeopardize the timeline for project achievement of 6 months?
Audiovisual components and the learning effect	Does the content have to contain audio speakers and subtitles or only one of them?	How do you organize the audio speakers (if necessary) and translation process in the individual countries with regard to the timeline of 6 months?	According to current learning theories and studies, does personalized learning content mean that the learner learns better?
Labor resources and training of manpower	How do you train the content creators?	Will the employees involved in the project want to support the project and be motivated?	Should everyone create the content at the same time according to their own ideas for their own country or should there be a standardized procedure

			with standardized content?
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So if it is a project planning that has a fixed timeframe, the decision on how the learning content is created is crucial to the success of the project or determines whether a lot of money is wasted with the option of jeopardising the entire company.

Personalization of learning content is therefore not essentially shaped by the question of whether the theory on this topic attests to a positive effect on customer behavior, but rather by many internal company interfaces that determine the success of the idea.

After all, who can guarantee that the personalization of learning content is better for customer acceptance than the standardization of learning content?

### 2.1. Personalization vs. standardization of learning content

In contrast to personalization, which stands for the adaptation of a product to the needs of a customer, standardization means the unification of types, dimensions, structures or procedures in order to create standards.

In the context of creating learning content, what would personalization and standardization mean for an international company?

The following table shows the differences and effects of the respective topics.

Subject	Effect when the subject is personalized?	Effect if the subject is standardized?	Comment
Conception of the learning content	The learning persona must be defined at the design stage. This must be individually adapted for each persona.	There is a compromise-based concept for everyone.	The process and effort involved in designing standard content is simpler.
Creation of the learning content	When creating personalized content, several teams must find their own ways of implementation. Among other things, individual storyboards have to be written for the learning content.	The content is created by the main team. Other teams only have to translate the content created by one team.	Standardization means significantly less use of resources. Time is also saved and coordination of the overall project is easier.
Localization (translation of the learning in other languages content)	Very complex process as individual standards apply to each learning module.	Structured, standardized process.	In the case of standardization, time and costs are saved.
Quality control process during the creation of the learning content	Much more complex as there are no precise standards. The various teams	A central team can check the created learning content	Standardization saves time and costs.

	have to check their own content, no central team can be defined.	according to defined standards.	
Process for regular review of reusability due to learning content obsolescence	Although it is possible to check reusability, the process is highly complex to implement as many teams have to be involved.	It is easier to check reusability according to certain standards, and international implementation is also easier.	Meeting specific deadlines is much more difficult with personalized processes.
Publication on a LMS/LXS	Significantly more complex, as individual publication and description texts as well as individual settings are required.	Significantly easier as descriptions and texts can be translated into many languages with less effort once they have been created.	Individual additional manpower required in the individual branches. No central control possible. Implementation effort greater.
Man-days effort	Significantly higher.	Significantly lower compared to the personalized option.	

Another positive side effect of standardization is that a uniform international learning concept enables users in different countries to be trained in the use of the product software according to defined workflows and paradigms. This means that users speak the “same language globally” when it concerns the EPLAN product.

### 3. BEST PRACTICES FROM EPLAN

#### A. Development of the project

There is a slight difference between industrial companies on the one side and schools and universities on the other side, when talking about the topic of education. The main difference lies in the definition of the concept of education in terms of time in relation to knowledge. Time is a decisive factor for industrial companies because time means money (Eplan, 2024). The success of the company and thus its financial stability depend on measuring time to market as a decisive KPI. In the case of state-funded or partially funded educational institutions, the COVID-19 period has also caused massive strategic and organizational adjustments, but such institutions have had fewer concerns about financial stability than most industrial companies (Caron, 2014).

However, both types of organization had one thing in common. And that was the relationship to their customers. Regardless of whether they were pupils or students or

commercial customers, in both cases the customers had to be satisfied with the offer. In the case of the project described here, it was also about the mutual benefit, for the customer and for the company, which should emerge from the company's interaction with the customer (Eplan, 2024).

The project described here was developed by EPLAN on the basis of an analysis of customer requirements for learning in Europe, Asia and the USA. This analysis, which is not publicly accessible, revealed that there is a need for new forms of training in these geographic areas, including training times, e.g. some of which should be carried out after normal working hours or at weekends. It was now time to make serious changes to the previous learning concept, especially as the provision of user software was switched from a software service contract to a subscription.

In order to respond to customer requirements while supporting the newly established subscription model, the development and the offering of the online training courses (VILT) in addition to the existing classroom training courses was necessary and, secondly, entirely redevelopment of the self-paced learning segment, taking into account the characteristics of the various learning behaviors from the different countries.

#### B. Definition of the project objectives

One of the initial steps in implementing the project was a clear definition of the project objectives and involvement of the stakeholders (Rajeev, 2021). These project objectives included:

- To develop a sustainable learning concept that is consistent with and complements the existing EPLAN Academy learning formats
- To develop the EPLAN definition of "eLearning"
- To establish an international standardization of the project implementation
- Not to disrupt the existing training business, but rather to positively influence it
- To support the renewal business by providing the annual update training in eLearning format as part of the globally rolled out subscription model for customers (also in China, by the way, taking into account the Chinese provider environment)
- To develop a corresponding rollout, together with the other departments such as EPLAN Cloud Team, Marketing etc.
- To have and maintain motivation and fun at work

These project goals were very diverse and interdisciplinary, yet they had a decisive influence on the success of the project, especially because the project time was very tight and goal-oriented work on the success of the project was of crucial importance.

### C. Target groups

There were three main target groups that were to be served with the new knowledge, but also with new educational materials and forms. These were: the industrial customers, education customers and the internal employees of the company.

The reason for it was that EPLAN had previously trained the industrial customers mostly in the face-to-face learning formats. By providing the so-called EPLAN Education software application for students and teachers, their educational customers were consequently a further customer group, so that the learning content should also be usable for educational institutions.

Another target group were and are the internal EPLAN employees, as for example trainers or consultants. The content is particularly interesting for them in order to prepare for the new topics, especially the topics relating to update training for the new EPLAN software version.

This paper specifically addresses the project in relation to the customer group of EPLAN Education customers.

### 4. EPLAN EDUCATION

EPLAN Education is a department of the company EPLAN, which takes care about the needs of educational institutions, students, and educators (teachers, lecturers, professors). For all students there is the possibility to download the last three versions of the EPLAN Education software free of charge via the EPLAN website customer (Eplan, 2024). With the offer made by EPLAN Education unit, prospective engineers at schools and universities can use various software solutions. This includes not only the main EPLAN product, Electric P8, but also add-on modules such as Pro Panel, Fluid or Preplanning. This means that the range of projects that can be created is very extensive, and teachers and students can use EPLAN Education software to realize everything from simple to more complex projects, like solutions related to Augmented Reality. The unit also provides a wealth of additional information for learners, such as video installation instructions, information on the new features of the new version and, information on the eLearning modules for educators and students. The landing webpage is presented in the following figure:

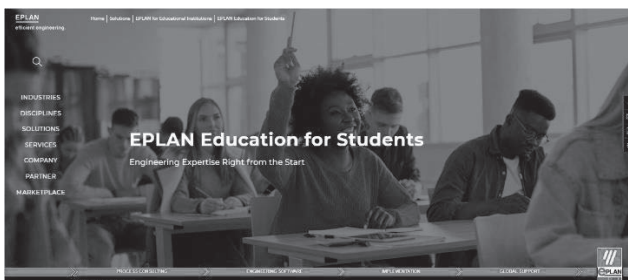


Figure 2. EPLAN Education – Landing Page in English

The new self-learning concept in eLearning format is used at over 2.500 educational institutions and has

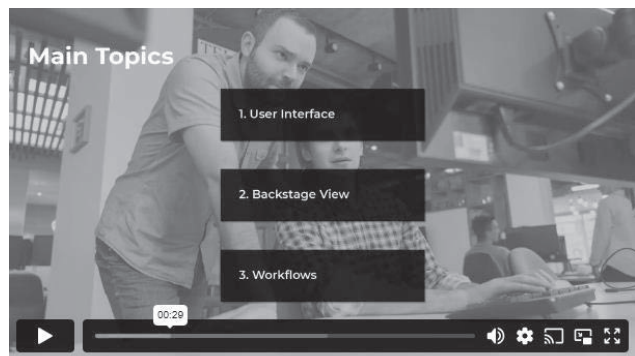
already been used by 101.000 students worldwide in the last 3 versions alone. This eLearning-based training project closes the gap between theory and practice and ensures a decisive knowledge advantage. The main features of the EPLAN Education eLearning-based solution are:

- Students can learn how to engineer with EPLAN from the start, and are empowered to create an error-free project
- The materials are fully localized in 16 languages (including audio and subtitles)
- Access to the learning materials is fully open, which means that students can work with the materials outside of the school, enabling hybrid forms of learning such as flipped classroom or blended learning
- Lecturers are not only given access to the extended learning materials, but also to solutions, which is helpful for creation of the own didactical lesson plan
- Lecturers also receive ready-made, assessment-worthy templates so that they can also directly assess their students' performance based on these

More information about the functions can be found in the following video:

Table 1. EPLAN Education Training for Instructors – Trailer Video

Language	URL
English	<a href="https://vimeo.com/648545410/5a179b971e">https://vimeo.com/648545410/5a179b971e</a>



### EPLAN Education Training for Instructors

Figure 3. EPLAN Education for Instructors – Explainer Video

The learning content is accessed via the Learning Management System (LMS) developed by EPLAN itself, which is provided via the EPLAN Cloud. The following illustration shows the user interface:

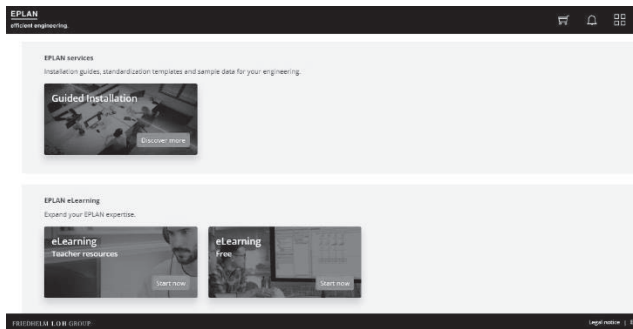


Figure 4. EPLAN Cloud – Access to eLearning

The LMS is structured in such a way that the navigation is analogous to the navigation of the EPLAN software, where so-called navigators are used. This ensures that the user does not have to learn anything new when using the LMS but can enter the system spontaneously and switch seamlessly between learning and using it. This means that not only educational institutions but also lecturers and students are fully equipped with all EPLAN related learning materials and a modern learning environment.

### 5. METHODOLOGICAL-DIDACTIC CONCEPT AND PROJECT IMPLEMENTATION

For many years, the EPLAN Academy had been developing its own methodological and didactic training model for the basic and update training courses, which served as the basis for the development of the new, self-directed learning materials in eLearning format. However, the existing methodological-didactic training model could not be adopted as it was not fully suitable for self-directed learning. It had previously been developed for the face-to-face training courses conducted by a trainer.

When the new EPLAN software platform, for which the update training was developed, was in the final phase of development, the EPLAN's Professional Education team, responsible for creation of the new self-paced learning form, met with other stakeholders, colleagues from the other specialist departments such as Research & Development, QA, Technical Documentation and EPLAN Academy with the aim of jointly agreeing which innovations should be incorporated into the eLearning concept of the new so called Update Training to be created in eLearning format. In this way, the Professional Education department wanted to ensure that certain aspects were not lost. There are numerous articles on the role and importance of stakeholder involvement in the project planning phase, we refer here to some (Lukac, 2016; Saima, 2021).

Due to the limited project duration of 6 months for the entire project, the Professional Education department, which is mainly responsible for the development of the self-learning training, was granted exclusive access to the developer version of the EPLAN software so that they could review the new updates of the EPLAN platform developed by the research and development team and the help system developed by the technical documentation together with the Training Academy team in time, understand the new software features and later demonstrate them in the eLearning content.

Very important step was that the Professional Education team first had to understand what is needed to be done before they could start developing the learning content. In addition, they had to agree with the stakeholders which topics should be covered in the self-paced learning modules and, above all, how.

The question of "how" has many aspects that need to be considered, such as the cultural differences in learning in different countries, organizational aspects related to the localization process as each module created in the source language needs to be localized (translated) into the other 14 languages, training of colleagues in other EPLAN branches to enable them to localize content, checking the possibility of using good quality audio and text translations, etc. These are just some of the important aspects that had to be considered before starting the implementation process.

The content developed was primarily intended to be used in the education sector, i.e. by educators and students in educational institutions.

A team was formed with representatives from various departments and there were many meetings, consultations and tests. The importance of time and project planning, but above all the working atmosphere, were self-evident. Constructive discussions and a culture of error were encouraged.

By the time everything had been decided, the Professional Education team had developed the procedural, methodological and didactic concept, which was to be uniform but accepted in different countries.

Then it was time for implementation.

The 40 contents in English, divided into 5 main topics, were created using the two technical standards IEC and NFPA used in the USA and in other international regions.

This content was then localized into 14 languages (English, German, Italian, Spanish, Dutch, Danish, Swedish, French, Russian, English (USA), Korean, Japanese, Chinese, Portuguese (Brazil), Czech.), with the result that 600 learning contents were created within 6 months, which were also deployed in the self-created LMS during this time.

In the project, not only the above-mentioned features were implemented, but also other features, namely analytics, reporting and a feedback system that enables EPLAN customers to give feedback on the system and the content or to express wishes as to what content they need for daily engineering with EPLAN. The following links provide access to some of the trailer videos that were part of the project:

Table 2. Update Training – Trailer Videos

Language	URL
Italian	<a href="https://vimeo.com/643989021/9ed7d5c8a5">https://vimeo.com/643989021/9ed7d5c8a5</a>
Spanish	<a href="https://vimeo.com/643988439/2c5e473e00">https://vimeo.com/643988439/2c5e473e00</a>
English	<a href="https://vimeo.com/643988077/2791861c18">https://vimeo.com/643988077/2791861c18</a>
Chinese	<a href="https://vimeo.com/670251665/af3f0223b8">https://vimeo.com/670251665/af3f0223b8</a>
Korean	<a href="https://vimeo.com/661965883/f34fd1bf71">https://vimeo.com/661965883/f34fd1bf71</a>

## 6. ELEARNING AWARD

No other company is known to have achieved this to this extent, 600 learning contents, created within 6 months and localized into 14 languages and two standards, in this quality and in this time.



Figure 5. eLearning Award - Learning transfer

This has not gone unnoticed by others. For example, the eLearning Journal Germany awarded the project with the eLearning Award 2024 for the specialist area of learning transfer.

## 7. CONCLUSIONS

The project presented here is an exemplary scenario for the development of international learning programs for educational institutions and students. It became clear that in this particular case, standardising the creation of learning content was a better option than personalisation. The success of the project depended on several factors, including a proper needs analysis, proper project planning and stakeholder involvement, and the development of the methodological-didactic model, in addition to the development of a dedicated LMS and the organization of the localization scenario. Achieving all this within 6 months and reaching 600 localized learning contents in 14 languages and in two standards is unique so far.

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