Personal development in the knowledge-based economy

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Abstract. The main objective of this paper is to examine the effects of the education on personal and professional development models. In the knowledge-based economy, the emphasis on human capital development generates two parallel effects of the economic education: microeconomic and macroeconomic. The study is based on the use of the questioning technique (for a profound exploration of the ideas) and statistical methods to determine how an increase in an educational component affects the structure of the individual development plan, so in fact the interaction between various thinking modes. In this respect, this paper studies the correlation between the duration of the educational process and the results obtained by the students in the knowledge evaluation process. In the future, based on these studies, correlations can also be made between the time spent on studying and the professional and personal achievements.

1. Introduction
The knowledge-based economy has led to an increase in the quality and complexity of the educational process. This phenomenon also highlighted the increasing involvement of the educational units and the providers of continuous professional training in personal and professional development processes.

In order to achieve an effective level of personal development (development of a personal brand), we must first become aware of the existence and use of elements such as: knowledge, relationships, behaviour, habits (including the social ones - leading to a better life community), meditation (reduces anxiety and increases happiness) and environmental protection (which together with the sustainable development led to the emergence and implementation of the "sustainable happiness" concept) [1,2].

The sustainable happiness has become an interdisciplinary concept: derived from sustainable development, has been implemented and developed in areas such as quality of life (based on sustainable welfare), positive psychology, research and education [3,4].

The professional development is generated by the sum of the effects between sustainable education and positive education. The sustainability of the education starts from the ecological education (of children, students and managers) and continues with the integration of transversal management and knowledge-based management in educational processes.

The positive character of the education implies understanding the changes brought about by the digital economy in social, technological and economical processes, followed by their correct and effective integration into the educational processes.

2. Continuous personal development case study
A personal development plan helps us to structure our thinking. The personal development planning concept refers to the creation of an action plan based on:
• Awareness of the situation - the subjects of this case study are aware that they are fourth-year students (final-year students) and have to devote all their efforts and energies to finishing their undergraduate studies. They have to answer at least two questions: What is the purpose of life? and What should I do about my existence? The answers to these questions will guide them in the process of implementing an action plan based on realistic and coherent strategies [5];

• Reflection on the situation - the key question is the following: Have you ever questioned how you can translate into real life what you have accumulated during your college years? If the answer is positive and well-reasoned, each individual will reflect on the specific situation, based on answers to questions such as: What will happen after I finish the faculty?; How will further act?; Can I become a good specialist in engineering?; Am I prepared to take responsibility for what I am and what I do? [6];

• Establishing short-term individual objectives - depending on specific criteria (e.g. if the person is employed or not), the objectives may be as follows: I want to start a job in the engineering field; I want to improve myself by using the opportunities available at the workplace; I want to pursue a masters degree in engineering (or in economics). The integration into the labour market depends on employability, defined by the International Labour Organization, as "everyone's ability to find and keep a job, to progress in the workplace and to adapt to change throughout the professional life" [7];

• Establishing an action plan for personal development in the context of career, education or family life - trusting in the future is influenced by the economical (economic growth / recession cycles), political and cultural conditions existing at a given time. In the implementation process of a personal development plan, young people are exposed to family, pecuniary or even existential difficulties. The content of the personal (individual) development plan depends to a large extent on the answer to the question: What do I put in the first place - career, education or family? Thus, a lot of students begin their development through internship programs or by approaching various entities to carry out volunteer activities (as the foundation of a future career). This model has been taken over from developed countries like USA or Canada, where high school and undergraduate students carry out volunteer activities or community service on their own initiative [8,9].

In the Faculty of Engineering and Management of Technological Systems (EMTS) from University Politehnica of Bucharest (UPB) and at the Faculty of Law and Administrative Sciences (FLAS) from "Dimitrie Cantemir" Christian University of Bucharest (DCCU) we encountered various personal development models, based on certain motivations, according to Table 1.

Table 1. Personal Development Models and Motivation (Extract)

| Graduate University 1 | Enrolled University 2 | Motivation |
|-----------------------|----------------------|------------|
| “Ferdinand I” Military Technical Academy of Bucharest. Faculty of Mechatronics and Integrated Armament Systems. Department of Aircraft Integrated Systems and Mechanics. | DCCU, FLAS, Public Administration Specialization | The possibility that after a period of time he/she will no longer be considered medically fit at the medical control specific for military pilots. |
| University of Bucharest, Faculty of Orthodox Theology "Justinian the Patriarch". | DCCU, FLAS, Law Specialization | Possibility of being able to occupy a leading position within the clergy in the future. |
| Spiru Haret University. Faculty of Physical Education and Sport. | EMTS Master degree program. Equipment for Recovery Therapies Specialization | Making connections between physical movements and various rehabilitation |
The main motivations influencing the personal (individual) development plans are generated by factors such as human interactions, personal preferences, existing competencies, regional / national policy, mass-media, and the level of geographical development and dispersion of the industry. Those who place education in the first place (in parallel with a job or not) choose to attend a second faculty (10%) or a master program (70%). This option generally belongs to people who have financial resources (studies are paid by parents / relatives / friends) [10,11].

The category of those who choose the family option (about 5%) is very low due to socio-economic conditions, trying to answer a set of questions such as: What do I offer to my child? If I work until 19.00, who babysits? Do I have money to pay such a person? Is it worthwhile to get a loan from the bank to have a home? These people try to solve the equation that leads to the balance between professional and family life. The small number of those who have solved it has led to an aging population and the need for workforce import [12].

The personal development plan depends directly on medium-term organizational strategies and objectives.

These cannot be achieved in the long run due to the complexity and speed of the changes in the labour market. The educational system units have as their main objectives the achievement of excellence, ensuring equity, promoting well-being and improving public confidence. Students must acquire the skills, knowledge and attributes necessary to become "specialist citizens". Graduates must become personally fulfilled, economically productive and involved in the life / evolution of their community.

This goal is also achieved by means of continuous professional training. There are specialized courses in the UK having the Qualification title: Certificate, Extended Certificate or Diploma in Teamwork and Personal Development in the Community [13].

3. Duration of the learning process reflected in the knowledge assessment
The present study aims at identifying the correlation between the attendance of students (at courses and seminars) and the scores obtained during the semester. We calculated the Pearson coefficients for the variables pairs "attendance number and test scores" as well as "attendance number at the seminar and test score". There are 120 analyzed subjects. Table 2 shows a partial sequence of the analyzed data when two tests were performed during the semester. Each test contains two sections, theory and applications, each of which being marked with a maximum of 15 points. The score accumulated by a student during a semester can be up to 60 points.

The two papers represent the condition in order to attend the exam. According to course and seminar attendance sheets, we identified for each student the number of attendance at courses and seminars, for a given semester discipline.
We also filled in Table 2 the score obtained in each test. As 14 courses and 14 seminars took place in a semester (in the discipline subject to research), we calculated the cumulative frequency of attendance at the course and seminar in a semester, as shown in Figure 1. It is noted that over 50% of students have an attendance frequency over 50% at courses and seminars.

Table 2. Attendance number at courses, seminars and the score (partial sequence of data)

| No. | Course | Seminar | Course Seminar | T1 theory | T1 aplic | T2 theory | T2 aplic | Semester | Total theory |
|-----|--------|---------|---------------|-----------|----------|-----------|----------|-----------|-------------|
| 1.  | 2      | 4       | 6             | 5         | 4        | 5         | 5        | 19        | 10          |
| 2.  | 2      | 4       | 6             | 4         | 4        | 4         | 4        | 17        | 8           |
| 3.  | 12     | 8       | 20            | 13        | 4        | 4         | 6        | 27        | 17          |
| 4.  | 5      | 5       | 10            | 4         | 5        | 4         | 4        | 17        | 8           |
| 5.  | 4      | 4       | 8             | 5         | 6        | 9         | 10       | 30        | 14          |
| 6.  | 5      | 6       | 11            | 5         | 7        | 8         | 9        | 29        | 13          |
| 7.  | 10     | 8       | 18            | 9         | 8        | 7         | 9        | 33        | 16          |

Knowing that the Pearson correlation coefficient is a numerical index that represents a measure of the relationship between two quantitative continuous/discrete variables, we identified that there is a good correlation between total attendance (course + seminar) and total theory score (Figure 2). In Figure 3, we identified the correlation between total attendance at Course_seminar and Scores_Total_seminar, noting that this is lower than in the previous case.

Analyzing at the end of semester the accumulated attendance at courses and seminars, together with the score obtained by the students, we can see that there is a significant value of the correlation coefficient for these values, its value being 0.748 (Figure 4). According to Colton's empirical rules (1974), if the determined correlation coefficient ranges between 0.5 and 0.75 (or from -0.5 to -0.75) it indicates a moderate to good correlation, and if it is greater than 0.75 (or less than -0.75) it indicates a very good association or correlation [14,15].

Following the Pearson coefficients identified in Table 3, it can be noticed that all the analyzed values indicate a moderate to good correlation, but also a very good association for the following correlations:

**Figure 1.** Cumulative frequency distribution course and seminar per semester.

**Figure 2.** Correlation between Course_seminar and Scores_total_theory.
Course and Scores_Total_theory, Seminar and T2_aplic, respectively between Seminar and Scores_Total_seminar [16,17].

![Figure 3. Correlation between Course_seminar and Scores_Total_seminar](image1)

![Figure 4. Correlation between Course_seminar and Scores_Total_seminar](image2)

**Table 3. Pearson coefficient**

| Array 1               | Array 2                 | Corelation Pearson |
|-----------------------|-------------------------|--------------------|
| Course_Seminar        | Scores_Total_theory     | 0.73               |
| Course_Seminar        | Scores_Total_seminar    | 0.63               |
| Course_Seminar        | Scores Semester         | 0.74               |
| Course                | T1_theory               | 0.74               |
| Course                | T2_theory               | 0.69               |
| Course                | Scores_Total_theory     | 0.78               |
| Seminar               | T1_aplic                | 0.72               |
| Seminar               | T2_aplic                | 0.76               |
| Seminar               | Scores_Total_seminar    | 0.77               |

There is a correlation between the number of hours attended by a student at courses and seminars and the score obtained at the semester assessments.

### 4. Conclusions

The personal development (PD) is a challenge both for the person concerned and for those who assist, evaluate and use his/her results (in this case, the family, teachers and employers), because PD is not limited to self-development. PD uses talent and knowledge to increase employability, improve the quality of life, and achieve aspirations / dreams. The activities proposed and conducted through PDP lead to the improvement of the awareness (self-awareness) and listening skills, thus implicitly to new discoveries about oneself and not only. Similar to the positive nature of education, new generations
consider positive personal development a combination and a selection based on personal knowledge
criteria acquired in the educational process and in everyday work.

They are attached to new areas of interest such as recruitment policies (specific to the field) and
knowledge of health and safety legislation. The need to develop and implement effective personal
development plans has led to the development of professional training programs specific to the various
fields of activity: PDP for engineering, medicine, education, tourism etc. There are correlations between
intangible assets (manager / employee knowledge) and the time spent on learning by the people
concerned. The results obtained in evaluations during the schooling period largely reflect the basic skills
and competences of an individual.

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