E-LEARNING – A FUTURE TREND SINCE 2002

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Abstract:

Not only business companies but also Universities are subject to change. This change leads to a development of these institutions or rather an assimilation to changing surrounding conditions. Due to reduction of school years for passing the German Abitur and the abolition of compulsory military service a massive growth of students is registered. This high-level of students is expected to stay in the near future. These circumstances lead Universities to create possibilities for dealing with masses of students under given resources. E-Learning could be the method of choice but certainly not the exclusive one.

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1 Preface

Not only business companies but also Universities are subject to change. This change leads to a development of these institutions or rather an assimilation to changing surrounding conditions. Due to reduction of school years for passing the German Abitur and the abolition of compulsory military service a massive growth of students is registered. This high-level of students is expected to stay in the near future. These circumstances lead Universities to create possibilities for dealing with masses of students under given resources. E-Learning could be the method of choice but certainly not the exclusive one.

E-Learning[1] is offered and used for more than 10 years at the University THM (Technische Hochschule Mittelhessen). During the years 2002 to 2007 a MBA course for Project Management was implemented and successfully realized at the University. This forms the basis for expert knowledge. This knowledge and its results of usage has been presented and discussed at various congresses. The MBA course has been created to give students all over Germany the possibility to study part-time. This course was reliant on a successful E-Learning concept. The Hessian Ministry for Science and Art promoted back in 2007 a project which should prove the transferability of the part-time course to undergraduate courses at the industrial engineering faculty of the THM. Some Results of this 2-year project will be a part of the following Article.

2 Strategy and the road to success

Due to the characteristics of the specific organization [2] the realization of an E-Learning strategy, which is only a part of a general strategy for the University seems, to be a problem. The Implementation is only possible in smaller steps which are not necessarily embedded in the part-strategy.[3] Euler/Seufert stated as a success factors of sustainable implementation of an E-Learning concept a general strategy all over the University[4]. This strategy is not yet affixed but an orientation framework is set in form of a vision. Within the progress of developing a strategy this instrument is seen as a fundamental guideline.[5] Within this Guideline a significant step towards the direction of an E-Learning strategy is named: „Our professional and organizational framework stands for a solid foundation. This foundation will be permanently reviewed and further developed. Various teaching and learning methods form the basis for life-long-learning".[6]

According to Euler/Seufert 5 dimensions and their interdependencies are relevant for a successful and lasting performance of an E-Learning concept at Univer-

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[1] E-Learing includes in this definitions the usage of an interacitve whiteboard as well as the elements of Blended-Learning.

[2] cf. Euler & Seufert; 2005, p. 5

[3] cf. Euler & Seufert; 2005, p. 6

[4] cf. Euler & Seufert; 2003, p. 9

[5] Müller-Böling & Krasny; 1998, p. 20

[6] n.p; 2007

sities. These dimensions will be used in the following as an explanation framework and are in detail:

economical dimension:

stands for an economical measurement of the E-Learning concept

pedagogical-didactical dimension:

stands for a measurement of the "additional didactical benefit"[7] of the implemented E-Learning contents

organisational-administrative dimension:

stands for the necessary adjustment of all processes within the University

technical dimension:

stands for securing of a working E-Learning from a technical scope of view

socio-culturally dimension:

stands for the necessary changes of the attitude and behavior of the E-Learning users.[8]

3 E-Learning since 2002

E-Learning is present since 2002 and is installed in various fields among the University. In some of these fields accompanying scientific research was made and issued in a 5-year-interval. Several articles were published within the last 11 years, which focused on the successful usage by teachers and students. Here the premise is the organizational-administrative dimension as well as the technical dimension. The last mentioned dimension won't be an object of this article. In the project report back in 2009 the organizational level was defined as a superior success-related component within the MBA course and its E-Learning concept. Contrary to the dimension-concept of Euler/Seufert the organizational level included the economical consideration as well.[9]

Grau/Vossebein published their first research results concerning the usage of E-Learning in the MBAS course back in 2004 and 2005.[10] The successful implementation of a concept which made use of E-Learning methods and especially the support

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[7] Euler & Seufert; 2005, p. 12

[8] cf. Euler & Seufert; 2005, p.11 et seq.

[9] cf. Grau & Vossebein; 2009, p. 20

[10] see Grau, N. & Roth, R. &; Vossebein, U.; 2004 and Grau, N. & Roth, R. &; Vossebein, U.; 2005

belonging to organizational issues was subject of this analysis. It was proved that the organizational element primary causes the success of the E-Learning concept.

Especially for achieving an additional didactical benefit in the meaning of the didactical dimension of Euler/Seufert. The project which was promoted by the HMWK should prove wether the E-Learning concept of the MBA course is transferable to undergraduate course or not. The results shows that a sustainable success is only possible if the organizational element is included in the undergraduated courses.[11]

Along with the researches if the concept is transferable to undergraduated courses, further study was made concerning current teaching and learning methods within the lecture Project and Process Management. These methods all belong on the guideline of the THM which is also relevant to this article. Already at the IPMA Congress (International Project Management Association) in Istanbul in 2010 as well as continuative research for the IMR congress in Porec-Osijek in 2011 these experiences was published.[12]

The core research of this current teaching and learning methods is an interactive whiteboard which is seen as a part of E-Learning even it is not based on an E-Learning platform. The so called voting equipment are subject of the teaching concept and allows students to answer individually on the asked questions. The given possibilities of the whiteboard and its voting equipment provides the ideal conditions to activate the students and therefore provide a knowledge basis on a "playful learning" level. At a second step the appliance of the knowledge was tested in prepared exercises. In a last step the students should reflect their knowledge in an oral exam. This leads in an ideal case to the favored effect – operational competence. And consequently to the fulfilling of the essential dimension of Euler/Seufert, the creation of additional didactical benefit.

In this illustrated case it is clear that a high administrative effort for reaching the benefit has to be done. Students recognize a continuously learning stretched all over the semester in a positive way. Statements like this prove the concept right:

"Due to permanent repetition of the lecture content within the voting significantly more is learned". These thoughts need to be implemented in the didactic concept and demands a permanent support of the organizational part. Over the last 10 years valuable insights were created which lead to the following questions.

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[11] cf. Grau & Vossebein; 2009, p. 75

[12] see Mogk, M.; 2011

Is E-Learning a part of the strategic component at the University? Which path in learning and teaching has to be taken and is there any potential for optimization?

Which change has to be done to integrate E-Learning fully into the didactic concept of the University? Could Change Management be one of the supporting solutions?

4 The current usage of E-Learning at the University

The integration of an E-Learning environment in the teaching concept of a public university can be done in 2 ways, the top-down or the bottom-up concept. Sengstag/Schmuki-Schuler believe that it makes sense to choose the bottom-up concept, if there is no time pressure from the universtity administration to implement a concept. This approach also leaves open which platform/soft- and hardware should be used. [13]

The E-Learning environment of the THM has been developed over 10 years, leading to the choice of the learning platform "Moodle" as a solution all over the university. The University supports "Moodle" in form of material and human resources for administrating the platform internally as well as providing training courses.

In the project report 2009 the use of different platforms was confirmed by an evaluation of teaching staff .[14] The biggest groups were the users of the platform "Moodle", "estudy" and "PMW-VU". At this time the only supported platform at the University is "Moodle". For this purpose, there are three research assistants for educational support, for example to implement the teaching concept of individual courses as well as to support in operational issues. In addition there is an employee who has to ensure the availability of the platform at the technical level. These are considered in the organizational-administrative and technical dimension by Euler/ Seufert, but will not discussed any further at this point. The current use at the THM can be stated as follows.

Currently there are 1211 courses in "Moodle" at the 11 faculties of the THM as accompanying elements for classroom teaching. Of these, 1180 are assigned to the lectures. 31 courses explicitly serve the organizational dimension. This information leads to the conclusion that a didactic value by using the "Moodle" platform is trying to be made. On average, there are 110 courses per faculty available, the maximum of

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[13] cf. Sengstag & Schmuki-Schuler; 2005, S. 125

[14] cf. Grau & Vossebein; 2009, S. 36

292 courses is used all over the university, the minimum is 36 courses. 5 of 11 faculties have a number of courses between 110 and 144. In the following the statements refer to the faculty of industrial engineering with 135 courses. This is a representative average of all faculties at the THM. In this example is examined whether the conclusion of the dominance didactically processed E-Learning courses is valid.

The purpose of an E-Learning platform is to provide contents of lectures as well as the possibility of communication between professors and students. To create a complete learning environment for students it is necessary to combine didactic elements with appropriate methods.[15] To create the additional didactical benefit it needs more than just the provision of documents for lectures.

"Moodle" provides 18 so-called activities, which relate solely to the field of didactic dimension. They are different in their scope and opportunities they offer. The activity "test" for example, which is self-explanatory targets to assisting the lectures by tests and their evaluation directly on the platform, according to the "Moodle" help[16]. These activities are intended for a two- or more-way communication. Furthermore there are 7 working materials, primarily referring to the provision of documents and information in various forms, for example, text pages or uploaded files. Those work materials mark the unilateral provision of informations.

The following the consideration refers to the courses for the faculty industrial engineering in the summer semester 2013 as well as courses that have the status "active". "Non-active" courses indicate that these were used in the past. This leads to 57 relevant courses. The use of the elements in these courses is shown in the following figure.

Tab. 1 Usage of "Moodle" elements
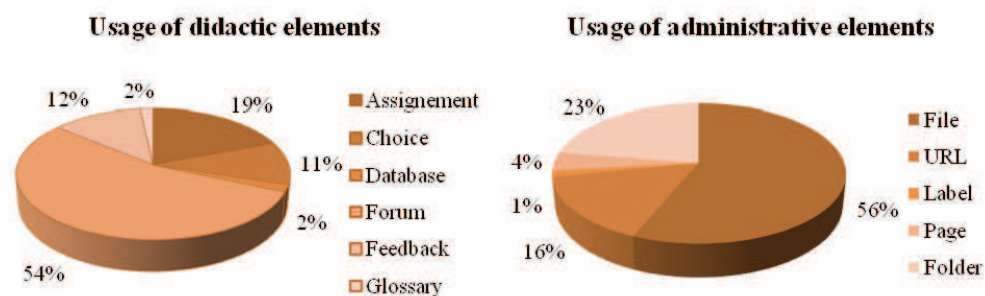
Author's calculation

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[15] cf. Euler & Seufert; 2005, S.5

[16] cf. n.p; n.d.

From the 18 available activities only 6 are used. The high usage of the forum with 54% overall is due to the fact that this element is automatically entitled to dispose. There are used 4 of 6 elements in the organization area, which are being considered for administrative support by "Moodle".

The use of administrative elements is used conform to the system, which means that the elements are used how it is intended by "Moodle", e.g. providing documents and lecture related informations. On the side of the didactic elements, a different picture emerges. Of the 57 activities which are used, only about 16% are used conform to the system. All other activities are "transformed" by the instructors for other organizational purposes. Taking a closer look e.g. to the activity "vote" . There is to see that all instructors use this for dividing into work groups instead of using it, like the "Moodle" developers intended[17] for getting opinions from the members or which topic should be deepened or where is a need for explanation.

Just from this brief consideration, the following result can be read. There are active didactic activities "transformed" into organizational activities. That means they are not used in their original sense that "Moodle" provides. The majority of usage suggests that "Moodle" is currently used as an additional management tool for teaching. Therefore it could be considered just to host a download area on another server, so you can work there in simplicity.

The ambition of the THM is to make the use of "Moodle" more attractive and to offer support in the implementation and design of courses. The "internal advanced training" as an division within the THM, offers the opportunity to qualify lecturers in the field of E-learning. They offer courses that deal with both, the educational opportunities as well as the administrative component. These internal courses exist since 2000 whereat until the year 2007 not more than one course per year has been provided. Since 2008 the amount of the courses steadyly rises and shows a clear focus to didactical courses as shown in the figure below.

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[17] n.p.; n.d

Tab. 2 E-Learning training at the THM
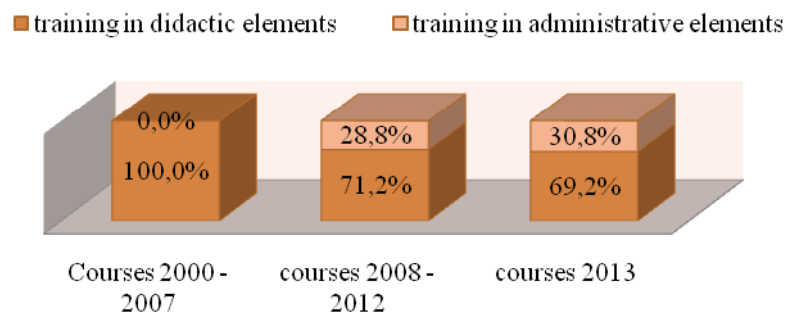
This obtains a contrary picture to the actual use of the "Moodle" acitivities. It seems that the internal advanced training division goes into a different direction to the lecturers. Within the field of teaching rather the administrative skills than knowing the didactic background seems to be at the forefront. At this point it is highly questionable wether this is an active decision of the teaching staff or arised from a lack of knowledge what "Moodle" offers.

5 Future prospects - Quo Vadis E-Learning?

Several questions have to be answered in the following research concerning the topic of E-Learning. Which path will E-Learning go in the near future? How has the staff to be trained to gain sustainable results? What has to be done that professors tap the full potential of an E-Learning platform to create an effective learning and teaching environment?

As explained above the benefit of an E-Learning platform is not yet recognized throughout the teaching staff. A possibility to increase the recognition of a benefit could be to create an incentive scheme. This scheme should cover the massive administrative and conceptual effort that has to be done to support classroom teaching with the possibilities of an E-Learning platform. For this it is necessary to consider the Change Management approach for Universities.

Explained in short there are 3 phases to get through. First one is "unfreezing". In this all the persons concerned should be brought in and activated to change their attitude in accepting innovations. The second phase "moving" is about the first steps towards assessing the potential of innovations within the persons own

environment. The third phase "freezing" consolidates the changes in everyday work throughout the organization. A sustainable change could only be established if the innovation "E-Learning" and its interdependencies get through all these phases.[18] This means for an implementation of an E-Learning at the University that the teaching staff needs to understand and realize the change in their everyday work. As mentioned above a strategic framework is more than necessary to give the persons concerned a definite and certain direction.

This change can lead to an adequate usage of the E-Learning possibilities. Teaching staff would no longer use "Moodle" as an organizational help for their lectures but rather change their E-Learning concept on a didactic way of use.

The next steps referred to this idea will be an analysis of the teaching staff and students about their ambition to change. Along with this comes a research about the demands that needs to be fulfilled throughout the University to create a sustainable E-Learning concept.

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[18] cf. Seufert, 2005; p. 54

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