RESEARCH BASED SOLUTIONS FOR DISTANCE LEARNING/ TEACHING PROCEDURES

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Summary

Distance learning and teaching has been implemented for decades already. However, the status of DL/T curriculum at education institutions is not clearly or correctly defined in the majority of higher education (HE) institutions in different European countries. The majority of teachers tend to either enrich traditional HE curriculum with distance learning and teaching elements, but would maintain traditional study approach, or they would transfer their traditional teaching and learning experience onto virtual learning environments, but would retain the same pedagogical paradigm. In this perspective. This is also caused by lack of distance learning and teaching curriculum quality assurance procedures at education institutions.

The paper aims at presenting research which resulted in establishment of distance learning and teaching organization procedures at HE institution on the basis of distance learning and teaching curriculum quality evaluation and attestation. The paper presents Vytautas Magnus University case in Lithuania, but it aims at transferring methodological approach of application of research based solutions for distance learning and teaching procedures in education institutions

Introduction

Distance learning and teaching (DL/T) has been implemented for decades already. However, the status of DL/T curriculum at education institutions is still not clearly or correctly defined in the majority of higher education (HE) institutions in different European countries.

The majority of teachers would tend to either enrich traditional HE curriculum with DL/T elements, but would maintain traditional study approach, or they would transfer their traditional teaching and learning experience onto virtual learning environments, but would retain the same pedagogical paradigm. In this perspective, DL/ T curriculum would "face serious challenges with respect to the adopted pedagogical model and ICT options when their target is focused on large audiences with diversified demands" (Martins, Quadros, 2006, p.363). There is no methodology suggesting reviewing and reviving existing traditional curriculum to adapt it to DL/T organization.

Another problem that causes previous ones is the lack of quality assurance procedures at education institutions. If traditional learning and teaching curriculum is enriched with ICT elements, there is no evident procedures for HE institutions how to measure the quality and ensure curriculum design and study process organization quality criteria to be met in the context of rapid ICT development and practice shift. Moreover, once curriculum is adapted for DL/T study process, who and how evaluates quality of DL/T curriculum and what are

quality evaluation and DL/T curriculum accreditation and attestation procedures?

The object of this research is DL/T curriculum quality evaluation and attestation procedures, in the context of DL/T organization in HE institutions.

The aim of this research is to establish DL/T organization procedures at HE institution on the basis of DL/T curriculum quality evaluation and attestation.

 In order to reach the aim, the following **objectives** were formulated:

1.   to present research in the area of DL/ T curriculum quality evaluation,
2.   to discuss DL/T curriculum reviewing and quality improvement procedures from the point of view of pedagogical and technological methodologies,
3.   to define DL/T curriculum quality evaluation, attestation and accreditation procedures.

Methodology approach

The paper is based on scientific literature analysis in the context of DL/T curriculum quality assurance. It covers international project results, namely, harmonization of pedagogical and technological didactical methodologies, implemented during LLP Leonardo da Vinci Transfer of Innovation project REVIVE (LLP-LdV-TOI-2008-LT-0022), methodologies transferred from Vytautas Magnus University (VMU) research, as well as from FP6 IST iCamp project, including philosophical approach to learning and teaching. Scientific discussions are described hand in hand with HE institution context, namely, VMU, and this was chosen in order to show immediate applicability to institutional management and regulations to be undertaken to implement research results in practice.

Research in the area of DL/ T curriculum quality evaluation

The need to develop, re-develop and implement DL/T was raised and supported by European market of education, globalization of economy and European labour market, where flexibility and adaptability is decided by knowledge, competences and skills to master lifelong learning resources that are mainly based on information and communication technologies (ICT). Lisbon objectives targeted and raised many more following initiatives which had aimed at mobilization of education practices and creation of learning arena for European citizens, to be able to study all over Europe, research and apply their knowledge and skills.

Education institutions face challenges to meet the needs of learners and teachers and to develop available, accessible and qualitative DL/T curriculum. The majority of teachers would tend to either enrich traditional HE curriculum with DL/T elements, but would maintain traditional study approach, or they would transfer their traditional teaching and learning experience onto virtual learning environments, but would retain the same pedagogical paradigm (Targamadze, CIbulskis, 2006). In this perspective, DL/ T curriculum would "faced serious challenges with respect to the adopted pedagogical model and ICT options when their target is focused on large audiences with diversified demands" (Martins, Quadros, 2006, p.363).

DL/T curriculum designing was researched by curriculum design theories (Mizoguchi, Bourdeau, 2001, Lauzackas, 2001, Gagne (1985), Knowles (1984), Reigeluth (1999)), from the perspective of differences in support systems and activity models (Salmon, 2003, Thorpe, 2002), from the perspective of planning (Anderson, Elloumi, 2004, Verpoorten, Leclercq et al., 2006), from the perspective of learning units and educational modules (Barbosa, Maldonado, 2006) and other perspectives. These and other perspectives have already been discussed within the publications of the authors (Volungeviciene, Tereseviciene, 2008, et al.).

A.Volungeviciene and M.Tereseviciene (2008) suggested the model of DL/T curriculum designing quality evaluation dimensions to ensure the quality assurance during all curriculum designing process. Authors suggest evaluation of quality according to the following DL/T curriculum designing quality evaluation dimensions: learning/ teaching strategy consistency

dimension, experiental validity dimension, epistemiological, cultural, phylosophical and psychological dimensions, as well as metacognitive and technological dimensions (see fig. 1):

DISTANCE LEARNING/ TEACHING CURRICULUM DESIGNING QUALITY EVALUATION DIMENSIONS
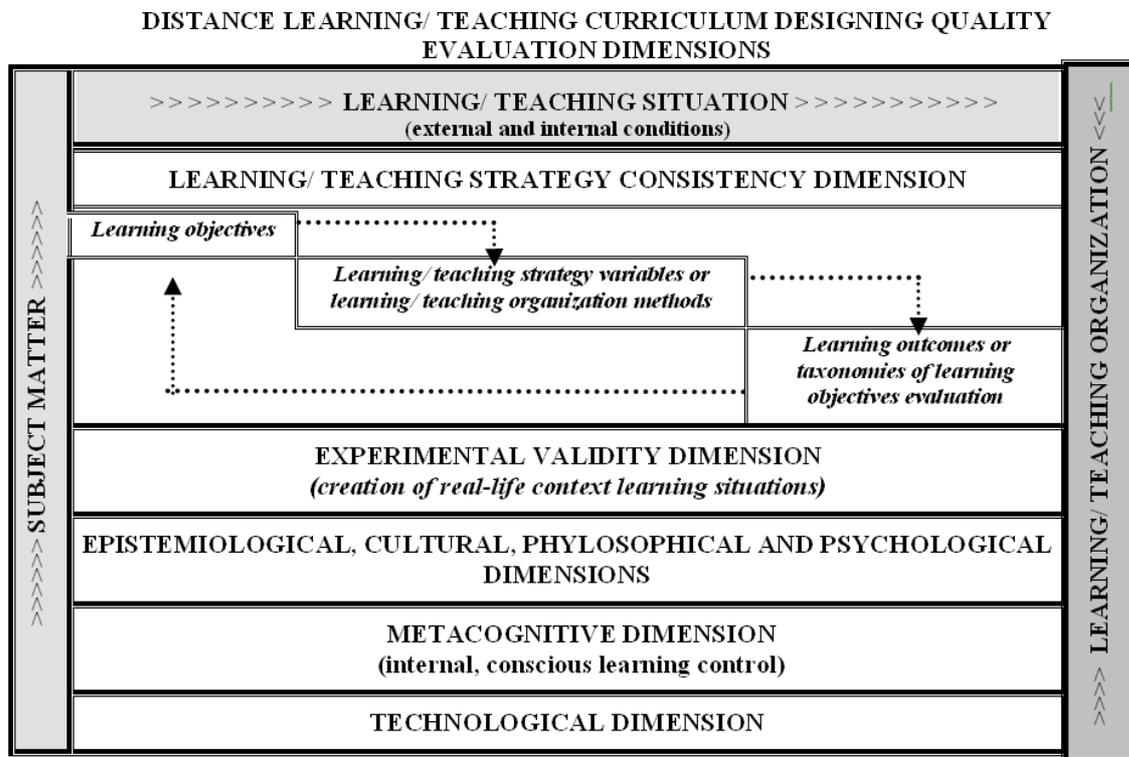

Figure 1. Distance learning/ teaching curriculum designing quality evaluation dimensions (Volungeviciene, Tereseviciene, 2008).

DL/T curriculum designing quality depends upon subject matter, while subject matter is independent of DL/T curriculum designing quality. DL/T curriculum designing quality depends upon learning/ teaching. Learning/ teaching organization directly depends upon evaluation of DL/T curriculum designing quality dimensions during DL/T curriculum designing: how learning/ teaching situations will be created, representing life situations, which epistemiology, pshycological and cultural conceptions will be selected (these are selected by curriculum authors, but they are maintained or not by learning/ teaching organizers).

On the basis of DL/T curriculum designing quality evaluation dimensions, DL/T curriculum quality evaluation factors were identified and described (Lauzackas, Tereseviciene, Volungeviciene, *in press*) which will not be presented in this paper, but which resulted in preparation of "*Distance learning and teaching curriculum quality evaluation methodology at VMU*" (institutional regulation). This methodology covers DL/T curriculum quality evaluation instruments for DL/T curriculum quality assessment and expertise, procedure description on how DL/T curriculum authors should attain DL/T curriculum quality evaluation and attestation procedures at HE institution. DL/ T curriculum quality evaluation methodology has had additional impact upon evaluation and organization of DL/T on the national level, as well. The two types of studies, namely TEL (which is called as e-learning in Lithuania), as well as distance studies have been identified as different processes. This was suggested by A.Targamadze and R.Petrauskiene (2008), when the degree of virtual studies, described by the authors, and virtual activities is increasing, and distance studies employ a greater degree of virtual solutions rather than e-learning context, and thus it approaches virtual learning and teaching processes, and then they unify. Thus DL/T curriculum evaluation dimensions and factor analysis contribute to DL/T

curriculum and DL/T organization regulation definition at VMU. However, there is another didactical problematic approach which should be discussed here, namely, the quality criteria which would help to harmonize pedagogical and technological didactical methodologies for reviewing and re-designing already existing DL/T curriculum and to adapt it to DL/T curriculum.

DL/T curriculum reviewing and quality improvement procedures from the point of view of pedagogical and technological methodologies

It is often the case in practice when teachers would not be aware how DL/T curriculum should be revived and updated to organise distance studies, as there is no methodology how to proceed and find didactical solutions accompanied by technological recommendations. This problematic issue is addressed to education specialists, as well as technology specialists, as ICT market today suggested diverse and ready-made web 2.0 solutions, and we need best IT managers to pick solutions up and apply them in practice. However, there is at least one didactical problem behind – the concept of the curriculum that should be "revived".

This issue was addressed by research implemented by FP6 IST project iCamp and the group of scientists who followed initiated at European level and addressed the competence of "learning to learn". This competence particularly becomes urgent when we speak about adult learning (Knowles, 1984; Mezirow, 1990) and lifelong learning – the role that university is supposed to undertake today. HE institutions are still restricted by curriculum-driven tradition. iCamp project described "learing to learn" competence by three areas of challenge, namely "sefl-directed", "collaborative" and "social networking" learning process. *Activity theory* (Leontjev, 1978; Engeström, 1987; Kutti, 1995; Engeström et al., 1999, cited by Fiedler, Kieslinger, et al., 2009) was found as most suitable contextual didactical solution to research and implement "learning to learn" approach to re-design DL/T curriculum in the area of these challenges.

On the other hand, there was another research implemented in the area of DL/T curriculum (Bates, 1990, Beaudoin 2004, Benigno, Trentin, 2000, Lauzackas, 2001, Tereseviciene, Rutkauskiene, Volungeviciene, et al., 2008, Verpoorten, Leclercq, 2006, et al), to review existing curriculum and to adapt it to distance study organization. These findings were accumulated and transferred together with "*Harmonized didactical and technological methodology for curriculum reviewing and reviving"* within Revive project.

The methodology suggests individual designing, when all learning and teaching organization shifts to learning and development of personal learning environment in a media based environment. This model recognises the change of the perspective that has been taken place in education for a couple of decades now – the shift from teacher-centered to learner-centered environments. The learners should not only have more freedom in planning, monitoring and suggesting evaluation of their learning, they should also have the possibility to choose suitable environments for their learning. This means that TEL environments must cease to be primary tutor-defined and controlled centralised systems. Instead learners must be given the opportunity to build their own Personal Learning Environments (PLEs) from a palette of both institutional and web-based tools, systems and technologies (Fiedler et al., 2007).
At the same time, the teachers having mastered curriculum and study organization are advised to transfer all their experience to be available at TEL environments, but they should design study process on the basis of their learners' and their institutional needs. They maintain all other learning and teaching activities and online interventions (Verpoorten, Leclercq, et al., 2006), but they should be able to choose the type of intervention on their mutual learning and teaching needs, with the requirement to maintain DL/T quality evaluation criteria.

Such didactical and technological methodology is not targeted at He institutions, it can successfully be applied to VET, adult education, and even school education context, as it is context independent in all aspects: education institution, the level of education, and subject – independent.

"*Harmonized didactical and technological methodology for curriculum reviewing and reviving*" suggests DL/T curriculum authors who adapt their traditional studies to distance studies, to:
- implement curriculum SWOT analysis,
- prepare recommendations - plan to start reviewing process and negotiations with learners and institution representatives on curriculum improvement, evaluating the needs to perform:
  A. Re-definition or learning objectives:
    - to be based on learning results (competence-based approach),
    - (re) considering the tools to present and indicate learning objectives in the curriculum.
  B. Re-developing of learning activities:
    - performing analysis of existing curriculum and online learning resources,
    - structuring learning material,
    - attributing and applying the types of learning/ teaching,
    - developing learning activity description,
    - selecting the tools to realize learning activities online.
  C. Re-selecting of evaluation strategy and evaluation tools:
    - Preparing evaluation strategy,
    - Preparing evaluation tools,
    - Realizing evaluation tools online.
  D. Re-thinking learning support and communication:
    - Preparing support and communication strategy and tools,
    - Selecting support and communication online realization tools,
  E. Preparation of scenario for organization of learning, prepare the course guides and tutor guides:
    - Preparing the user guide for content and navigation,
    - Preparing the technical help assistance.
    - Definition of further improvement recommendations.

Methodology fully corresponds to European Quality Assurance Framework phases: planning, implementation, evaluation and assessment, and review. It provides systematic approach to curriculum quality assurance as it demonstrates the focus on internal consistency of competences and learning outcomes, improving the matching between training supply and needs, promoting better access to lifelong learning, promote a culture of quality improvement and accountability at all levels, and addressing education policies in the area of competence – based approach.
Among limitations of this methodology, subject-author decision should be mentioned, as methodology is not prescriptive, but descriptive, asking curriculum authors to accept decision.

DL/T curriculum quality evaluation, attestation and accreditation procedures: Vytautas Magnus University case

Having analysed different research findings in the areas of DL/T curriculum designing and re-development, as well as DL/T curriculum quality assurance, the conception of DL/T curriculum was chosen and approved at VMU.
Distance learning/ teaching curriculum is the consistency and interaction of the main learning and teaching process parameters (objectives, learning/ teaching organization methods, teaching means, and evaluation strategy) in constant improvement process. This

conception describes learning/ teaching overall context, where each learning and teaching element is oriented towards a goal, decided by the interaction with other elements, and has its own particular place and meaning (Lauzackas 2005).

This conception of DL/T curriculum contributed to development of *"Regulation for distance studies' organization at VMU"* which maintain the following principles and regulations:

- distance learning and teaching as a study organization method, maintaining the differences between TEL and e-learning, when ICT is occasionally used to transfer learning resources online for easier access, from distance learning and teaching, when DL/T curriculum is being designed, evaluated and approved as DL/T curriculum,
- DL/T curriculum meets the requirements of regulation of studies at VMU, and undergoes quality evaluation, attestation and accreditation of studies,
- All types of study curriculum may be transferred to DL/T curriculum, independent of subject matter, and all types of study organization methods: lecturing, practicing, researching, laboratory work, et al.
- DL/T can be organized in a blended mode or completely – at - a – distance mode, allowing teachers to choose the most suitable degree of asynchronous interaction with the learners, meeting didactical and technological quality requirements described in this regulation.

"Regulation for distance studies organization at VMU" describes the main principles and requirements for distance study organization within the institution. However, in order to prepare this institutional regulation, DL/T curriculum conception had to be précised, DL/T curriculum quality assurance procedures had to be developed, methodology for re-development of existing curriculum models into DL/T ones had to be prepared, and all these aspects had to be agreed with the study regulation of the University. These were vital factors for implementation of such regulation procedures within a HE institution.

Conclusions

Research results were conceptualized and applied at VMU, and distance learning and teaching organization procedures were established:

1. research results in the area of DL/ T curriculum quality evaluation were analysed and DL/.T curriculum quality evaluation procedures were determined and *"Distance learning and teaching curriculum quality evaluation methodology at Vytautas Magnus University"* was developed.

2. DL/T curriculum reviewing and quality improvement procedures from the point of view of pedagogical and technological methodologies were reviewed and *"Harmonized didactical and technological methodology for curriculum reviewing and reviving"* was designed.

3. *"Regulation for distance studies organization at Vytautas Magnus University"* was developed, on the basis of research results in the area of DL/T curriculum quality assurance, study regulation and didactical and technological methodology for DL/T curriculum reviewing and reviving.

References

1. Anderson T., Elloumi F. (2004). Theory and Practice of Online Learning. Athabasca University. (Available online at http://cde.athabascau.ca/online_book, accessed in July, 2008).
4. Barbosa E.F., Maldonado J.C. (2006) An Integrated Content Modeling Approach for Educational Modules. Article in Education for the 21st Century — Impact of ICT and Digital Resources, Volume 210/2006, Springer Boston
5. Bates, A.W. (Ed.). (1990). Media and technology in European distance education. In Proceedings of the EADTU Workshop on Media, Methods and Technology. Milton Kenes: The Open University for the European Association of Distance Teaching Universities.

6. Beaudoin, M.F. (2004). Providing a Supportive Learning Environment in Face-to-Face and Online Courses – any Significant Difference? In U.Bernath, A.Szucs (Ed.), Proceedings of the Third EDEN Research Workshop (p.p. 13-19). Oldenburg, Germany: Bibliotheks- und Informationssystem der Universitat Oldenburg

7. Benigno, V., Trentin, G. (2000). The evaluation of online courses. In Journal of Computer Assisted Learning 16 (3), 259–270.

8. Fiedler S., Pata K., Laanpere M., Kikkas K., Valjataga T. (2007): Towards and Environment Design Model for iCamp, Deliverable 1.2, available online at: http://www.icamp.eu/learnmore/project/deliverables

9. Fiedler, S., Kieslinger, B., Pata, K., Ehms K. (2009). Camp Educational Intervention Model. Available at http://www.icamp.eu/learnmore/project/deliverables/.

10. Gagne, R., M. (1985). The Conditions of Learning and the Theory of Instruction. 4th ed., New York: Holt, Rinehart, and Winston. Žr. 2006 m. liepos mėn. Prieiga internetu: http://www.nwlink.com/~donclark/hrd/learning/development.html.

11. Knowles, M. (1984). The Adult Learner: A Neglected Species (3rd Ed.). Houston, TX: Gulf Publishing. Žr. 2007m. liepos mėn. Prieiga internetu: http://tip.psychology.org/knowles.html.

12. Lauzackas R. (2001) Designing teaching curriculum. Kaunas, VDU.

13. Laužackas, R. (2005). Profesinio rengimo terminų aiškinamasis žodynas. Kaunas:VDU.

14. Lauzackas, R., Tereseviciene, M., Volungeviciene, A. (*in press).* Distance Learning/ Teaching Curriculum Designing Model in the Perspective of Quality Evaluation Dimensions and Factors.

15. Martins, J.S.B., Quadros, T., 2006, in International Federation for Information Processing, Volume 210, Education for the 21" Centiuy-Impact of ICT and Digital Resources, eds. D. Kumar, and Turner J., (Boston: Springer), pp. 363-367.

16. Mezirow, J. et al. (1990). Fostering Critical Reflection in Adulthood. San Francisco: Jossey-Bass.

17. Mizoguchi, R., Bourdeau J. (2000). Using Ontological Engineering to Overcome Common AI-ED Problems. Journal of Artificial Intelligence and Education, Special Issue on AIED 2010, vol.11,107-121. Available online at http://cbl.leeds.ac.uk/ijaied/, accessed in August, 2008.

18. Pukelis K., Pileičikienė N. (2005). Study quality: paradigm of study results. In K.Pukelis (Ed.) Quality of Higher Education. Vol. 2. p.p. 96-107.

19. Reigeluth, C.M. (1999). The elaboration theory: Guidance for scope and sequence decisions. In C.M. Reigeluth (Ed.), Instructional-Design Theories and Models: A New Paradigm of Instructional Theory. (Volume II). Hillsdale, NJ: Lawrence Erlbaum Assoc.

20. Salmon G. (2003). E-Moderating: The Key to Teaching & Learning Online. London: Taylor and Francis Books Ltd.

21. Targamadzė A., Cibulskis G. (2006). Development of Modern e-Learning Services for Lithuanian Distance Education Netowork LieDM. In R.T.Mittermeir (Ed.) Informatics Education – The Bridge betweem Using and Understanding Computers: International Confernece inINformatics in Secondary Schools – Evolutions and Perspectives, ISSEP 2006. LNCS 4226. Springer-Verlag Berlin Heidelberg 2006.

22. Targamadze A., Petrauskiene R. (2008). The Quality of Distance Learning in the Situation of Technological Change. *In (K. Pukelis et al., eds) The quality of higher education.* ISSN 1822-1645. 2008, nr. 5. p. 74-93. Kaunas: Morkunas ir ko.

23. Tereseviciene, M. Rutkauskienė, D., Volungevičienė, A., Zuzevičiūtė, V., Rutkienė, A., Targamadzė, A. (2008). Possibilities to Apply e-Learning to Support the Development of Continuous and Vocational Training: Study. Kaunas: Vytautas Magnus University, 2008. 132 p. ISBN 978-9955-12-406-1.

24. Thorpe M. (2002). Rethinking learner support: the challenge of collaborative online learning. Open Learning, 17(2), 105-119. Žr. 2003 m. rugpjūčio mėn. Prieiga internetu: http://www.scrolla.ac.uk/papers/s1/thorpe_paper.html

25. Verpoorten D., Leclercq, D., Poumay, M., Dupont, Ch., Hougardy, A., Reggers, T., Georges, F., Delfosse, C., Leduc, L. (2006). NE-COME-RIR: The guiding theme of a learning project, Higher Education Instructional Development, LabSET-Ulg.
26. Volungeviciene, A.,Tereseviciene M. (2008). Quality Assessment Dimensions of Distance Teaching/ learning Curriculum Designing. *In (K. Pukelis et al., eds) The quality of higher education*. ISSN 1822-1645. 2008, nr. 5. p. 32-53. Kaunas: Morkunas ir ko.