Designing and Sequencing Learning Content for Adult Educators´ Competence Development in Open Web-Based Learning

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Abstract

The paper reports on the development of the online learning portal OWL (by the German Institute for Adult Education, funded by the Federal Ministry of Education and Research) aiming at a new approach for the professional development of adult educators. An important aspect is the design of learning content, on which this paper focusses and how the combination of the backward design and the Classification of Educational Goals to sequence content helps adult educators to solve challenges in their daily work. A three step model guides the developer of online learning environments from selecting the learning target to the assessment design and finally to the creation of suitable content and exercises. The full-launch of the system is scheduled for 2020.

Keywords: *e-learning, professional development, course design, learning goal taxonomy*

1. The OWL Project and the users needs

For only a minority of adult educators in Germany hold an initial pedagogical qualification, the open webbased learning space (OWL) aims to professionalize adult educators. As focusing on pedagogical-psychological knowledge and skills as central competencies to the conceptualization, implementation, delivery and evaluation of teaching and learning in adult education, a main challenge of the OWL-Space is the necessity to transfer knowledge into action [1].

The learning arrangements in OWL are designed along a twofold strategy: (1) a situated learning approach based on action oriented goals and (2) competence dimensions based on learning goals.

The learning platform aims towards an improvement of pedagogical and psychological skills of adult educators. For many adult educators the inhibition to extend their own competencies may be too high. That´s why the users already at accessing the platform for the first time receive suitable and quickly implementable content in order to keep their motivation on a high level. A special focus is to put on the motivation and needs of adult learners which becomes present in the development of that approach.

For the target group it is not just about having access to knowledge anywhere and anytime. It´s more about the access to useful and in particular relevant knowledge [2]. Sustainable learning of adults means the learner has the possibility to realize learning actively, self-directed, constructive and situated [3].

In order to meet the needs of the target group, 1,305 adult educators were asked to express their needs regarding their professional development in the beginning of the project [4]. The answers were clustered around topics of higher education. The collected questions of the educators and challenges already aimed at different stages of professionalization.

2. Backwards design and learning goal taxonomies for eLearning

The first approach of the OWL-learning-platform is to support the learners dealing with their challenges by sequencing suitable content and supporting tasks. In order to realize that, contents and tasks were developed that address the users´ skills: acquisition of knowledge, meaning making of knowledge and transfer of knowledge to achieve longterm comprehension and application.

In July 2018 a small group of adult educators tested the learning platform and a learning-path. The users replyed that the already existing learning-paths are too long and sparse and it´s not always clear why which content follows next. Accordingly the feedback of the group led to a more intense discussion on user friendly and learning promoting design of learning-paths.

This challenge led to an adapted combination of the Backward-Design-Model [5] and the Learning Target Taxonomy model [6]. The Backward-Design-Model defines three stages: identifying desired results (1), determining acceptable evidence (2) and planning learning experiences and instruction (3). The strength of the Model is that teachers think purposefully about curricular planning. The learners get what they really need, nor is the model offering a rigid process or prescriptive recipe and can easily be used for present or e-learning. The model even indicates using the different facets of learning and understanding to describe results and plan assessments, the content is based on.

The taxonomies of Bloom and Krathwohl can help to develop learning content because they describe the process of learning. The OWL-platform addresses adult educators on different levels. This means that the project aims towards welcoming and well introducing every learner no matter how skilled the learner is. Depending on the topic, for each learner individually the starting level is considered, ie whether and which prior knowledge and skills can be assumed, and at which learning level the users must be in order to master the challenge. The learning content then aligns with this classification.

3. Designing and sequencing e-learning-content with the backward design model

For e-learning-content the key to successful transfer and application of knowledge is to begin with the desired outcomes and plan in reverse, too [7]. As a result, a three-stage model has been developed for creating motivating and learning-friendly learning-paths on an online learning platform, whereby the individual stages build on each other and also make it necessary to draw conclusions about previous levels. The model is based on the model of the learning taxonomies and the backward design model.

Designing and sequencing e-learning-content with the backward design model

1 DESCRIBING THE LEARNERS CHALLENGE
- What do users expect?
- What is the challenge users want to master?

Describing the actual state of progress.
Describing the learning goals and target level of progress.

2 PLANNING THE FINAL ASSESSMENT
- What skills and knowledge on what stages do the learners need?
- How to design an assessment in order to show that the intended outcome has been achieved?

Designing an assessment that indicates the needed skills and knowledge on the target level.

3 SEQUENCING AND DESIGNING CONTENT AND TASKS

A What kind of content and tasks are neccessary to reach the learning goals?

B Which sequence is supporting and motivating the learners success?

C What kind of media and design is supporting the learners attention and learning?

Fig. 1. Designing and sequencing e-learning-content model

3.1. Designing the learners challenge

This stage is about determining what the expectations of the target group are regarding the usability of the learning platform and how the group ideally wants to use it. The answers result in specific requirements for the user-guidance which are implemented in the technical and content design.

It is about identifying the individual situation of the user for whom the content is relevant when creating the learning paths: What context do they work in, what concrete challenges do they face, what is their motivation to engage with a specific learning path and what exactly do they want to know? This knowledge is the basis for the next steps and is crucial to ensure a transfer of the learned content. It is reflected both in the introduction which leads into each learning path and shall trigger the learners´ motivation for choosing this specific learning path, as well as in the assessment at the end of a learning-path and forms the basis for the learning content and tasks.

The results of the mentioned survey form the basis for the first stage. Herewith it is ensured that professional preparation of targets, assessments and content as well as the learners' learning intentions are considered and combined. Regarding this concrete learning goals can be described.

Resulting from the description of the initial situation and the learning objective the taxonomy levels develop. They define the level users are at when they start the learning path and which level they should reach in order to achieve their learning goal. This leap is the basis for working on the next levels of the model.

1. Describing the learners challenge
Questions from the target-group:
• What can I do, if participants are stuck, don't want to learn seem to have difficulties with either me, the structure, methods or the group?   • What is learning resistance and how can I recognize it?   • What causes learning resistance and how can I deal with it?
Actual situation of users:
The course is running, the teacher is well prepared, the topic fits and most of the course participants are motivated. An ideal situation. But sometimes individuals do not seem to be able to follow the course. They disconnect themselves from the topic, do not or only with difficulty solve tasks or refuse to cooperate. In that case learning resistance can be the cause. Learn in this learning path what learning resistance is, where it comes from and how you can meet affected participants.   *Participants coming from level „low":*   Teachers are dealing with participants that actively or passively don´t want to or cannot learn. They are asking themselves: What can I do? Where does it come from?
Goals and target-level
Middle (analyze)   Teachers know what resistance is and where it comes from. They have skills and knowledge for dealing with resistance in a concrete situation.

Fig. 2. Exemplary application of the first step to the topic „Dealing with learning resistance"

3.2. Planning the final assessment

The main focus of Stage 2 is to ensure that what is assessed and how it is assessed logically follows the goals established in Stage 1. Though assessments are of high significance for the second access to the OWL learning platform where the growth of competencies will be validated, each learning-path ends with final tasks in order to demonstrate efficient learning. Therefore appropriate assessments are needed for gathering this information.

For this, it is first of all important to define which knowledge and skills are necessary at which stage for achieving the learning target. As a result, the assessments consist of various tasks that align with the taxonomy levels defined in step 1. By working on closed tasks users can demonstrate that they understand the content and are able to transmit it. In transfer tasks, users shall apply the learned on their own situation. This task requires students to use the knowledge and skills learned in an authentic, real-life situation.

2. Planning the final assessment
1. (MC, understanding) What might happen, when you ignore learning resistance from individuals?
2. (MC, understanding) Is it possible to completely avoid resistance in a course if teachers are well prepared and respond to the wishes and needs of the participants?
3. (MC and free answer, analyze) Remember a situation you were confronted with resistance. How did the resistance show up? In which way did it appear and against what aimed the resistance? In which area do you assume the origin of the resistance?

Fig. 3. Exemplary application of the second step

3.3. Sequencing and designing content and tasks

The main focus of stage 3 is to ensure that learning activities and plans logically flow from the goals determined in stage 1 and the assessments from stage 2. Regarding e-learning three topics are relevant: The selection of appropriate content and tasks, the order in which they can be selected, and the media with which the content is presented. To meet good decisions, the following questions are useful:

- What content is necessary to achieve the learning objective and which are expected by the target group?
- What tasks help to monitor progress and motivate users to deepen what they have learned? Which task types and activities are suitable for the current learning level?
- What kind of feedback do users need in order to orient themselves, to improve their work and to keep learning motivated?
- Which order of content is meaningful and engages the user's interest in learning and holds their attention and excitement throughout?
- In which places is it necessary to offer the possibility to access further and deeper contents to meet the different needs of users through differentiation?
- Which design and which media types are suitable for the learning content in order to make it varied and clear and to support learning? Which media are suitable for the target group?

3. Sequencing and designing content and tasks		
sequence	content & tasks	media
Step 1: Help, my participants are exiting – what can I do?		
1.1	Validating learning resistance positive and negative. Which possibilities arise through learning resistance? Comprehension task: Read the following statements and consider, in which situation the teacher can use learning resistance in a positive way.	Image-Slider with examples
1.2	Presentation of methods for dealing with learning restistance. Comprehension task /MC: Please read the following example and try to find out which of the following actions you could take to improve the situation.	Icons to illustrate the different methods
Step 2: Learning resistance – Trigger and Cause		
2.1	Different kinds and expressions of learning resistance Analysis task and problem solving task In order to be able to decide which course of action is appropriate for making learning possible again, you often have to infer the external behavior of your participants for finding the cause. Think of possible actions and try to assign the scene to a specific cause in the following examples. You may also have already ideas about how to improve the situation.	H5P Dialog cards with images and description of the different triggers

2.2	Presentation and categorization of causes of learning resistance Comprehension task: Please read the following statements and consider, whether they are right or wrong.	Image-Slider with illustrations and descriptions
2.3	Basic information on learning resistance Analysis task and comprehension task It´s usual to learn in school and also in vocational training. Adults also often visit courses because they are encouraged to do so for various reasons. Teachers then face the challenge of making learning possible where resistance exists. Consider specifically for your context, whether or how you can avoid or implement the following points: Now you have read about the topic learning resistance. Rate the following questions with 'right' or 'wrong'!	Checklist with important facts of how adults want to learn
Step 3: Assessment		

Fig. 4. Exemplary application of the third step

4. Conclusion

The aim of the project is to address and motivate the target group of adult educators and empower them to face challenges and learn how to deal with them. And by that to realize that training also in other areas of adult education has a value added for them. By applying the model on the learning platform we hope to achieve that goal. The next step will be to test the new designed learning-paths with the target group and validate the usefulness. This will be in July 2019. An asset of the OWL-project is that a lot of data will be collected that can be used to identify and measure if the intended learning success really happens. Coming from the question "how do adults learn effectively in an online environment?" the platform offers the opportunity to evaluate if the applied model leads to the effects intended. This leads to an ongoing improvement of the design of the learning content and tasks. In a bigger picture this will be a contribution to the professionalization of adult educators in general.

References

[1] Schrader, J. „Fortbildung von Lehrenden der Erwachsenenbildung: Notwendig? Sinnvoll? Möglich?: Bedarf und Angebot im Überblick"; Schrader, J.; Hohmann, R.; Hartz, S. (Eds.) Mediengestützte Fallarbeit. Konzepte, Erfahrungen und Befunde zur Kompetenzentwicklung von Erwachsenenbildnern, Bielefeld, Bertelsmann, 2010, 25-68.

[2] Govindasamy, T., Successful implementation of e-Learning – Pedagogical considerations, in: Dringus, L., Sellani, R., Internet and Higher Education 4 (2002), p. 287-299.

[3] Schüßler, I & Kilian, L., Zum Wandel akademischer Lehr-Lernkulturen: Von erzeugungs- zu ermöglichsdidaktischen Lehr-Lernarrangements, in: Grieshop, H. & Bauer, E., Lehren und Lernen online. Lehr- und Lernerfahrungen im Kontext akademischer Online-Lehre, 2017, p. 83-108.

[4] Schön, S.; Sahlender, M.; Brandt, P.; Fischer, M.; Wintermann, O. Information und Vernetzung – Bedarfe und Erwartungen von Lehrkräften an online-gestützte Fortbildungsangebote, Retrieved from https://www.die-bonn.de/doks/2015-erwachsenenbildner-01.pdf

[5] Wiggins, G.; McTighe, J. Understanding by Design Professional Development Workbook, 2004.

[6] Bloom, B. S., Engelhart, M. D., Furst, E. J., Hill, W. H., Krathwohl, D. R. (1956). Taxonomy of educational objectives: The classification of educational goals. Handbook l: Cognitive domain. New York: David McKay Company.

[7] Wiggins, G.; McTighe, J. The Understanding by Design Guide to Creating High-Quality Units, 2011.