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## Strengthening of penetrability of education between secondary school and university – case study of economics

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### Abstract

The article uses primary research and describes situation of economics subject teaching at selected secondary schools and universities in the Czech Republic. In the first part of the paper the teaching of economics at secondary schools is evaluated. The second part deals with economics teaching at economic universities. The third part evaluates questionnaires of economics students at Business Academy and Higher Professional School of Social Work Ostrava. After presenting methods and techniques of research, the article presents the obtained results of primary research by descriptive method. The parts of the article are also methodical recommendations for secondary schools and universities teaching of economics. The article shows various directions which can lead to improving of efficiency of pedagogical process and simultaneously shows ways to strengthening education penetrability.

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### 1. Introduction

The aim of article is based on the provided research to evaluate education of economics at secondary schools and universities and consequently strengthen possibilities of penetrability of economics study between secondary school and university (Meszlenyi et al., 2003).

In practical orientation of the article we can ask 2 elementary questions. The first one is: What is contemporary level of penetrability at secondary schools and universities by comparing of their curriculums? The second one is: How should their curriculums look like to strengthen penetrability and consequently make the journey of the secondary school student into university easier? It is necessary to map which parts of economics subject are the

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easier and which the most difficult. For that reasons the questionnaire was implemented. Its results are listed in the article.

Teaching economics at secondary schools is relatively new trend at secondary vocational schools mainly economic oriented. It is like that due to the fact that it was very difficult to implement the subject into structures of economic subjects before introducing Framework Educational Programmes by Ministry of Education. Even today there are some schools where there is a place for economics only as a part of business economy subject.

Meanwhile at economic universities the economics is a traditional subject in bachelor study, no official study exists which would solve penetrability of economics between secondary schools and universities.

The proposed article can be taken as a case study, which enlarges the topic by new knowledge and can offer certain lead in curriculum modifications at secondary schools as well as at universities. Sometimes it is much easier to view the processes of real economic life only from unstoppable developing globalizing tendencies view and not only in ICT development (Hanclova & Doucek, 2011). However, if we want our students to succeed in the environment, it is necessary to start as soon as possible with adapting new conditions and impulses coming from the outer environment (Hanclova & Doucek, 2012). The environment is represented by compatible curricula at secondary schools and universities.

## 2. Materials and methods

The research, which was a primary source of information to teaching of economics at secondary school and university, evaluated situation in 2013. Totally, 23 secondary economic schools and 12 universities were involved. The list of all involved schools is in the appendix A. Let's identify methods and techniques used at the research of the topic:

Analysis – in research, the addressed secondary schools and universities are evaluated at economics teaching, which were willing to provide data directly or the data were taken from their official websites.

Synthesis – partial analyses (outputs of the schools) are mutually bound and unified.

Induction – it is possible to presume *ex ante* that certain causality will occur repeatedly towards deductions of more general conclusions.

Deduction – based on certain premises about economics teaching it is possible to reach to more complex view on efficiency of educational process.

Comparison – the obtained results of partial evaluations are mutually compared.

Questionnaire survey – with regard to the fact that a practical part comes out of questionnaire survey at known respondents, the technique of direct observation is used. The students fill in an anonymous questionnaire see appendix B, in the end of winter and summer term. The results serve teacher as a feedback and especially inspire teachers of higher efficiency of educational process. Evaluating has been provided continuously since 2006, when economics teaching at OA Ostrava was introduced. The evaluating questionnaire survey towards quality and content of the economics teaching at Business Academy and Higher Professional School of Social Work Ostrava was provided annually in lessons at approximately 90 pupils. It was in the 4th year of study at Business Academy and Economic Lycee branches. The questionnaire was filled in directly in the lessons. It ensured 100 % of recoverability of the questionnaires and reliability of research. The obtained answers were evaluated in 3 study groups, the first part for Business Academy, the second part for Economic Lycee. Further, the obtained answers were sorted according to the highest frequency (absolutely in the number of respondents, relatively in percentage representation), which were reached in the research. The summary results of the primary research during years 2006–2013 are introduced in the article, in the part devoted to presentation of questionnaire results as a complementary source of primary research of penetrability.

## 3. Results and discussion

### 3.1. *Teaching economics at secondary vocational schools*

By evaluating of economics teaching at secondary schools we have to bear in mind that Framework Educational Programs enabled schools to better adapt on outer conditions and accommodate composition of taught subjects to

graduate's profile. The secondary school graduate does not expect from educational institution only reaching certain professional competencies, which he can use in working process, but mainly, if educational institution creates quality conditions for further study at university from long-term point of view. Due to above mentioned, the article will be devoted not only content of teaching, but also to its form and promotion.

Secondary vocational schools teach economics subject in the 4th year of study in 90% of cases and usually in each branch of study. Only in 10% of cases, economics is a part of curriculum in the 3rd year of study. If we focus on content of economics, we will find out that topics of microeconomics and macroeconomics are mainly involved, in primary research.

Universal form of economics subject content:

- Basic definitions in economics
- Overview of history of economic theories (thoughts)
- Basic economic systems
- Elements of market
- Consumer decisions
- Company behavior in conditions of perfect competition
- Company behavior in conditions of imperfect competition
- Economic policy
- Institutions of impact – international organizations

Except for economics teaching (Majerova & Chudarkova, 2012) it was possible to come across subjects such as Economic seminar – in discussions solving topical problems of domestic and world economy; National economy – mainly oriented on macroeconomic situation of the country and interpretation of basic economic theories; Applying economics – subject based on combination of general economics, topical economic information and PC simulations. There are subjects which contain topic “Bank in Action”, where students should learn right how to financially invest based on decisions on interest rates of deposits and credits, learn to diversify their financial portfolio or obtain knowledge from fundamental analyses of financial markets.

Support of educational forms at economics teaching is key as for a lot of students it is very difficult to understand demanding stuff, e. g. in 3rd year of study. Due to above mentioned, we can recommend and efficiently applied following supportive didactic means and educational forms:

a) E-learning education support: e-learning can be characterized as electronic education using information and communication technologies for increasing quality of education and its efficiency (Torres et al., 2011). The education is provided mostly over framework of curriculum (Suchacek & Sed'a, 2011) and stimulates towards creativity and self-sufficiency. The users can use comfort of e-learning courses and simultaneously can feel that they are in real class, especially in cases of long-term illness when they study at home. A key to success of e-learning course is to react on arisen demands and needs of students. Just for students new courses appear. Through them students can improve their knowledge and make their work easier. Let's come to the optimum design of such a course.

Firstly, e-learning course must be user-friendly. Otherwise, student will not return into the course. It is a challenge for makers to design it attractively and at the same time transparently. An easy orientation in the course should be crucial.

Let's have a look into content of the course. Initial part or headline should content basic resume on the course. Here it is necessary to motivate student and make it clear what he can expect in the course and what he must do for it. If student is not sufficiently motivated to use new educational methods it can come to the failure of that form of study. Thanks to a lack of student's interest.

Further, in this part should be a tutor's contact (e.g. name, e-mail, phone number), electronic consultation hours and course guide (it is often neglect, even if it is important for especially distant students).

Following part is devoted to the study support which is professional part of the course. It should be divided into several topics according to the tutor's consideration. It is recommended for each chapter to have a space in the introduction for information on content and demanded time. Further, it is fine to deal with data which should be supported by various diagrams, charts, graphs, animations, simulators and etc. For present form of education it is

suitable to outline study support in e-learning to fill classical explanation in front of the blackboard. This could be done through study overview, dictionaries, links to interesting pages, presentations, tasks, setting seminar works and their handing in the system (Nevima, 2012a).

On the contrary for distant education we can recommend denser and understandable form as the support becomes crucial for self-study. That's way a form of electronic textbook, lectures, dictionaries, sound records, videos, interactive graphs etc. is suitable to be used. The whole range of elements is offered to a tutor. He can use them in his course. Except for mentioned, it is important to highlight auto-evaluation or proper tests which should not miss in every test. Students can test their knowledge, prepare themselves for similarly structured tests and remember some information from the course. If a tutor enables students to do test in e-learning, he will make his work easier and the results are ready right after completing test. That is advantageous for both students and teachers. It is a significant advantage of the test that they can be outline in form of test questions, free answers or matching tasks.

In each chapter there should be a space for students' opinion (feedback). A tutor has here various interactive elements at disposal, such as chats, forums and surveys which can be easily used for the purpose. It is necessary to put the elements in the course, otherwise they will lose sense. The students should have opportunity for on-line communication with a tutor. It will assure feedback so that a tutor will know if the course fulfilled its purpose and if students are satisfied.

To conclude above-mentioned, each chapter of the course should contain introduction, part of study materials, tasks and handing in seminar work and test of knowledge and express their opinions or ask tutor questions. In case tutor wants to add additional information or refer to some interesting matter which is not necessary to study, he should again make an extra space for it. A final part contains recommended literature (or it can be situated in an initial part). When keeping recommended optimal form of e-learning course we can presume that the efficiency of work in LMS (CMS) environment will increase. The part of e-learning support can be complex study support and further e-learning services – e.g. links on videos, examples to solving at interactive board, discussion forum, etc. (Nevima, 2012b).

b) Project education – students together with their teacher prepare contributions to selected topics and then present it to their classmates. The aim is to show students the problem in broader context and realize importance of cross-curricular binds. Business Academy and Higher Professional School of Social Work Ostrava has practical experiences with realization of project days on economic topic – Water and Money. Students under leadership of their teachers have prepared the project day, where the whole school has participated and where they could demonstrate the results of their several months work.

c) PC simulation – in today's digital era the space for using E-economics or E-maths (Sed'a, 2012) is being opened. It means to create such education conditions, which enable using of accessible SW support. One of the possible examples MESE – Management and Economics Simulation Exercise can be. These simulations show a problem of deciding in a firm to students and help them to understand basic market principles. The students are divided into groups (companies) at the same market; they sell the same product and try to be competitors. It is de facto broad version of traditional training/fictive companies which are typical for the most of business academies. The students by working with PC simulation will learn their own play simulation, mistake analyzing or train successful play strategies.

In the next part of the paper the situation of economics education at universities will be introduced. After evaluation of universities, partial recommendations towards strengthening of penetrability between secondary school and university, following.

### *3.2. Education of economics at economic oriented universities*

In the primary research there were 12 schools evaluated in total. The subject of evaluating was bachelor program of common base, the subjects of the first year of study.

As well as at the level of secondary schools, also in case of universities it is valid that teaching is divided into microeconomic and macroeconomic level. Some economic faculties have subject microeconomics A in the first term and macroeconomics A in the second term. It seems to be illogical that some universities start with macroeconomics and continue with microeconomics, as from methodological point of view, the microeconomics must proceed.

The introduction of unified form of education of microeconomics and macroeconomics according to the results of primary research follows.

Universal form of microeconomics A form:

- Economics as scientist discipline
- Elements of market
- Consumer decisions
- Producer theory and organization of industry
- General equilibrium
- Costs of production, benefits, economic vs. accounting profit
- Perfect and imperfect competition of firm
- Factors of production
- Cutting edge topics in economics and theory of public choice

The curriculum of the subject can slightly vary if it is a profile branch of study and student during further studies, after going through microeconomics B, specializes in subjects such as Competitive economics or Public economics.

Universal form of macroeconomics A form:

- Macroeconomic aggregates – GDP (Tvrdon, 2010), inflation, unemployment, balance of payment
- The Keynesian multiplier model
- Stabilization policy and the AS/AD framework
- Economic growth a business cycles
- Economic policy
- Fiscal policy and public debt
- Monetary policy
- International trade and exchanges rates
- Theory of integration process

Also in this subject it is valid that its curriculum can slightly vary, if it is a profile branch of study and student after going through macroeconomics B reaches specialization in the following subjects such as regional and Environmental economics, Descriptive economics, International economics, Comparative economics or Institutional economics.

### *3.3. Evaluating examine in economics subject at Business Academy and Higher Professional School of Social Work Ostrava*

In permanent process of improving quality of educational process regular measures of students' satisfaction with quality and content of classes in economics subjects are provided. This questionnaire investigation has an aim to obtain feedback from students of economics at secondary school. The part of the investigation is also to verify, which topics are the easier and the most difficult for students. The results contribute to measures (see part Final remarks) on which parts/topics concentrate more and which to strengthen. This leads to approach of secondary school toward university in curriculum in economics subject and penetrability. The questionnaire, apart from professional topics, has mapped also the other areas evaluating quality and form of economics subject (see Appendix B). Based on evaluating of the questionnaire we can accent especially following:

- For about 35% students the economics subject is fairly demanding, comparing with other economic subjects.
- The most demanding topics are - overview of history of economic theories (thoughts) and macroeconomic aggregates.
- Among less demanding topics belong – elements of market and company behaviour in condition of (im)perfect competition.
- More than 65% of students consider e-learning support of economics study as beneficial.

- In the Basics of Economics textbook (Nevima, 2011) students would mostly appreciate a collection of examples and tests for practising and more practical examples to the terms.
- Students in the rate 50:50 answer, that the obtained knowledge they will use in further studies or directly in practise.
- Students would most appreciate more space for their presentations of economic problems and discussion. In the end of the summer term they stated that the subject could be taught since 3rd year of study and with higher amount of hours.

### 3.4. Final remarks

From above mentioned it follows that economics subject teaching at secondary schools and universities is not consistent. We can state following methodical recommendations towards strengthening penetrability.

In secondary education:

- Strengthen economics as basic discipline which will be superior to economics subject (according to author economics subject according to its content suits business economy subject).
- Prepare sustainable developing projects which strengthen penetrability of secondary schools and universities, e.g. by cooperation in processing accreditation materials, by preparing common lectures for secondary school students for them to better adopt of university study or cooperation when preparing study materials.
- Implement more interactive materials and PC simulations branch-profiled into economics teaching.

In tertiary education:

- Stress more methodological background of the methods used in economics.
- Regarding further branch- profiles compose mezzoeconomics in to basic course of economics.
- Fill in into the basic economics introduction of overview of history of economic theories (thoughts), which in comparison with secondary level will be spread of practical applications in contemporary economics.

For secondary and tertiary education areas consider introducing of competitiveness (Nevima & Kiszova, 2013) topics not only at microeconomic level, but also at macroeconomic level (regional and national level).

## 4. Conclusion

The article has devoted to the problem of economics subject teaching at secondary schools and universities. When analysing curricula in details at secondary and tertiary levels it is obvious that economics becomes more important and especially at secondary vocational schools. Students in evaluating survey show their interest in the subject and they are aware they will meet the subject at university during the first year of study. That is why should enforce economics as interesting discipline for students and motivating towards deeper study. It is necessary to concentrate on effective strengthening of penetrability.

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## Appendix A.

### A.1. List of all involved secondary schools

1. Business Academy, Břeclav

2. Higher School, Secondary Technical School and Business Academy, Čáslav
3. Higher School and Business Academy, Chotěboř
4. Business Academy, Kroměříž
5. Business Academy and Secondary School of Logistics, Opava
6. Business Academy, Prostějov
7. Business Academy, Nevyklov
8. Grammar school and Business Academy, Chodov
9. Grammar school and Business Academy, Mariánské Lázně
10. Business Academy T.G. Masaryka and Language School with state exam, Jindřichův Hradec
11. Business Academy, České Budějovice
12. Business Academy and Higher School, Příbram
13. Business Academy, Plzeň
14. Hotel School, Business Academy and Secondary Technical School, Teplice
15. Business Academy, Hotel School and Secondary Technical School, Turnov
16. Business Academy, Česká Lípa
17. Business Academy, Higher School of Tourism and Language School with state exam, Karlovy Vary
18. Grammar school, Secondary School of Economics and Secondary School, Kaplice
19. Business Academy, Praha 3
20. Business Academy and Language School with state exam, Liberec
21. Business Academy and Language School with state exam, Písek
22. Private business entrepreneur academy
23. Business Academy and Higher Professional Social School, Ostrava-Mariánské Hory

#### A.2. List of all involved universities

1. Silesian university in Opava, School of Business Administration in Karvina
2. VSB – Technical University Ostrava, Faculty of Economics
3. Private College of Economic Studies in Znojmo
4. Brno University of Technology, Faculty of Business and Management
5. Tomas Bata University in Zlín, Faculty of Management and Economics
6. Masaryk University, Faculty of Economics and Administration
7. University of Pardubice, Faculty of Economics and Administration
8. Technical University of Liberec, The Faculty of Economics
9. Mendel University in Brno, Faculty of Business and Economics
10. University of South Bohemia in České Budějovice, Faculty of Economics
11. University of Hradec Králové, Faculty of Informatics and Management
12. College of Information Management and Business Administration

## Appendix B.

Economics subject, when comparing with other subjects, is demanding:

- very demanding
- similar to other economic subjects
- is not demanding

List please, which so far taught topics were the most demanding for you:

List please, which so far taught topics were the less demanding for you:

Using support of LMS Moodle (e-learning) seems to you as a tool for education support:

- suitable
- arguable

- useless

What would you change or add in the current textbook? (whatever ideas)

How do you evaluate proficiency of teacher?

- excellent  
 very good  
 good  
 sufficient  
 insufficient

Do you think you will use obtained knowledge of this subject?

- at entrance exams at economic universities  
 in practise  
 not at all

Teacher has evaluated you:

- justly and objectively  
 unfair  
 evaluation was subjective  
 your opinion:

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