Reviving Technology Enhanced Learning Activity in the Context of Distance Learning Curriculum Quality Assessment Dimensions

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Abstract. The paper presents research implemented in the area of technology enhanced learning (TEL) activity in the context of distance learning curriculum (DLC) quality assessment (QA) dimensions. As education institutions maintain curriculum – driven approach, learning activities should be revived and constantly updated on the basis of DLC QA dimensions. TEL activity QA factors are being defined in the paper, as well as theoretical findings and empirical research results to validate defined TEL activity QA factors.

Keywords: reviewing and reviving learning activities, technology enhanced learning (TEL) activity, distance learning curriculum (DLC), quality assessment dimensions (QA)

1 Introduction

Researchers [1] discuss definitions and characteristic features of distance learning and teaching, and technology enhanced learning (TEL). Theories of education provide various research findings on how people learn, on how they should learn to learn, and how learning should be facilitated. In the context of higher education, curriculum – driven approach is naturally prevailing, but the shift of the learning organization process is inevitably being felt. Scientists search for learning organization methods [10], [26], that encourage learner independency, self-directed and collaborative learning through communication and collaboration, as well as networking among learners themselves.

Learning enhancement starts with the curriculum design, continues with the facilitation of learning during the learning organization process, and results into recognition of competences necessary for an autonomous acting. This article will focus on the quality of curriculum design and on TEL activity QA factors.

The aim of this research is to analyse how TEL learning activity can be revived in the context of DLC QA dimensions.

The objectives of the research are:

1. to present DLC QA dimensions,
2. to discuss DLC QA factors in the context of learning strategy consistency dimension,
3. to identify the factors that should be assessed in order to revive TEL activity,
4. to evaluate application of TEL activity revival factors in the context of reviewing and reviving TEL activities.

The research methodology covers theoretical literature analysis, as well as empirical research. The online questionnaire was used for international audience and the responses were collected in 2009 - 2010.

2 DLC QA dimensions

Rapid development of ICT often brings the feeling of admiration and obsession, and technological resources start affecting curriculum design. DLC design process is rarely based on theoretical and scientific recommendations. QA dimensions will be explained here as a starting and contextual point for further research questions raised later in the paper.

DLC design and QA. DLC is "*a form of teaching/ learning when a learner does not have a direct contact with a teacher. Communication is ensured with ICT tools*" [14], p.23. DLC design can be discussed from a number of perspectives, namely, from the point of view of the needs [26], et al., from the point of view of learner needs satisfaction factors [4], [14], et al., pedagogical versus technological impact and realization of pedagogical scenario with ICT tools [1], [12], et al.

DLC features can be discussed in the light of curriculum design theories [3], [13], as well as from the point of view of learner support [22], [24], et al. The analysis of instructional design theories was concisely performed by Ryden [21], while curriculum design theories by Gagne [9], Knowles [11], Reigeluth [20], while DLC design was the focus of research of Mizoguchi and Bourdeau [17], and others.

DL forms should be reviewed regularly applying a consistent QA methodology based on quality criteria and indicators, and DLC QA procedures. According to Pukelis [18] (p.135) „curriculum designers do not evaluate the possibilities of classroom teachers". This is not evaluated during curriculum QA process, as assessment methodology does not include criteria or indicators that would provide the evidence that learning process participants would be able to act autonomously and accept individual solutions during unexpected learning situations.

Thus DLC QA dimensions had to be identified for further analysis of DLC QA factors, as well as detailed analysis and description of each QA dimension.

DLC QA dimensions. **QA** dimension is considered by the authors of the research to be "*the area that is significant to the quality of the object under assessment, and it more or less determines the existence of quality characteristics of the object under assessment*" [14] (p.65). QA process is understood as reflective and continuous in the time perspective. DLC QA should be performed through self-analysis.

QA dimensions for DLC design were identified by Volungeviciene and Tereseviciene [27] on the basis of analysis of dimensions identified by Reeves [19] who referred to Skinner (1967) and Cole (1992), as important for the success of DLC designing. Having analysed the dimensions suggested by Reeves [19], Volungeviciene and Tereseviciene [27] re-structured the levels and areas of QA dimensions and suggested the following DLC designing QA dimensions:
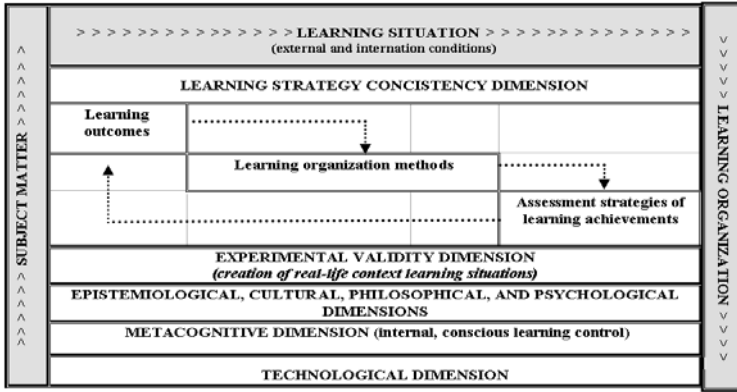
Fig. 1. DLC designing QA dimensions [27].

DLC quality is dependent upon learning organization: how learning situations will be created, representing life situations, which epistemology, psychological and cultural conceptions will be selected (selected by curriculum authors and maintained or not by learning organizers).

According to Van Damme [25], it is important to ensure the quality of separate segments of curriculum which compose learning curriculum. Therefore, this article and research will also focused on continuation of previous research results, developing the quality assurance procedures for TEL activity, as one of the most important segments of learning curriculum.

3 DLC QA factors in the context of learning strategy consistency dimension

When DLC is designed and learning organization starts, there come lost of factors that need to be assessed to answer the question on learning efficiency, namely, how flexible learners can be in time schedule, in selecting technological tools, are they going to construct their learning results individually or within a group, etc. etc.

Researchers [26], [27], et al., have been focusing on learning strategy consistency dimension efficiency from different perspectives: learning objective consistency with the learning activities and learning outcomes, learning activity design, learning and teaching organization methods, assessment of learning outcomes, etc. The research of this dimension undertakes most popular position among instructional design and curriculum design research outcomes.

Recently, the efforts have been made to identify the factors for DLC QA, in the context of learning strategy consistency dimension. The outcomes of conceptual theoretical research, performed by Lauzackas, Tereseviciene and Volungeviciene [15], indicate that DL strategy consistency dimension can materialize via the following QA factors: 1. implementation of needs analysis, 2. competence based definition of learning outcomes, 3. analysis and applicability of learning resources, 4. selection of learning organization methods, 5. selection of learning support tools, 6. defining the tools and methods for learning achievements, 7. improvement of DLC.

These DLC QA factors clearly outline the procedure of DLC designing process, and they coincide with the learning strategy consistency dimension components.

4 Reviving TEL activity: QA factors

As can be seen from the theoretical analysis in the chapters above, a learning activity can be treated as a single segment of learning organization methodological context. Though this research is focused on curriculum – driven approach, and analysis learning activity in the context of DLC, activity theory has been the focus of researchers in a variety of learning contexts.

Fleming and Mills [7] analysed "different yet consistent ways of responding in learning situations" [7] (p.137). The researchers focused on learning to learn and learner metacognitive perspective in learning activities. Learning styles were the focus [5], with the final results of the initiative bringing immensely high requirements and challenges for teachers, rather than learning activity authors, keeping in mind the learners themselves in this role. As Fleming and Mills [7] suggest, teachers should undertake the role of "assisting students to know themselves and to operate in a metacognitive fashion to make adjustments in their learning behaviors (Biggs, 1987; Flavell, 1976)" [7], p. 138.

According to France, Heraud, Marty, Carron [8], the quality of learning scenario is directly influenced by the monitoring of action performance. Therefore, the author suggests a constant monitoring of the process. If teachers aim at developing metacognitive competences among learners, they should first of all develop their own metacognitive competences and skills as reflective practitioners [23].

Educators and curriculum authors cannot design learning activities for learning, they can rather predict possible learning activity scenario, but would not be able to define individual learning settings. According to Fiedler and Kieslinger [6], "the sustainability of traditional models becomes more and more questionable in the light of widespread access to information, artefacts, and patterns of meanings in almost any field" [6] (p. 2). The prior educational settings do not possibly meet the needs of individualization of learning and un-predictable situations of constructing new learning artefacts. Thus activity design theories should imply research on which technologies facilitate which type of activities.

From the theoretical overview above, we could attribute the following QA factors for TEL activity assessment: learner needs analysis implementation, analysis and application of learning resources during activity implementation, learning organization scenario and characteristics, as well as learning support tools.

The other DLC designing QA dimensions, namely, experimental validity dimension, cultural, psychological, epistemological and philosophical, as well as metacognitive dimension and technological dimensions are not described in factor analysis, therefore, we might only define non-valid, but logical and pre-defined reference to possible factors, influencing these QA dimension during the designing of TEL activity. We presume these cover TEL activity simulating real-life situations, international and intercultural learning situations, consistency with epistemological and philosophical strategies, self-evaluation, self-

direction and self-regulation in the learning process, technological realization solutions, and consistency among micro-elements of the segment.

TEL activities provide enormous possibilities for adult learners. Learning accessibility provision was analysed by Lauzackas [13]. He identified the following learning accessibility factors: 1. legal factors, 2. geographical – regional, 3. information – accessibility, 4. financial possibilities, 5. relevance of curriculum, 6. transition possibilities, related to career factors, and 7. social exclusion factors.

Thus the factors like "legal factors", and "financial possibilities" are the factors that should be added to TEL activity QA factor list.

Having the types of factors identified by researchers, it can be presumed that the following factors remain urgent for TEL activity design:
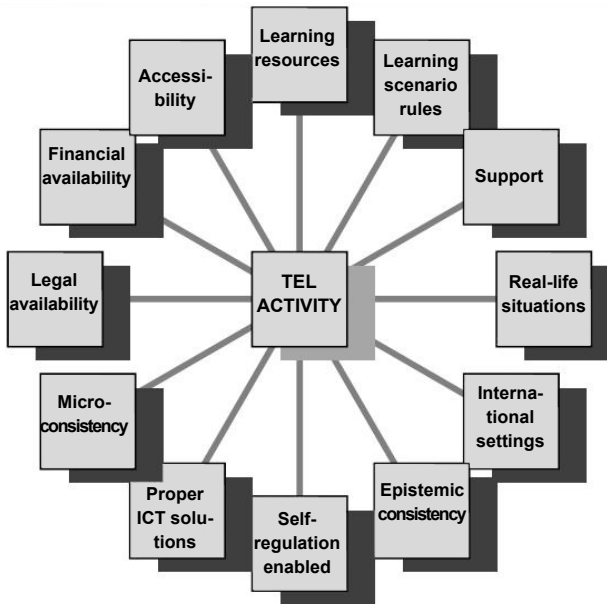

Fig. 2. TEL activity QA factors.

The results of this research were already applied practically for validation during the implemention of international Lifelong learning program, Leonardo da Vinci project Revive – "Reviewing and Reviving VET Curriculum" (LLP-LdV-TOI-2008-LT-0022), when international institutions revived and assessed the revised curriculum and TEL activities online.

The research on application of QA factors in TEL activity revival was performed in using online survey questionnaire among learners in higher education institutions in itnernational settings (N=288, 2009 - 2010). The internal validity of the instrument was measured by Cronbach alpha = 0.606. The research included the evaluation of the following TEL activity QA factors: applicable learning resources, learning support, self-regulation in the learning process, technological realization solutions, and consistency among micro-elements.

Respondents were presented with the list of *benefits* suggested by revived TEL activities, namely: increased accessibility of learning, preferred learning

place and time, possibilities to learn in a working place, instant accessibility of learning resources, and savings of financial and time resources.

All the options were selected by 23,1 % of respondents (N=288). The same number of respondents indicated four out of five benefits from the list. 84,6 % of respondents indicated that TEL activities improve learning accessibility and allow choosing learning place and time.

Respondents participating in the survey (30,8 %) indicated that TEL enables „individualized learning form when learners are active process participants". The analysis of learner attitude towards motivation factors revealed that all respondents had very strong internal motivation for TEL activities, as they indicated that they chose TEL option aiming at flexibility (87,1 %), career (75 %), and satisfaction of professional needs (71,4 %). External factors, such as administration support (negative answer was indicated by 45,7 % of respondents), and financial motivation (yes answer marked by 46,7 %, no answer marked by 31,5 % of respondents) were not indicated as the reasons to learn in a TEL mode.

The research results showed that TEL activity is chosen because it is convenient and comfortable for accessing learning in preferable time and place, and learning resources are at hand. Among the learning resources, the most popular are internet resources, and such items as online libraries and research publications are rarely used. This proves that limited possibilities are still used within TEL activity implementation.

Different learning organization methods are used in TEL activities, but experimenting and practicing are not yet regularly used by TEL authors and implementers. Learning support is being acknowledged as necessary and important, but personal progress tools are rarely used as support and self-directed and self-regulated learning method.

Conclusions

Having performed theoretical and empirical research on application of QA factors in reviving and updating TEL activity, the following conclusions may be drawn up:

1. DLC QA dimensions were described to contextualise TEL activity QA factors,
2. DLC QA factors were defined,
3. 12 TEL activity QA factors for TEL activity reviving were identified,
4. applicability of TEL activity QA factors during TEL activity reviewing and reviving was evaluated and validated successfully.

The research represents conceptual literature analysis and it focuses on definition of TEL activity QA factors necessary for reviewing and reviving it.

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