Teaching Model in Economics Education, Based on the Interactive Connection 'Science – Education - Business'

Maria Markova[1]

University of National and World Economy, Bulgaria[1]

Abstract

The teaching model contains 4 main interconnected elements in the field of teaching students in Economics education based on the interactive connection 'science – education – business'.

1. *The results of researches made by the academic staff in business, entrepreneurship and science and technology are presented to the students in economic courses, including the current issues of economic development in an open global and digital economy.*
2. *In the process of academic discussion, students ask their questions about current topics relevant to business and the studies of academics. These topics are embedded in planned future research activities and projects of academic researchers.*
3. *Students undertake hands-on training in companies and institutions, thus they are gaining knowledge and skills in business and for application in business.*
4. *The business sets requirements for students' knowledge and skills for the purpose of their full and effective application in the real business environment*

These relations between academic staff, students and business, following the line 'science- education-business' are based on the principles of academic spirit and good business practices in the conditions of interactivity and conformism.

As a result the presented teaching model the students achieve:

1. *The students develop their analytical research skills, communication, presentation and discussion skills.*
2. *The students work effectively in the conditions of transparent discussion and open dialogical regime in the condition of the adequate effective implementation in a real business environment on the conditions to rapid answer relating to the real business course problem.*
3. *The students are motivated for searching new trends, new academic research results in the real business environment by raising questions and finding the adequate answer for implementation in a real business practice*
4. *The students are highly motivated in this process for creative thinking, for combinative research and implementation activities both: in the academic and in the business practice.*

The academic lecturers takes into account all of the elements of business analysis, entrepreneurship analysis and scientific technological research based on IP rights.

Keywords: Teaching, economic education, business, IP rights.

1. Introduction

The teaching model with 4 main interconnected elements in the field of teaching students in Economics education based on the interactive connection 'science – education– business' aims to give students knowledge and skills as following:

1. analytical and research skills, communication, presentation and discussion skills.
2. to work effectively in the conditions of transparent discussion and open dialogical regime in the condition of the adequate effective implementation in a real business environment on the conditions to rapid answer relating to the real business course problem.
3. a motivation for searching new trends, new academic research results in the real business environment by raising questions and finding the adequate answer for implementation in a real business practice; for creative thinking, for combinative research and implementation activities both: in the academic and in the business practice.

2. Content of the practical part of the course

Regarding point1. The results of researches made by the academic staff in business, entrepreneurship and science and technology are presented to the students in economic courses, including the current issues of economic development in an open global and digital economy.

For example, as an academic researcher in the field of intellectual property, in lectures on "IP in industry" I present to students the latest trends in the application and registration activity in the field of artificial intelligence with brief introduction

Artificial intelligence[1], sometimes called machine intelligence, is intelligence demonstrated by machines, in contrast to the natural intelligence displayed by humans.

Artificial intelligence was founded as an academic discipline in 1956, followed by new approaches, success and renewed funding and the sub-fields such as "robotics" or "machine learning".

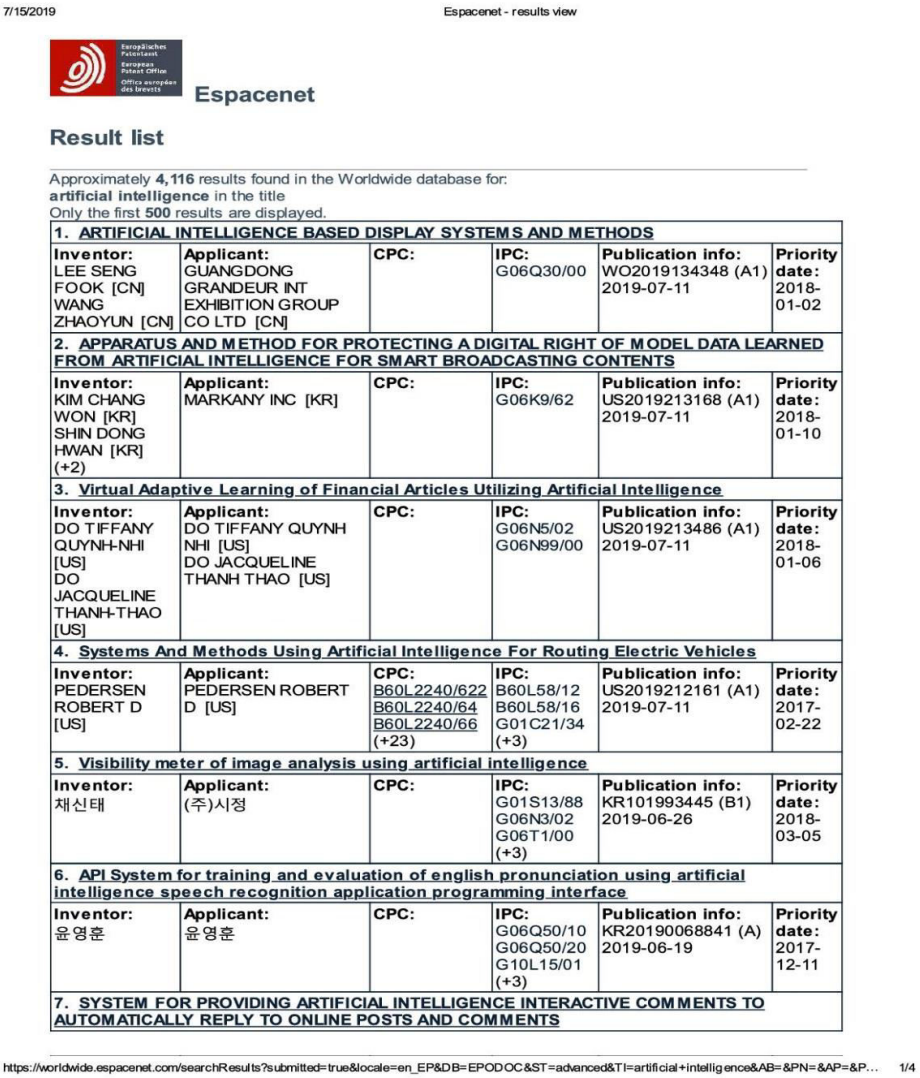
In the early 1980s, AI research was revived by the commercial success of expert systems and forms of AI program that simulated the knowledge and analytical skills of human experts.

In the late 1990s and early 21st century, AI began to be used for logistics, data mining, medical diagnosis and other areas, statistics, economics, etc.

To the end of July, 2019, the system of patent search worldwide Espacenet[2] shows 4116 patent application and issued patent for AI.

The first application for AI was dated of 1996 year and for the 2017q 2018 and 2019 – more than 1200 per each year.

Foe the last 2019 year the EPO list of applications shown are the following



7/15/2019 Espacenet - results view

Espacenet

Result list

Approximately **4,116** results found in the Worldwide database for:
artificial intelligence in the title
Only the first **500** results are displayed.

1. ARTIFICIAL INTELLIGENCE BASED DISPLAY SYSTEMS AND METHODS					
Inventor: LEE SENG FOOK [CN] WANG ZHAOYUN [CN]	**Applicant:** GUANGDONG GRANDEUR INT EXHIBITION GROUP CO LTD [CN]	**CPC:**	**IPC:** G06Q30/00	**Publication info:** WO2019134348 (A1) 2019-07-11	**Priority date:** 2018-01-02
2. APPARATUS AND METHOD FOR PROTECTING A DIGITAL RIGHT OF MODEL DATA LEARNED FROM ARTIFICIAL INTELLIGENCE FOR SMART BROADCASTING CONTENTS					
Inventor: KIM CHANG WON [KR] SHIN DONG HWAN [KR] (+2)	**Applicant:** MARKANY INC [KR]	**CPC:**	**IPC:** G06K9/62	**Publication info:** US2019213168 (A1) 2019-07-11	**Priority date:** 2018-01-10
3. Virtual Adaptive Learning of Financial Articles Utilizing Artificial Intelligence					
Inventor: DO TIFFANY QUYNH-NHI [US] DO JACQUELINE THANH-THAO [US]	**Applicant:** DO TIFFANY QUYNH NHI [US] DO JACQUELINE THANH THAO [US]	**CPC:**	**IPC:** G06N5/02 G06N99/00	**Publication info:** US2019213486 (A1) 2019-07-11	**Priority date:** 2018-01-06
4. Systems And Methods Using Artificial Intelligence For Routing Electric Vehicles					
Inventor: PEDERSEN ROBERT D [US]	**Applicant:** PEDERSEN ROBERT D [US]	**CPC:** B60L2240/622 B60L2240/64 B60L2240/66 (+23)	**IPC:** B60L58/12 B60L58/16 G01C21/34 (+3)	**Publication info:** US2019212161 (A1) 2019-07-11	**Priority date:** 2017-02-22
5. Visibility meter of image analysis using artificial intelligence					
Inventor: 채신태	**Applicant:** (주)시정	**CPC:**	**IPC:** G01S13/88 G06N3/02 G06T1/00 (+3)	**Publication info:** KR101993445 (B1) 2019-06-26	**Priority date:** 2018-03-05
6. API System for training and evaluation of english pronunciation using artificial intelligence speech recognition application programming interface					
Inventor: 윤영훈	**Applicant:** 윤영훈	**CPC:**	**IPC:** G06Q50/10 G06Q50/20 G10L15/01 (+3)	**Publication info:** KR20190068841 (A) 2019-06-19	**Priority date:** 2017-12-11
7. SYSTEM FOR PROVIDING ARTIFICIAL INTELLIGENCE INTERACTIVE COMMENTS TO AUTOMATICALLY REPLY TO ONLINE POSTS AND COMMENTS					

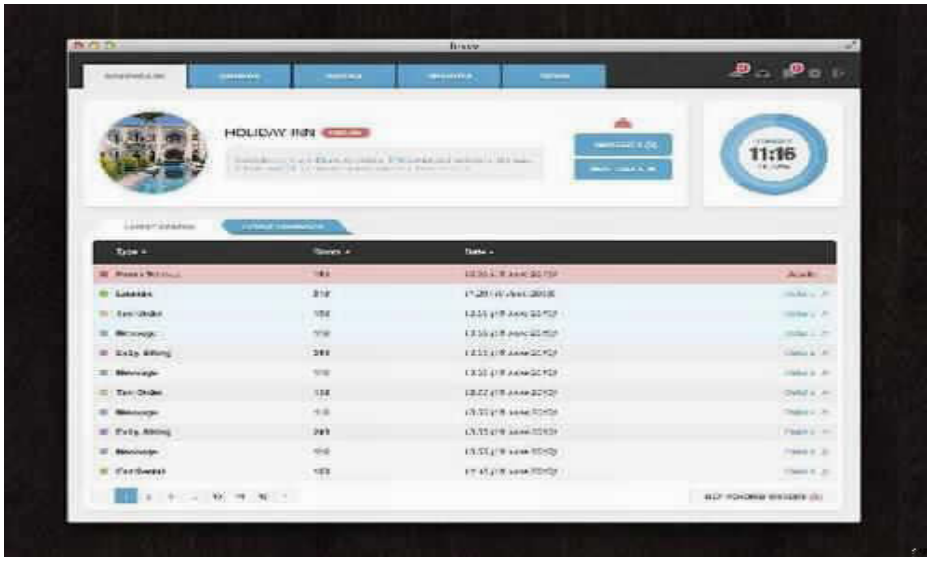
https://worldwide.espacenet.com/searchResults?submitted=true&locale=en_EP&DB=EPODOC&ST=advanced&TI=artificial+intelligence&AB=&PN=&AP=&P... 1/4

[1] AI as a content and sub areas described following the most common source: www.en.wikipeida.org

[2] www.epo.org/espacenet. The European Patent Office offers Espacenet as a free tool for free access to over 110 million patent documents for beginners and experts to perform patent searches for inventions and technical decisions from all over the world.

Most of the applicants are from the following countries: Korea and USA.
In Bulgarian PO are published more than 100 patent applications in this technological area.
Example: A manipulating and pacing robot with application bg112006 from 2016-11-30 inventor Ivan Chavdarov and applicant: Institute of system engendering and robotics of BSA with brief abstract: The invention relates to a pacing robot, which uses three support areas when moving. The same parts of the robot can be used for movements or for manipulating objects. This invention finds use in inspection and expedition, for rescue and reconnaissance operations and actions in terrains through which it would be hard to navigate. The combination of the ability to handle objects and move through specific terrain finds unconventional and industrial uses.
In the areas of registration activity for design: results for application and registration activity in RCD, for trends in the activity of Bulgarian and foreign companies in a selected field: for example security design of software products Examples: in protected design solutions in classes 14–04 “Screen images and icons”, including graphical user interface, computer icons and computer screen layout.

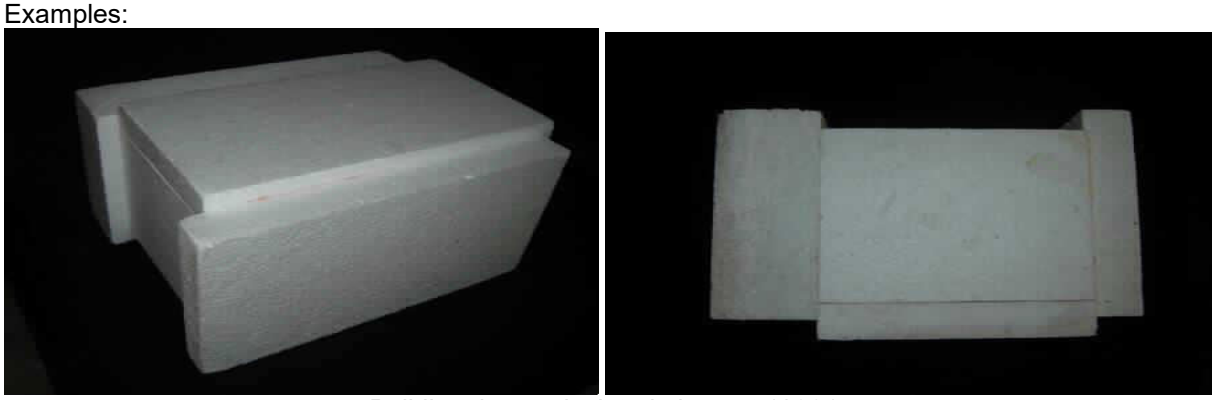
In the audience with the students we discuss and analyze facts and trends, in swot and factor analysis, as well as expected future developments.
We also study the policy of Bulgarian companies in the protection of their software solutions for web pages, computer icons and graphic design - over 68 designs for the last 5 years.



Registered in 2015, interface design of company ‘Invent Creative’ LTD

Regarding point 2. In the process of academic discussion, students ask their questions about current topics relevant to business and the studies of academics. These topics are embedded in planned future research activities and projects of academic researchers.
The discussion with the students identifies leading companies - researchers, leading companies - followers, Bulgarian companies with achievements in the field of new technologies for example: Company policy in the field of protection of design results: for example in the field of new design results for construction solutions especially registered industrial designs in the construction business in Bulgaria Industrial designs: the registered IDs are related to the constuctions, including elements, profiles, booths, panels, concrete building blocks, lockers, doors.

Examples:



Building thermo-isolated element 1/ 2017

Pavilion registered in 2012

Summarize:
We identified high level of application and registration activity in IDs of constructive business for 10 years period with more than 600 acting IDs. Approximately 15-23 % of all IDs annually for the years of weak activity /2011, 2015/, approximately 60% of all IDs annually activity for the years 2016 and 2017 in the different years in the 10 years period are in the field of constructive business. Then we analyzed the business factors for this ten years period IDs activity.

Regarding point 3. Students undertake hands-on training in companies and institutions, thus they are gaining knowledge and skills in business and for application in business.

As Included in the curricula for training students in economics is the conduct of the so-called practical training and company internship.
Students carry out practical training in institutions and companies, relevant to economic issues and their training. Eg. students in "Intellectual Property and Business" are trained practically in companies with consulting in the field of intellectual property.
In particular: carry out real research for protected innovations, for opportunities for protection of new technological and product solutions through IP objects: patents, utility models, designs, TEC, others when asked by clients of the company for potential protection of the company business identifiers.
For example: a holding company operating in the field of hotel services raised the question of the possibilities for protection of their brand TIVA DEL MAR. The students conducted a study of identical and similar marks containing this verbal element in 41 and 43 classes. They made a report from the study, which was presented to the company and company management decided and applied this mark for registration on national way on 28 of April, 2020 in Bulgaria.

Regarding point 4. The business sets requirements for students' knowledge and skills for the purpose of their full and effective application in the real business environment

In the course of the practical training of the students in business, business in the person of the direct manager on site in the company they receive questions, cases for solving and specific tasks.
Thus, on the spot in the company, students are provoked to make decisions, to use the acquired knowledge and skills in the course of academic training and acquire new skills in business practice.
For example, in the course of the student internship in the company "Microtel" Ltd. the management of the company raised the issue of protection of its new equipment for return of edged details.The main application of the proposed utility model is in the furniture industry. The model is also used in the production of stone and glass products in the detaills: steps, window sills, faceted glass and others, where machines are used for veneering and polishing edging, working on a similar principle.
The students conducted a study on innovations in the field of edging machines and presented a substantiated proposal for protection of innovation through a utility model in Bulgaria. The management of the company accepted the offer and applied within BPO.
These relationships between academic staff, students and business, following the line "science - education - business", are based on the principles of academic spirit and good business practices in the conditions of interactivity and conformism.

3. Conclusions

The presented teaching model has many advantages:
A. For students:
1. develop their analytical research skills, communication, presentation and discussion skills.
2. work effectively in the conditions of transparent discussion and open dialogical regime in the condition of the adequate effective implementation in a real business environment on the conditions to rapid answer relating to real business course problem.
3.a motivation for searching new trends, new academic research results, for finding the adequate answer for business practice

B: For academic researchers/lecturers
1. to share and provoke their thinking in an academic environment
2. to identify new problems for which they will seek solutions in the future
3. to takes into account all of the elements of business analysis, entrepreneurship analysis and scientific technological research based on IP rights.

C: For business:
1. to receive the latest academically substantiated information
2. to set alternative solutions for its issues
3. a motivation for combinative thinking and implementation the academic results in the business.

References

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