INFORMATION AND COMMUNICATION TECHNOLOGIES IN EDUCATION

APPROACH TO TEACHING OF INFORMATION SYSTEMS- ONE YEAR AFTER

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Outline

- Introduction
- Structure and content of the course
- Research and student's comments
- Conclusion

Introduction 1/2

At the ICTE-2012 conference the experiences from teaching of information systems (IS) development to students of computer science were presented.

The article stated an assumption that the same topics would be also suitable for teaching business oriented students, but with a modified goal and an altered structure.

Introduction 2/2

Such instruction has been conducted the

'Information Management' (KIMA)

master's course at the Tomas Bata University

and

At the University of Defence in bachelor 's in the similar course „Computers Technique" for the Combat Vehicles branch students.

Structure of the course 1/5

The KIMA was an optional course; was selected by 31 students; the reason states in the table:

Ord.	Reason for selecting	Num.	%
1	Interest in IT/IS/enterprise IS	11	50
2	The only interesting elective course	4	18
3	To avoid econometrics	3	14
4	Continuity of subjects	1	5
5	Electronic enterprise	1	5
6	Relation to management	1	5
7	Merit for the field of study	1	5
	TOTAL	22	100

Structure of the course 2/5

Lessons:

1. Introduction to the topic.
2. Concepts of IS and methodology of their creation.
3. IS modelling and credit work, assignment and specifications.
4. IS analysis (ERD, FS, DS models).
5. IS design (RDM) and the transformation from the ERD.
6. IS creation (description of MS Access and its objects).
7. Application of enterprise informatics.
8. Implementation projects/changes of IS.
9. Business intelligence, data warehouse.
10. Data mining.
11. Outsourcing, cloud computing.

Structure of the course 3/5

For the successful fulfilment of the credit assignment the students were provided with the following information:

- Course credit requirements.
- Lectures and the process of the IS creation.
- Instructions for working with MS Access.
- A sample of the credit assignment and an IS final application.

Structure of the course 4/5

The course concludes with a graded credit, which can be obtained after the students hand in their credit assignment.

The credit assignment can be submitted in two versions:

1. The IS analysis and design without its application in MS Access; grade E.
2. One's own IS in MS Access with the description of its creation and result; grade C.

Grades can be improved based on the result of examination (voluntarily).

Results of the course 5/5

The KIMA results are in the table:

Ord.	Issue in focus	Number	%
1	Total of students enrolled	31	
2	Consultation attendance (3)	24, 15, 12	
3	Surveys submitted	22/*	82
4	Not given credit	4	13
5	Given credit	27	87
6	- grades A/B/C/D/E	2/2/10/7/6	7/7/38/26/22

Research and student's comments 1/4

Along with rethinking the teaching methodology, the way of researching the relationship of students to the subject and its future development was also considered.

The research methodology consisted of observation, discussion, and, in particular, of the development and implementation of the final survey.

The survey contains questions pertaining to the relationship of the student to the course and its importance for their study and practice. Most of the items are closed questions; the open questions seek the reasons for the student's evaluation and describe his/her views.

Survey on the KIMA course

1. Did the KIMA course meet your expectations?

☐ totally ☐ partly ☐ least

2. WHY did KIMA (not) meet your expectations?

3. The main content of KIMA – the creation of one's own IS is for the course:

☐ appropriate ☐ I don't know ☐ not appropriate

4. WHY is the creation of one's own IS (not) appropriate for the course?

5. Do you recommend maintaining this content in KIMA?

☐ yes ☐ I don't know ☐ no

6. Evaluation of the 'IS analysis – conceptual modelling' part of the course:

☐ easy ☐ moderately difficult ☐ difficult

7. Evaluation of the 'IS design – logical modelling':

☐ easy ☐ moderately difficult ☐ difficult

8. Evaluation of the 'IS creation – working with MS Access':

☐ easy ☐ moderately difficult ☐ difficult

9. Did you study something similar in the previous courses at UTB?

☐ yes ☐ approximately ☐ no

10. What are you taking away from the course for the completion of your study at UTB?

11. What are you taking away from the course for practice?

12. Evaluate your tutor:

☐ excellent ☐ average ☐ poor

13. Recommendation for your tutor.

14. Any other comment about the course?

Research and student's comments 3/4

1. Did the KIMA course meet your expectations?

totally: 16 (74%) | partly: 5 (22%) | least: 1 (4%)

2a. WHY did KIMA meet your expectations?

Everything that was described in the curriculum was fulfilled.
I learnt something new.
Working with MS Access – 2x.
Creation of one's own IS – 4x.

2b. WHY did KIMA not meet your expectations?

To explain the procedure of the IS creation in a more detailed way.
The course required more independent work than I expected.
To devote more time to MS Access. Not everybody owns MS Access – 2x.

3. The main content of KIMA – the creation of one's own IS is for the course:

appropriate: 21 (96 %) | I don't know: 1 (4%) | not appropriate: 0

4. WHY is the creation of one's own IS appropriate for the course?

Practical work with databases, creating IS – 4x.
Course content reflects reality.
Deepening the knowledge of theory.
Developing analytical thinking.

5. Do you recommend maintaining this content in KIMA?

yes: 16 (74%) | I don't know: 3 (13%) | no: 3 (13%)

6. Evaluation of the 'IS analysis – conceptual modelling' part of the course:

easy: 6 (28%) | moderately difficult: 13 (59%) | difficult: 3 (13%)

Research and student's comments 4/4

7. Evaluation of the 'IS design – logical modelling':

easy: 5 (22%) | moderately difficult: 14 (65%) | difficult: 3 (13%)

8. Evaluation of the 'IS creation – working with MS Access':

easy: 10 (46%) | moderately difficult: 11 (50%) | difficult: 1 (4%)

9. Did you have something similar in the previous courses at UTB?

yes: 6 (28%) | I don't know: 9 (41%) | no: 7 (31%)

10. What are you taking away from the course for the completion of your study at UTB?

Working with MS Access – 9x.
Improvement in MS Excel.
Revision for the final state exam.
New information.
Overview on the IS creation – 7x.
Course credit.
Understanding data mining.

11. What are you taking away from the course for practice?

Working with MS Access – 7x.
Overview on the IS creation, specifications – 10x.

12. Evaluate your tutor:

excellent: 20 (92%) | average: 2 (8%) | poor: 0

13. Recommendation for your tutor:

There is nothing to be changed in the course.
I'd like to meet such teachers in other courses.
Satisfaction with the content of the course.
More focus on practical work within the course.
Keep going. Strong nerves.
Beyond reproach, fast communication.
No objections.
Less independent work should be required.

14. Another comment on the course?

Satisfaction. Thank you.
A very useful course.
Excellent organization, the willingness of the teacher.
To add an introduction of a system
Even the looser form was suitable; yet I took away important pieces of knowledge.
It meets expectations; but I won't most likely use it in practice.

Conclusion 1/3

Teaching the foundations of the development of information systems for business students have proved at a master/bachelor's degree and will be continued in it. The experience gained will be applied in further continuation of the course.

For the master's students is not very effective to form the resulting IS into MS Access, but just end the design stage.

Conclusion 2/3

It is also necessary to pay more attention to the analysis and design of database structure and its transformation into a relational data model. This is the most difficult part of learning.

IS development is a topic where you can conveniently share different approaches and experiences and to use available information to carry out joint research projects.

Conclusion 3/3

Also, a targeted research on teaching IS would be beneficial; it would verify the applied methodologies, techniques and tools, forms of the teaching process, communication methods, the use of learning resources and other elements of teaching.

Thank you for your attention!