INTELLECTUAL INVESTMENT. THE PROSPECTS IN EDUCATION IN THE USA AND IN THE EU

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ABSTRACT: This paper approaches a few theoretical issues related to the investments in intellectual capital and those in human capital, these investments influencing education system and society. As a particular case, we have analysed the education prospects for the next ten years in the USA and in the European Union, the education system being one of the most important immaterial investments, with a decisive impact over the society we live in. The main conclusion is this: a tendency of increase in the number of individuals who will hold a higher education diploma, both in the USA and in the European Union. In other words, the decrease in the number of secondary school graduates and high school graduates is desired.

KEY WORDS: intellectual capital; human capital; education system; intellectual investment; efficiency

JEL CLASSIFICATION: A20, I10

1. INTELLECTUAL INVESTMENT

The concept of intellectual capital has been defined and solidly argued for the first time by Thomas A. Steward, one of the editors of the famous American magazine Fortune. Specifically, it represents the totality of what each employee in a company knows and can be used in the development of its competitive capacity (Steward, 1999).

As opposed to the elements manipulated by the accountants and by those who assess the value of a company - land, buildings, equipment and financial flows, intellectual capital is intangible. That's why it is very difficult to identify and assess.

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But those who manage to do it, even if approximately, they have a competitive advantage. "Intellectual capital is the intellectual material - knowledge, information, intellectual property, experience - which can be used in order to create wealth" (Brătianu, 2006).

The features of intellectual investment are:

- **heterogeneity** - determines that type of expenses which don't represent a supplement, but they are part of the structure of the company's expenses and have their own effect upon the company;
- **human corporation** is certainly a major particularity of intellectual investments; it has significant effects which explain the profitability of the investment. For instance, an investment patent resulting from an effort of research-development is found in a collection of documents;
- **social and collective character** - formation and research emerge simultaneously as private investment and as public investment;
- the lifespan of intellectual investment depends on its diverse uses - intellectual investments are usually long term investments, because their results, their effects emerge after a relatively long period;
- the term of recovering the intellectual investment is shorter than that of material investment - with intellectual investments the moral wearing occurs later than with material investments;
- intellectual investment is **supple, flexible**, being less specialized in connection with material investment, the latter being destined to an exact specialization;
- the effects of intellectual investments are **multiple** (economical, social, human) as compared to those of material investments and are more difficult to be quantified.

Seven components which belong to intellectual investment:

- research-development - where intelligence replaces an essential function of investment;
- training and development of human resources - the proper place to exhibit knowledge;
- commercial investment according to which man applies his/her intelligence for determining the dimensions of his/her activity;
- investment in information systems, which divides our abilities in intelligence forms artificially named;
- investment in new ways of organisation and participation in the decisions which put an emphasis on man;
- investment in production materials, targets and processes by which we divide our intelligence;
- strategic investment, based on everything it precedes, because man confronts his/her intelligence to complexity or to length and thus builds what is to be named his/her future (Matei, 1996, p.48).

In the following table there are a few samples of intellectual capital:
Table 1. Components of intellectual capital

<table>
<thead>
<tr>
<th>Sample</th>
<th>Components of intellectual capital</th>
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<tbody>
<tr>
<td>Balanced Scorecard (Norton and Kaplan)</td>
<td>Intellectual capital is not presented on components. This sample suggests we should consider organisation from 4 different perspectives: the learning and growth perspective, internal processes perspective, customers perspective, financial perspective, which are much similar with some of the classifications on components of the intellectual capital developed later on.</td>
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</tbody>
</table>
| Sveiby's Intangible Assets Monitor          | • External structure  
• Internal structure  
• Individual abilities                                                                                                                                                                                                                 |
| Skandia                                      | • Human capital  
• Structural capital, which in its turn is divided in customers capital and organisational capital, which is the innovational capital and processes capital.                                                                                                                         |
| Intellectual Capital Index                   | • Human capital (abilities, attitude, intellectual agility)  
• Structural (relational, organisational and innovational/development) capital                                                                                                                                                           |
| The Technology Broker’ IC Audit             | • Market assets  
• Human capital  
• Intellectual property  
• Infrastructural capital                                                                                                                                                                                                                  |


One of the most well-known samples is the one suggested in 1996 by Hubert Saint-Onge, from the Canadian Imperial Bank of Commerce and by Leif Edvinsson, from the Swedish insurance company Skandia. In the specialty literature it is known as Skandia sample and it has been taken over and described in detail by Thomas A. Steward in his works. It is interesting to underline that, at that time, Hubert Saint-Onge held the position of vice-president for organisational learning and leadership development, whereas Leif Edvinsson was director, dealing with intellectual capital within Skandia. The creation of such brand new management positions proves that practical business life has surpassed the theoretical occupations coming from universities and research.

Financial capital is the measurable component of the tangible resources, and intellectual capital is the financially immeasurable component of the intangible resources. Human capital is the total number of employees in a company, with all their knowledge, experiences, skills and individual talents, and structural capital is the component which belongs to the organisation and can be defined as what is left in the organisation after the employees go home. Consumer’s capital refers to the whole relational system used by the company in order to satisfy their customers as best as they can and in order to reach a high level loyalty of the consumers to the company products and services. Organisational capital comprises the component of the process capital and the component of the innovational capital. The component of innovational
capital refers to the innovation process and to its results. The innovational capital comprises the intangible resources attached to the innovational process and the intellectual property of the company, represented by patents, trade marks or other intellectual property rights.

![Diagram of Intellectual Capital](http://managementmarketing.ro/pdfs/articole45.pdf) [accessed on 15.05.2010]

**Figure 1. Skandia sample**

### 2. INVESTMENT IN HUMAN CAPITAL

Besides the expenses for formal education and professional adjustment, the investment in human capital involves the expenses assigned for health insurance, those for finding a job and last, but not least, those for the efforts of the families, made both before entering the formal educational system, as well as afterwards (Suciu, 2000, p.67).

Another definition of human capital is: "stock of experience and knowledge collected and stored up inside the human being, which represents for its holders a possible future revenue, based on the productive services provided" (Dobrotă, 1992).

It is considered that investment in human capital means using financial resources so that the individuals get knowledge, professional qualifications and so on, with the help of which they be able to increase their contribution to the production of the community, respectively to their possible revenue, to their employment on the labour force market (Culyer & Wieseman, 1977).
In the foundation of the human capital concept one has started from the following considerations:

- goods in the sense of capital mean resources, products or goods which can be used in order to produce future goods; machines are capital, as well as industrial and commercial buildings, as well as knowledge and professional skills that people get through education, qualification or experience and which allow them to provide production services of great value to others;
- the resources production implicitly determines the formation of capital or investment. Similarly to permanent capital, which is the result of an investment, human capital results from investments made previously in order to get this form of wealth, which becomes potential, generating future revenues. That's the reason why people make investments in them by attending schools, acquiring special professional qualifications, practising certain jobs or increasing in other ways the value of the services they are able to provide to others. It is thus logical, to consider such investments as acquiring human capital (Hayne, 1991, p.234).

*Human capital* is characterised by:

- personalisation - human investment involves the entire individual upon which it is performed;
- limitation of human capital - not corporating the human capital in individuals limits the acquiring possibilities and stays tributary to the physical and cerebral abilities of the investor;
- opacity of human capital - hidden within an individual, the human capital is relatively opaque and difficult to be perceived by another person (Matei, 1996, pp.12-13).

3. EDUCATION - AN IMATERIAL INVESTMENT

It can be admitted that education has become the most advanced form of investment. According to Drucker, the more productive and the higher its profit rate is, the more "advanced" is an investment. But it is more "advanced" if its production time is longer. In fact, a relatively long time elapses between the moment when one makes the investment and its full productivity. But, once made, the period of time in which the profit is reached, is also long. The instruction level of an active person is thus a high profitability investment, even if it may seem expensive, because as compared to others, this investment determines the highest level efficiency and productivity (Matei, 1996, p.140).

Between the notion of expense and that of cost there are quantitative, as well as qualitative differences. From the quantitative point of view, the expenses for education are higher than the costs, because they comprise both the expenses destined to insuring the conditions for a good functioning of the education, as well as the expenses for education, made for the education action. From the qualitative point of view, the expenses for education are represented by the funds assigned to this action, whereas the cost of education represents the expenses made specifically for education, diminished by the revenues made by the education institutions. In other words, expenses represent
the funds assigned to education, and cost represents the specific consumption of these funds.

There are two types of cost: financial cost - represents the total of sums spent with different purposes for learning, and real cost - includes "the opportunity costs", that is the abandonment of other economical and social projects in favour of education. In the education system there are no variable costs, there are only fixed costs, because schools must deal with the same amount of expenses, irrespective of the number of students who attend them.

The monetary expenses refer to capital expenses (investments), functioning (current) expenses, other expenses specific to the education actions supported by the state, by economical agents and by families (school supplies, different school books). The non-monetary expenses are the lack of benefit during the time in which individuals are in professional training, as well as the "negative" costs of education coming from the discrepancy between the components and the content of education on the one hand, and the requirements of economy, on the other hand.

The investment cost in education comprises: buying land, buildings, purchasing equipment for a long period of time (libraries, teaching materials, audio-visual materials, computers and accessories etc.).

The public sources of financing of the education system are the taxes - a significant source for the state budget, the lease - public credit and self financing. The way in which the financing sources for education are distributed is the following: higher authorities deal with the expenses corresponding to the salaries of the personnel in the education system, whereas local authorities cover the expenses regarding the investments and the material expenses.

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Source: Bert Hosebitz - "Quelques reflexions sur l'economie de l'education dans les pays sous developpes" in "Tiers Monde" nr. 1-2/1960, pp. 68-78

Figure 2. The revenue flows according to the moment they enter active life
In the chart above, Bert Hosebitz has indicated the revenues that are assigned to individuals after graduating from schools and entering active life, at the age of 15, 20 and 25 and presuming that all of them are going to work until the age of 75. The revenue of an individual will increase, if the school degree is higher. Out of these revenues we have to subtract the costs that are indicated in the lower part of the chart, as well as the amount of money that that individual could get in case they entered active life at a younger age.

The efficiency of education must be looked at from the following point of view:

- **pedagogical** - the length of specialisation according to different levels, the system of plans and programs according to years and subjects, the relation course - seminar, the relationship student - professor, the level of training of the teachers, the efficiency of the system of competitions and examinations;
- **psychological** - efficiency may be assessed by studying the issues regarding: the formation of personality, the capacity of adjustment, the capacity of creativity, the psychological preparation for the chosen job, the testing methods etc.;
- **medical** - efficiency is influenced by: the conditions of physical and psychological health, age conditions and limits, the length of the school day and the length of holidays;
- **ergonomic** - the accommodation and study conditions of the course attendants and of the professors, the conditions related to lighting, heat, dimensions of classrooms and schools;
- **the point of view of the technology** for conveying and assimilating the pieces of knowledge: the modern technical audio-visual methods used;
- **socio-political** - the structure according to social classes of the course attendants;
- **sociological** - the relation between cultural and social reproduction, the issue of social mobility and education, the relation education-science-production from an inter-social point of view;
- **economical** - all the points of view mentioned above may also be regarded under the economical influence in what concerns the increase of the educational background and of national evolution;
- **the efficiency of the education system** may also be regarded from the point of view of international comparisons in what concerns the methodology of indicators, of monetary parity and of price index.

The efficiency of the expenses for education is reflected by the relation between "effort" expressed by the volume of expenses aimed at accomplishing the educational act and the "effect" of these expenses manifested in multiple aspects, such as material, social, human, cultural.

4. EDUCATION IN THE USA AND IN THE EU

Below one can notice which the tendencies for the year 2008-2018 in the USA are, according to the different school levels, data that have been provided by the Bureau of Labour Statistics, USA. One can notice that the percentage of people who will hold a master's diploma and diplomas for postuniversitary courses will increase by
18, and the percentage of people who will hold bachelor’s and doctor’s diplomas will increase by 17. The tendency seems to be that of investing in education.

![Diagram](http://www.bls.gov/oco/images/overview_chart_07.gif)

**Figure 3. The perspective 2008-2018 in the USA - the increasing percentages in finding jobs according to one's graduation diploma**

In the strategy of the European Union "Europe 2020", an objective regarding the study level, which approaches the problem of early school abandonment, having in view the decrease in the abandonment rate from the present value of 15% to 10% and the percentage increase of the people between the age of 30 and 34 who hold higher education diplomas from 31% to at least 40% in 2020.

Within the European Union a quarter of all students have low reading abilities, one in seven young people abandons school and formation too early. Approximately 50% reach an average qualification level, but that is not sufficient to satisfy the market needs. Less than one out of three people from the population between the age range of 25 through 34, holds a university degree, as compared to 40% in the USA and over 50% in Japan. In compliance with the Shanghai index, only two European universities are among the first 20 universities in the world classification.
In each of the member states of the European Union one must: invest in the education and formation systems at all levels (from kindergarten to university); improve the results in education in view of reducing early school abandonment; strengthen the opening and the relevance of the education systems by creating national qualification institutions and by better heading the results of learning toward the needs of the labour market.

Approximately 80 million people hold reduced or elementary skills, but it is the instructed people who mainly benefit from the possibilities offered by life-long learning. By 2020, 16 million jobs will require a high level of qualification, whereas the number of jobs which will require lower abilities will be reduced by 12 million. In order for the workers to have a longer active life, it is also necessary that they be offered the chance to acquire and develop new skills during their entire life.

5. CONCLUSIONS

Investments in education - intellectual capital - human capital - are an important chapter worldwide, as the growth and development of our society is built on them. Intellectual capital plays a decisive role when companies try to achieve competitive advantage, being the hidden part of the value of a certain company, as it represents the intangible resources of the company, which cannot be measured with the financial matrices used for measuring the tangible resources.

It is not recommended to adjust the expenses for the education system, as this would have unfavourable effects on medium and long term. By the contrary, the issue that needs special attention is that of amplifying the funds assigned to the education system and especially of giving them a destination as rational as possible.

It is desired an increase in the number of people who will hold a higher education diploma, both in the USA and in the European Union, in other words it is desired the reduction of the number of secondary school and high school graduates.

REFERENCES:


