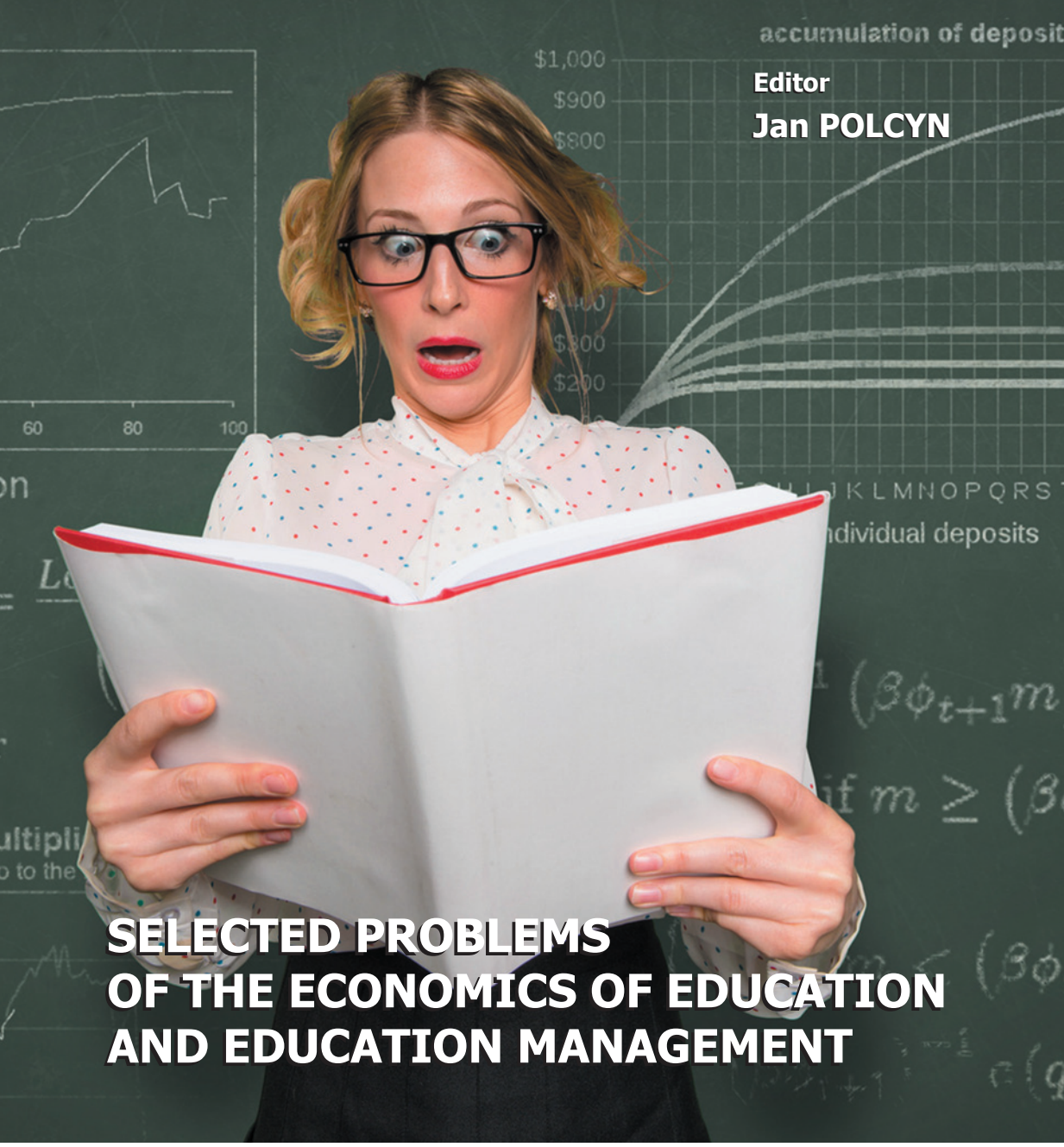


Editor

**Jan POLCYN**

# SELECTED PROBLEMS OF THE ECONOMICS OF EDUCATION AND EDUCATION MANAGEMENT

PWSZ
w Pile

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**Editor**
**JAN POLCYN**

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# CONTENTS

# INTRODUCTION

JAN POLCYN

Nowadays, education is perceived as one of the key factors influencing economic development. In s contemporary state, we can also observe a significant increase in the its redistributive function, that also includes education. These aspects contribute to a particular interest in problems of the economics of education.

It is of particular importance to search for mechanisms providing efficient allocation of significant budget means destined for the education sector. Efficiency-driven approach to education requires specifying the effects of operation of education processes. Educational added value is the factor that is most often indicated in this context. It determines the increase in student's knowledge in comparison with their capabilities; at the same time, the environmental factors influencing the student are treated as constant (not changing dynamically). It should be stressed, however, that educational process comprise not only of knowledge gained during a didactic process, but also of very important actions leading to forming social attitudes which involve raising, manners, altruistic attitudes and patriotism.

This work encompasses chosen issues of the economics of education. It also constitutes the first result of work of an international team dealing with aforementioned problems. The authors of the paper are conscious that education processes are of a very complex nature, at the same time being of an immense importance for contemporary economies. Keeping in mind a complex nature of research of educational processes we present you with our initial work, at the same time urging you to join the discussion over these issues and to have an impact on the team's work.

This paper concentrates only on a narrow scope of issues related to the economics of education, dealing with problems of funding, education role in the economy and chosen organizational matters in education systems. It should be stressed once more, that it is only the initial stage of a study on a very wide issue that we intent to develop in our future papers.

# CHAPTER 1.

# PROBLEMS OF EDUCATION FINANCING

# 1.1.
# COSTS OF EDUCATION

MĂLINA CORDOȘ*, IONELA GAVRILĂ-PAVEN**

## Introduction

The right to education is a fundamental human right. According to the Universal Declaration of Human Rights "(…) everyone has the right to education. Education must be free, at least in terms of elementary and general education. Elementary education must be compulsory. Technical and professional education must be available to all, and higher education must also be equal, accessible to all, on a merit basis. Education must pursue the full development of human personality and strengthen respect for human rights and fundamental freedoms (…)"[1] (Article 27, paragraphs 1 and 2).

Education is a public good and a right of every citizen of any country. This aspect is legislated nationally by constitution, and at international level through a series of treaties assumed by the signatory countries. The UN and UNICEF are international organizations that have made international efforts to secure this fundamental human right as well as to provide a transparent framework that provides real-world information on the level of education allocated to each country, but also in relation to the performance of the educational system in each country. These aspects have also been taken into account at the EU level by the member states that pursue policies implemented at national level to reduce the number of early school leavers and to increase the tertiary education graduation rate (European Commission, 2010).

## Education System in Romania

The education system in Romania is regulated by the Ministry of National Education. The official regulations on Romanian education are contained by the *National Education Law no. 1/2011*.

* "1 Decembrie 1918" University of Alba Iulia, Romania.
** "1 Decembrie 1918" University of Alba Iulia, Romania.

[1] Translation and adaptation http://www.ohchr.org/EN/UDHR/Documents/UDHR_Translations/rum.pdf, (*The Universal Declaration of Human Rights*).

According to Article 16 (1) of the abovementioned law, "compulsory general education is of 11 grades and encompasses primary education, gymnasium education and the first two years of upper secondary education (…)" (*Education Law*, no. 1/2011). Kindergarten is optional between 3 and 6 years. The preparatory class, which became mandatory in 2012, generally starts at the age of 6; schooling is compulsory until the 10th grade. Primary and secondary education is divided into 12 or 13 classes. Higher education is aligned with the European Higher Education system.

Education, in general, and especially formal education, in kindergartens, schools, faculties, is a decisive factor in the preparation of the individual for work and life. In the last 26 years, the Romanian education system has been in a continuous process of reorganization, a process that has been both praised and intensely criticized. The education reform in Romania has gone through several stages and has mainly focused on the restructuring of the education system and the educational programs, trying to meet both the current economic and social needs and the European guidelines.

## Pre-school education[2]

The direct consequence of the significant drop in birth rates, especially after 1989, and the evolution of the economic situation, the number of children enrolled in kindergartens has steadily decreased. In 1990, the total number of kindergartens in Romania was 12,529. In 2007, their number reached only 1,731. At the same time, the number of children enrolled in preschool education has decreased from 750,000 to 650,000, this decrease being due both to the reduction in the number of kindergartens and the decrease in birth rates. Reducing the number of kindergartens in the public system has led to a shortage of the acceptance number, which has led to an explosion in the number of private kindergartens.

All these years, the teaching staff varied around 37,000, so the kindergarten child/teacher ratio fell from 20 in 1990 to 17–18 in 2007.

As regards the gross enrollment rate in pre-school education, it reached 77.8% in 2008, significantly increasing compared to 67.5% in 2001, but below the EU average of 88% in 2008.

In the school year 2009/2010, there were 666.1 thousand children enrolled in kindergartens, and in the 2014/2015 school year the number of children decreased to 559.6 thousand children. In addition to the number

[2] Data processed according to INSS reports www.inss.ro, *Educația în România* (2014, 2015, 2016) and *Proiectarea populației școlare din România, la orizontul anului 2060*, report prepared by INSS, 2016.

of children in kindergartens, the number of kindergartens was reduced from 1697 (in the school year 2009/2010) to 1205 kindergartens (in the school year 2014/2015).

## Primary and secondary education

In the early 1990s, the number of pupils in I-VIII classes was 2.7 million, of which 1.46 million in gymnasium education. In 2008, their number dropped to just 1.75 million, of which 893,000 were in gymnasium.

This 35% decrease in the number of pupils was mainly due to a decrease in birth rates (between 1980 and 1989, 3.7 million children were born, between 1990 and 1999 only 2.5 million, and between 2000 and 2009 the number of newborns fell to 2.2 million).

The number of schools has also dropped dramatically – from 13,511 in 1990 to 4,737 in 2007, and the number of teachers has decreased from 164,000 to 139,000, so the student/teacher ratio has fallen from 16,5 to 12,6.

The gross enrollment rate in primary and secondary education was 98.4% in the school year 2008/2009, about 1% less than in the previous school year.

The number of primary and secondary schools decreased from 4623 units in the 2009/2010 school year to 4050 units in the 2014/2015 school year.

The number of pupils enrolled in primary and lower secondary education decreased from 1,719.7 thousand children in the 2009/2010 school year to 1732.3 thousand pupils in the school year 2014/2015.

The first private schools in primary and secondary education were registered in 2000. In the 2014/2015 school year, in the primary and secondary system there were 80 private schools.

## Vocational education

Vocational education is extremely important for a country's economy, with companies in need of highly professional staff.

Things have evolved in a wrong direction after 1990, so the number of young people in this form of education has fallen from 366,000 in 1990 to 190,000 in 2008, and the number of schools has fallen from 707 to 147.

Instead, the number of teachers has risen from 4,200 to almost 6,000, this increase being surprising, given the fact that the number of students has dropped practically by half.

Educational policy measures that have focused on vocational education in recent years have led to significant changes in the coverage, attendance

and completion of upper secondary education. In the 2009/2010 school year, Arts and Craft Schools (ACS) went into liquidation; starting with this year, there were no enrollments in the first year, the students who continued to go through this educational branch were those of the 2nd and 3rd years.

In the 2014/2015 school year, the three-year vocational education was reintroduced. During the period between the two mentioned school years, the vocational education was regulated in terms of functioning through a series of legislative acts (*Order of the minister no 5730/2010, approving the Methodology for organizing and carrying out the practical training courses for the acquisition Level 2 Professional Qualifications; Order No. 3168/2012 on the Organization and Functioning of 2 Years of Vocational Education and Training; Government Decision No. 1062/2012 on the way in which the State subsidizes the costs for students attending vocational education*).

## High school education

In 1990, the number of high school students was about one million, the number of high schools was 1,198 and the number of teachers was 52,000.

After 20 years (in 2010), the number of students dropped to 780,000, the number of teachers reached 62,000, and the number of high schools increased to 1,426. In other words, the pupil/teacher ratio dropped from 19.2 to 12.6, but at the same time, the quality of the graduates was continuously reduced (the graduation rate of the baccalaureate exam was extremely low).

On the other hand, the gross enrollment rate in high school and vocational education increased from 74.8% in 2001 to 89.3% in 2008.

In the school year 2014/2015, the number of high schools that functioned in Romania was 1576, with 62 less than secondary schools than in the 2009/2010 school year (1638 high schools).

In the period 2009–2015, the number of theoretical high schools increased (from 563 theoretical high schools in the 2009/2010 school year to 580 theoretical high schools in the 2014/2015 school year), in line with the training needs of young people, regarding their entry into the labor market. However, most of the high schools in the country continue to be technological units (51.7% of the total number of high schools in the 2014/2015 school year). The number of high school students dropped from 837.7 thousand pupils in the school year 2009/2010 to 727.1 thousand pupils in the school year 2014/2015.

After 1990, a network of private educational institutions was established. Private high school education has seen major changes in the total number of units, increasing by 23 units in 2009–2014 (from 59 in the 2009/2010 school year to 82 in the 2014/2015 school year).

## Higher education

In the period 2009–2015 there is a decrease in the number of higher education institutions from 108 institutions in the 2009/2010 school year to 101 institutions in the school year 2014/2015. Within the higher education institutions that were registered in the 2014/2015 school year, there were working 583 faculties. Of the 101 academic institutions registered in the school year 2014/2015, 45 university institutions belonged to the private sector.

The staff of the education system consists of teaching staff, auxiliary teaching staff and administrative, maintenance and operational staff. To a large extent, the results of the educational process are generated by the size and professional qualities of the teaching staff.

The national education system had more than 244,600 teaching staff in the academic year 2014/2015, of which 27,800 were working in university education. The largest number of teachers is working in primary and secondary education, 123.1 thousand teaching staff (50.4% of the total number of teaching staff in the school/university year 2014/2015).

The number of teaching staff is decreasing in all levels of education. In primary and secondary education, the number of teachers diminished in the school year 2014/2015 by more than 12 thousand people compared to the 2009/2010 school year. The student/teacher ratio for all levels of education has remained almost constant during the period 2009–2015 (15–16 students per teacher).

## The situation of the educational system in Romania in the last 4 years[3]

In the school/university year 2013/2014, the school population in the national education system was 3650.9 thousand children and students, representing over three quarters of the school-age population (78.2%). The distribution of the school population by educational level is as follows: pre-primary education (15.6%), primary and secondary education (47.7%), high school education (21.3%), vocational education (0.7%), post-secondary (2.8%) and higher education (11.9%).

The school population in the national education system was 3735.6 thousand children, pupils, students, trainees, representing 73.9% of the school-age population in the school/university year 2014/2015. The school

[3] Reference is made to the last 4 school/university years (2013/2014, 2014/2015, 2015/2016, 2016/2017). Data taken and processed after the *Raportul privind starea învățământului preuniversitar în România* elaborated by the Ministry of National Education and Scientific Research, 2016.

population in vocational education registered an increase of 91.7% compared to the previous school year.

The number of graduates in the 2013/2014 school year was 495.1 thousand pupils, students, trainees, decreasing by 5.9% compared to the previous school/university year.

The school population in the national education system was 3642.6 thousand children, pupils, students, trainees, representing 72.2% of the school-age population in the school/university year 2015/2016.

The school population in vocational education registered an increase of 35.2% compared to the previous school/university year. The number of graduates in the school/university year 2014/2015 was 555.7 thousand pupils, students, trainees, increasing by 12.2% compared to the previous school/university year[4].

According to Nationat Institute of Statistics, in the school/university year 2016/2017, the number of pupils and students was 3,597,300, with 45,300 lower than the school/university year 2015/2016.

In the school year 2016/2017, almost half of the school population was found in primary and secondary education (47.1%), and about one-third in high school and pre-school education (18.1% and 15.1%).

Nationat Institute of Statistics data show that vocational education was the only educational level in which the school population grew (by more than one fifth) in the school year 2016/2017 compared to the previous school year. Compared to the previous school year, vocational education is the only level that registered an increase of 15,700 pupils, reaching 84,400 pupils, but still the educational level is the least represented in the total school population (2.3%).

The most pronounced decreases in the number of pupils enrolled in the school/university year 2016/2017 were recorded in secondary, primary and lower secondary education, the number being lower by 22,800 and 16,600 respectively.

In terms of higher education, in the academic year 2016/2017 there were registered 531.600 pupils. As far as the teaching staff is concerned, in the academic year 2016/2017 it numbered 235,800 thousand people. Thus, the average school population/number ratio of teachers was 15 pupils/students per teacher.

## Costs of education in Romania

In Romania, "the public education is free", accordingly to the *Constitution* (Article 32), and *National Education Law* (No. 1/2011) (which, in Article 9,

[4] Data processed after the reports on the National Institute of Statistics, www.inss.ro.

paragraph 3, states that "public education is free of charge". Thus, the costs of providing education are covered by the *state budget* ("the state provides basic funding for all preschools and for all pupils in state, private and confessional general compulsory education. accredited high school, state, private and confessional, as well as the post-secondary state"), (Law No. 1/2011, article 9, paragraph 2).

The financial allocation is made to the preschool/school/highschool pupil/student according to the standard cost established at national level.

The development of educational activities specific to each level of education, however, requires additional amounts, as also found in reports and studies conducted at the international level (UN, 2009). Thus, in order to provide the necessary resources for the educational activities, a series of costs are generally needed by the family (supplies, teaching materials, chalk and sponges, security agents, renovation of classrooms, etc.). These costs were called the *hidden costs of education*[5].

Being a public good, education must be seen in terms of the efforts, the allocated resources and the results. Efforts are reflected in the cost of education. The cost of education can be viewed from different perspectives: *the individual cost of education, the social cost of education, the private, public* or *community cost of education*. Also, regarding the efforts made at the state level to provide education services, these must be analyzed in close connection with the allocation of resources at national level, the adjusting the educational capital to the labour market needs, developing the economic sectors by attracting and capitalizing the human resources formed in the educational system.

The cost of an individual's education is *the level of spending in a country for student/ student education, with the state budget as the source, ie the degree of participation from the state budget to cover part of the pupil/student's total spending*. This cost of education thus encompasses all expenditures made by the state budget in a financial year for the education of a pupil/ student, both by public and private institutions.

The extent to which the education system can accentuate or limit the access to education depends on its financial resources.

In Romania, the necessary financial resources for the educational process, allocated for the functioning of the school units included in the national education system, are mostly provided by public funds (from the state budget and local budgets), but also from other sources belonging to the institutions (school fees, rents, sponsorships, etc.).

[5] This topic is the subject for future research of the authors.

## Financing education in Romania

### *Funding in pre-university education*

The annual budget of an educational establishment comprises *the total income/money funds available to the school for a period of one year, by sources of origin* and, also, *the total expenditure planned for the same period, in accordance with the needs of the unit and the budgetary classification established by the law*[6].

The total need for financial resources to be included in the revenues entered in the annual budget of the educational unit is established/based on the following categories of funds: (1) Basic funding; (2) Complementary funding; (3) Additional funding.

### I. Basic funding

*Basic funding* or *proportionate funding for the number of pupils/preschoolers* takes into account the funds needed to cover the following categories of expenditure:

- ❑ The expenses of didactic, non-teaching and auxiliary personnel related to the smooth running of the educational process.
- ❑ Expenses for the training of the teaching staff.
- ❑ The cost of purchasing school textbooks, free of charge, for students in compulsory pre-university education.
- ❑ Endowments with educational means corresponding to the curriculum.
- ❑ Material and current expenses.
- ❑ Expenditure on providing railway transport facilities for pupils and teachers.

The level of spending on basic funding is predominantly determined by the number of pupils enrolled in a school and the standard cost/pupil rate approved at national level. This is the reason why the basic funding is also called *proportionate funding for the number of students/preschoolers*.

Public, private and confessional pre-university education institutions receive basic funding, within the standard cost per pupil/pre-schooler, from the state budget, from VAT deduction amounts, through the local budgets. The standard cost per pupil/preschooler is determined for each level of education, profile, specialization/domain, depending on the size and type of educational units, the urban/rural environment and geographic temperature coefficients.

Based on the standard cost per pupil/preschooler[7], the following are allocated:

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[6] *Fundamentarea necesarului de finanţare* şi formula de alocare a fondurilor destinate învăţământului preuniversitar, report prepared by CNFIPS (National Council for Pre-university Education Financing).

[7] Standard cost/pupil refers exclusively to basic funding.

1) The financing of salaries, bonuses, allowances and other monetary wages, as determined by law, as well as the related contributions for the educational units. Expenditure on work and work allowances and non-monetary wage costs are not included in this category.
2) Funding of the expenses for the professional training, the expenses for the periodical evaluation of the students, as well as for the goods and services. Expenditure on professional training also includes expenditure on continuing training and assessment of staff in accredited private and accredited pre-university education units. Specifically, the standard cost per pupil in secondary school education (considered as coefficient 1) in 2017 is set at 330 RON/year[8]. This type of cost is determined by applying differentiation coefficients to the value of the base coefficient 1. Differentiation coefficients are determined by the type of school (kindergarten, secondary school, theoretical high school, vocational school and college), the number of enrolled students, temperature zones (six temperature zones identified) and the urban/rural area.

For 2017, accordingly to the regulations specified in the *Decision no. 32/2017 for the modification of G.D. no. 136/2016 regarding the approval of the methodological norms for determining the standard cost per student/preschool and the establishment of the basic financing from the state budget, from the amounts disbursed from T.V.A. through local budgets, based on the standard cost per pupil/preschool, for all preschoolers and pupils in accredited private and confessional general education, as well as for accredited, private and confessional vocational and high school education,* which was addopted on 20 January 2017, the two categories of costs are as follows:

1) *Standard costs per pupil/preschooler for salary, allowances, allowances and other monetary wages, as determined by law, and the related contributions for 2017*, are as follows:

**Tab. 1. Standard costs per pupil/preschooler for salary, allowances, allowances and other monetary wages (2017)**

| No. | Level/profile | Form of education | Cost standards per pupil, by areas and by level - RON - | | Cost standards per pupil, by medium and by level (for minority language education) - RON - | |
|---|---|---|---|---|---|---|
| | | | Urban | Rural | Urban | Rural |
| 1 | Preschool education with normal program | EF[9] | 2480 | 2712 | 2480 | 2712 |

[8] Decision no. 32/2017 for the modification of G.D. no. 136/2016, addopted on 20 January 2017.

[9] Education with frequency.

| No. | Level/profile | Form of education | Cost standards per pupil, by areas and by level - RON - | | Cost standards per pupil, by medium and by level (for minority language education) - RON - | |
|---|---|---|---|---|---|---|
| | | | Urban | Rural | Urban | Rural |
| 2 | Long/weekly pre-school education | EF | 4548 | 4548 | 4548 | 4548 |
| 3 | Primary education | EF | 2854 | 3400 | 3490 | 4036 |
| 4 | Secondary education | EF | 3740 | 4301 | 4275 | 4836 |
| 5 | High school theoretical education | EF | 3740 | 3740 | 4189 | 4189 |
| 6 | Technological and confessional high school education | EF | 3868 | 3868 | 4317 | 4317 |
| 7 | Vocational education (including training sessions | EF | 4096 | 4096 | 4470 | 4470 |

2) *The standard costs per pupil/pre-schooler for the professional training expenses, the expenses for the periodic evaluation of pupils, as well as the expenditures provided for 2017 for the budget item "Goods and services",* are as follows:

**Tab. 2. The standard costs per pupil/pre-schooler for the professional training expenses, the expenses for the periodic evaluation of pupils (2017)**

| Numerical thresholds - RON - | Types of units*) | Final coefficient according to the temperature range[10] for urban/rural areas | | | | | |
|---|---|---|---|---|---|---|---|
| | | Zone 1 | Zone 2 | Zone 3 | Zone 4 | Zone 5 | Zone 6 |
| 1-300 | Kindergarden | 354 | 357 | 365 | 375 | 386 | 396 |
| | Primary school | 339 | 343 | 350 | 360 | 370 | 380 |
| | Highschool/College/ Vocational school/ Dual education | 385 | 389 | 397 | 408 | 420 | 432 |
| 301-800 | Kindergarden | 354 | 357 | 365 | 375 | 386 | 396 |
| | Primary school | 339 | 343 | 350 | 360 | 370 | 380 |

[10] Accordingly to *GD no. 72/2013*.

| Numerical thresholds - RON - | Types of units*) | Final coefficient according to the temperature range[10] for urban/rural areas | | | | | |
|---|---|---|---|---|---|---|---|
| | | Zone 1 | Zone 2 | Zone 3 | Zone 4 | Zone 5 | Zone 6 |
| | Highschool/College/ Vocational school/ Dual education | 385 | 389 | 397 | 408 | 420 | 432 |

* For accredited private and accredited pre-tertiary education establishments with more than one type of education, the basic funding calculation will be made by weighing the number of pupils with the standard cost per pupil / pre-school for each level of education.

Starting with 2016, the Romanian state provides the basic financing of the private and confessional compulsory pre-university education units by the state budget, from the sums deducted from VAT, through the local budgets, according to the provisions of the National Education Law and the legislation regarding the salaries of the paid public personnel.

Private and accredited pre-university education facilities will receive basic funding from the state budget through local budgets at a level similar to that granted for state pre-university education.

Standard costs per pupil allocated to private and accredited pre-university education are similar to those approved for state pre-university education. Similarly to state education, the standard cost per pupil is determined for each level of education, profile, specialization/domain, depending on the size and type of education units, the urban/rural environment and the temperature coefficients in the geographical areas.

## II. Complementary funding

Accordingly to Law no. 1/2011, art. 105, paragraph 1–3, complementary funding is directed towards capital expenditures, social expenditures and other expenses associated with the pre-university education process that are not part of the basic funding of the respective school units.

Complementary funding is provided from the local budgets of the administrative-territorial units to which the pre-university education units belong and from the sums deducted from the value added tax approved annually by the law of the state budget for this purpose.

Thus, the following categories of expenditure enter into this category:

- ❑ Investments, capital repairs, consolidations.
- ❑ Subsidies for internships and canteens.
- ❑ Expenditure for the national periodic assessment of pupils.
- ❑ Expenses with students' scholarships.

- ❑ Expenses for the transport of students, according to the provisions of art. 84 alin. (1).
- ❑ Expenses for the transfer of teaching staff and auxiliary teaching staff, according to the law.
- ❑ Expenditures for periodical medical examination of employees in pre-university education, except those which, according to the law, are performed free of charge.
- ❑ Expenses for school competitions and extracurricular educational activities organized within the educational system.
- ❑ Expenditure on occupational safety and health, for staff employed, pre-school and pupils.
- ❑ Managing emergency situations.
- ❑ Expenditure for participation in European cooperation projects in the field of education and training.
- ❑ Other expenditure in the nature of goods and services, which are not part of the basic funding.

The funds for complementary funding are intended to cover those expenditures whose level is not directly determined by the number of school pupils, but by other factors such as: the state, age and dispersion of the existing educational spaces, the size of the premises and facilities related to social and cultural activities recreation, boarding schools and school canteens, sports parks and sports grounds, clubs, etc.

### III. Additional funding

It takes into account the funds to be allocated in addition to those for basic funding, which are determined by the need for additional financial effort for the educational process, determined by:

- ❑ Schooling of pupils belonging to national minorities;
- ❑ The need to attract and maintain education for children and young people of school age who show school dropout tendencies;
- ❑ The presence in school of pupils with special social problems;
- ❑ Stimulating students with special creative and learning abilities;
- ❑ Schooling pupils with learning disabilities.

The amount of funds for additional funding is determined on the basis of cost indicators per pupil required to be funded additionally and the number of pupils in the educational establishment and in one of the situations outlined above. The level of these indicators is based on case studies and is approved by the Ministry of National Education.

Additional funding is provided on condition that the educational establishments develop for pupils in the situations listed above, special programs approved by the curriculum, endorsed by the board of directors and approved by the authorizing officers.

Additional funding for students in the situations listed above is an addition to the standard cost/pupil of basic funding. In this situation, to alleviate the school budget substantiation calculations, the supplement of the necessary funds for these students is calculated as a percentage applied to the standard cost/student.

## Funding in higher education

The financing methodology for higher education has reached its present form after a long process, going through several stages in its modernization. A central role in the process of gradual and permanent modernization of the methodology was given by the National Council for Financing Higher Education (CNFIS).

In its development to the present form, we can identify three major stages:

- In the first stage (1999, 2000, 2001), the student funding was introduced, according to the form and field of study, which expresses in "mathematical terms" that the process of university education of a student requires different costs, depending on the form and the educational field in which it was enrolled. This first variation had an exclusive quantitative approach and constituted the core of all subsequent developments, both mathematically and conceptually.
- In the second phase (2003–2011) differentiated funding was introduced on the basis of the qualitative component at the institutional level. The quality indicators used for this purpose were aimed both at facilitating the dimensioning of budgetary allocations in direct correlation and with the quality level of the results of the educational process, as well as in stimulating the orientation of the institutional funds in order to increase their quality. Their evolution was not only numerical (from 4 quality indicators in 2002 to 17 in 2011, some of them with a complex structure, including a multitude of sub-indicators), reflecting also the weight on which these indicators had in the funding proposals (up to 30% in 2011).
- The third stage of implementation of the financing methodology (2012–2014) introduced three main elements of novelty:
  a) Funding based on multi-year study grants of the doctoral cycle;
  b) Additional funding to stimulate the excellence of institutions and study programs, based on quality criteria and standards. This has largely addressed institutional quality approaches (tracked up to 2011) to those at the level of study programs.
  c) Institutional Development Fund to support multi-annual institutional projects of universities, addressing the best performing higher education institutions in each category.

After 2015, the financing methodology proposed by CNFIS presents many elements of continuity with those of previous years 2012–2014, the main novelty element being the adoption of a complex, proprietary set of quality indicators for the allocation of the additional funding on a formula basis. If we refer to the proposed objectives, we mention mainly the continuation and strengthening of the actions already initiated (eg real cost financing – by financing on the basis of study grants, support for quality and excellence – by additional funding, support for development – throughh the institutional development fund) and optimization of higher education funding (eg differentiation of funding by university missions, optimization of the total number of grants for each cycle of study and allocation of grants according to the degree of priority of study fields). All funds for basic and additional funding of state universities are considered as own revenues. Revenues for basic and additional funding are used by higher education institutions under the conditions of university autonomy in order to achieve their state policy objectives in the field of education and academic research[11].

Of the amount allocated to the national budget for institutional funding (FI) of universities, 1.5% is allocated to finance special situations, which can not be integrated into the financing formula.

The remaining amount (FI ‘) is distributed as follows:

- ❑ Basic Funding (FB): 72.5%;
- ❑ Additional funding (FS): 26.50%;
- ❑ Institutional Development Fund (FDI): 1.00%;

Basic funding refers to:

1) Staff costs (CP): salaries for teaching staff, non-teaching and didactic auxiliaries, research staff involved in study programs, bonuses, CAS, other legal contributions, domestic and international travel;
2) Material Expenses (CM): maintenance and household expenses, expenditures for materials and provision of functional services, expenditure on research related to study programs, inventory items, current repairs, books and publications, staff training, protocol, protection work, etc.;
3) Expenditures for supporting educational projects and human resource development;
4) Expenditures directed by higher education institutions for the development of study programs.

In order to encourage excellence in higher education institutions, an additional funding fund for universities is set up at a national level of at

[11] *Metodologie de alocare a fondurilor bugetare pentru finanțarea de bază și finanțarea suplimentară, a instituțiilor de învățământ superior de stat din România,* pentru anul 2017.

least 30% of the national allocation to universities as basic funding. The allocation of funds for additional funding is based on the criteria and quality standards proposed by CNFIS and approved by MEN. Rectors of state universities, through the institutional contract concluded with MEN, allocate the funds for additional financing to the highest departments and structures of the university. The amounts awarded to each university for basic funding for students enrolled on the basis of university tuition numbers received by a university in a Bachelor's and Master's degree program are allocated in proportion to the number of their equivalent unitary students. The number of university equivalent university students is determined by weighting the physical number of students with equivalence and cost coefficients. The determination of budgetary allocations for state universities for basic funding and for additional funding is established on the basis of calculation formulas in the "Methodology for the allocation of budgetary funds for basic and supplementary funding, of Romanian higher education institutions, for 2017".

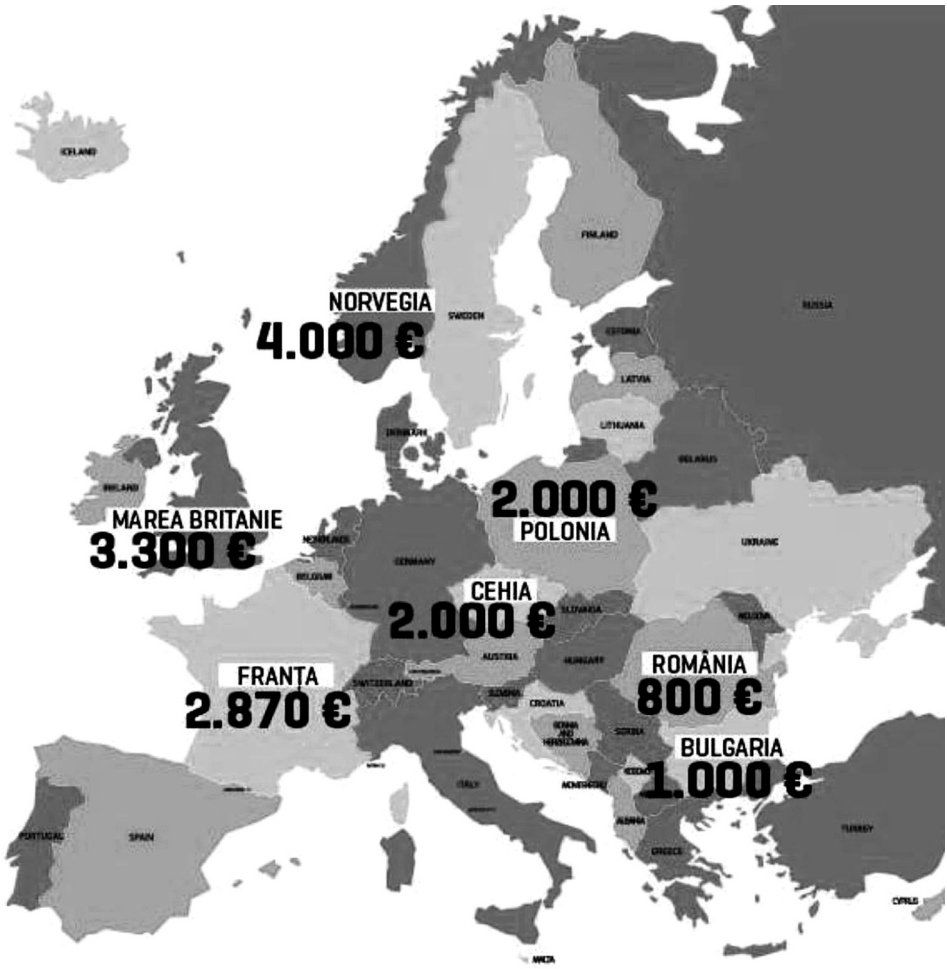
## The costs of education in Europe

The standard cost per student is 2017, in Romania, of 3,740 RON, i.e. just over 824 euros. Thus, 13.9 billion RON per year were allocated to over three million beneficiary pupils. Even if the amount has been increased since 2016, Romania offers the least money to students at the European level. In Europe, Norway is leading. It allocates about 4,000 euros each year for each student. It is followed by Belgium and the UK, with just over 3,300 euros. France and Germany have a standard cost of 2,870 euros. Even if it offers less, 2,000 euros, Poland and the Czech Republic are still much over Romania. Even Bulgaria has a standard cost of about 1,000 euros (according to data from a Eurostat study).

The cost per student means the money the state offers for each pupil. This cost is a basic funding that includes more spending. The highest amount is used to pay teachers' salaries. From the rest of the money, material goods such as chalk, benches, handbooks, chairs and the necessary for pupils' national assessments are purchased. Student associations say that as a result of this money distribution, parents are still forced to pay for certain goods that students should benefit from for free.

In order to get rid of the money demanded to parents by school and classroom funding, an additional cost of this standard will be needed in the future.

**Fig. 1. Standard cost/student allocation map in EUROPA, 2017.**




Source: Cât "costă" un elev în țările europene și în România, https://pedagoteca.ro/23009-2-cat-costa-un-elev-in-tarile-europene-si-in-romania/.

## Challenges for improving education as a public good

A model or structure that provides the maximum efficiency of education services offered at the level of a national economy must be built taking into account the characteristics and specifics of the respective national economy and the nation it forms. One of the recommendations and challenges of national economies is to achieve an efficient distribution of resources and to increase the financial resources allocated to education. At the same time, the assessment of investment in education is difficult to achieve, as long

as the period during which an individual goes through the training stages in the educational system is a long lasting one. In addition to this, labor mobility must be taken into consideration, especially if we also refer to the opportunities offered by the community space (the freedom to study and work where every European citizen wants).

The financial support of the educational system must therefore be considered as a challenge for each state to find the best way of allocating the budgetary resources, but at the same time to identify other ways of financing the education services (contributions, grants, donations, subsidies, special taxes, loans, etc.). The education system must provide access to adequate and quality education for every individual, even if his/ her family can not afford the appropriate financial support. The state must identify ways to provide access to education for each individual, but also the possibility for the state to benefit from the investment made in the individual's education.

The provision of education services by private institutions at various educational levels and in compliance with the legal framework in force must be carried out in such a way that no financial discrimination of individuals is generated. Various instruments used in some national economies, such as tax credit, education checks, or other facilities, can provide recognition and encouragement of educational action provided by society.

# 1.2.
# MANAGERIAL ACCOUNTING IN EDUCATION. ACTIVITY BASED COSTING IN HIGHER EDUCATION

ANNA MARIA MOISELLO*

## Introduction

Universities have been facing landmark changes during the last decade, above all involving the digital revolution, which are changing the way they operate. These changes have provided opportunities that can be fulfilled only through the investment of resources in information and communication technology (Ismail, 2010) to develop, for example, distance-learning programs that would allow universities to manage the growth in enrolment (Tucker, Neely, 2010). On the other hand, universities are under growing financial pressure, being called on to develop and implement analytical accounting models that can contain costs while also being asked to offer high-quality education (McChlery, McKendrick, Rolfe, 2007; Lima, 2011). Universities need effective analytical accounting instruments to:

- improve the allocation of resources among the various organizational units, an increasingly evident need following the autonomy universities enjoy today in managing ministerial funds;
- create greater accountability in the individual university centers in terms of planning for revenues and proceeds;
- create greater outside competition that also supports the dialogue with the educational ministry regarding the financing of didactic activities and research projects.

In continental Europe, cost accounting is often applied purely as an accounting requirement without an awareness of the information support it can provide to the decision-making process if properly inserted in a cost management context (Dragija, Lutilsky, 2012).

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The term cost management underscores a shift from simple cost accounting to forms for controlling costs, both in terms of the final balance figures and during the planning of activities, in order to minimize costs and increase the efficiency in the use of resources (Fici, 2001). In fact, analytical accounting represents the information tool that allows government organs to verify the correct functioning of an organization and to make decisions based on correctly processed information.

The development of a process that moves in this direction nevertheless presents a number of limits due to both the unique features of the university system, as opposed to private companies, and, as in the case of Italy, the absence of explicit laws in this regard. As regards the former, it must be noted above all that universities can be viewed as a multi-business enterprise with three institutional aims: teaching, research and a third mission of favoring the direct application, valorization and use of knowledge to contribute to the social, cultural and economic development of society. These aims are closely linked: for example, the study of a specific topic can spur the examination of related topics, which thus become the object of research than can be transferred to the industrial sector. Therefore, the separation between activities, and as a result the identifying of a national criterion for allocating overall costs for such activities, is complex.

The objective is thus to develop a highly flexible information system. There are a number of methods to measure costs; however, these can be seen to derive from two alternative models: for responsibility centers and for activities. Responsibility center accounting uses the organizational units as the center of cost accumulation (Moisello, 2008). Once the university responsibility centers and those in charge are identified, each center is assigned economic objectives.

Activity-based costing, on the other hand, uses as centers of cost accumulation the activities themselves, understood as basic operations that make up the processes, in order to allocate costs to the products/services based on their complexity; that is, taking into account the type of activity required and the intensity of its use (Cooper, Kaplan 1988, 1992). In line with Porter's (1985) chain of value concept, the output from the economic transformation carried out by the organization is interpreted as being generated by the contribution of a coordinated set of activities that create value added for the final user of the product/service.

## Characteristics of the ABC Model and Its Contribution to University Management

The ABC model has two dimensions: cost and process (Turney, 1992). The former includes all the information regarding resources, activities and the objects of final cost. The latter is linked to the relations among all the

activities, whose succession represents the operational expression of the chain of value and contains information on the work undertaken and on the organization.

The innovative aspect of activity-based costing is twofold: it provides the causal-functional analytical determination of the cost of the product in multi-product or multi-service companies with differentiated output as well as representing an instrument to guide managerial decision-making.

The method for allocating costs under the ABC model starts from the assumption that the production and cessation of output in the market requires activities that, in turn, cause costs to be sustained. Therefore, this method is based on identifying two fundamental relations: costs-activities and activities-products/services.

The costs-activities relation highlights the interdependence of both elements; costs arise from activities because they utilize resources. The basic costs are allocated to the activities through the resource drivers, which are variables directly correlated to the generation of the costs of activities and thus capable of indicating the use of resources in the various activities.

The activities-products/services relation expresses the absorption by the products of the utility provided by the activities. The costs of the activities is allocated to products based on the volume of the activity cost drivers consumed by the products, which are indicators of the generation of the activity costs (Cooper, Kaplan, 1999). The consumption of the activities, which is quantified through the activity cost drivers, can be transactional in nature or proportional to output volume. The costs of the activities common to the various production processes are allocated to the latter after the cost drivers have been identified and quantified.

The quality of the final services and the correlated costs to universities are heavily influenced by how the services are produced; that is, the process used to produce the output. Several types of processes can be identified within the university educational sector: didactics, research and management, to achieve which each university must undertake a variable set of activities.

Porter's (1985) classification allows us to form a chain of value made up of the primary activities, consisting of research, didactics and the transfer of knowledge, and the support activities, consisting of central administrative activities and the various types of general services in support of the primary activities. The use of Porter's chain of value shows the importance of each activity in making universities competitive; in fact, the ability to compete and to stand out can be pursued through monitoring and improving the efficiency and effectiveness of both the primary and support activities.

The greatest difficulty is in determining the critical activities for pursuing institutional aims, so as to appreciate the efficiency and effectiveness of these activities. In this regard, while the components of the direct costs of teaching, research and management can be easily calculated, since all

that is necessary is to aggregate the value of the resources used specifically for these components, it is decidedly more difficult to evaluate the support provided the primary activities by the secondary ones. It is necessary to identify in this regard the proper methods for calculating and allocating the indirect costs of the services carried out at the central level for the activities that benefit from the indirect costs, in order to correctly determine the final costs of output. This need is strongly felt within organizations such as universities, where the weight of support activities in the primary activities is considerable (Pendlebury, Algaber, 1997). This aspect makes it urgent to dealt with the allocation of indirect costs, not only to correctly determine the cost of the final services but also to understand the extent to which the centralized services are used for teaching and research. Therefore, it is important to include the relative costs of the support activities in determining the cost of the teaching and research processes so as to have a more complete view of the conditions of economic efficiency of the primary processes.

Indirect costs strongly impact the economic account of universities, and thus it is necessary to identify appropriate bases for their allocation, which differ from traditional ones linked to production volumes, since the services produced by universities absorb costs not so much based on volume as on complexity.

Within the university system, the calculation of the costs of activities makes it possible to correctly allocate the indirect costs and understand the reasons for them (Tatikonda, Tatikonda, 2001). During this period of great uncertainty from the cut in university funding, for example, in Italy, this tool can be valid for rationalizing the consumption of resources (Broad, Crowther, 2001) and satisfying the need for effective cost information systems that aim at dealing with the financial pressure on European universities (McChlery, McKendrick, Rolfe, 2007). Through this method it is thus possible to obtain the results profile for each activity with respect to the overall amount of resources employed to carry it out, as well as to search for a balance between the amount of resources allocated to the primary activities and those allocated to the support activities.

Support activities have reason to exist only in relation to the utility they confer on the primary activities; for example, regarding activities undertaken by the central administration, far from the market and thus without value to the final user. Such activities are justified only if they provide effective support to the institutional activities carried out by the periphery units. The activities of the central administration require resources, thereby generating high costs (Goddard, Ooi, 1998); thus, without an instrument to understand the reasons for such costs and the effective utility they provide to the primary activities, they could hypothetically be marked for elimination if held to be without value to the final user.

The application of the ABC technique by universities must not be interpreted solely as a tool for knowing the correct costs of the centralized services and their proper allocation to the units that use them or to the services aimed at the final users; instead, they should also be appreciated for contributing to the better overall management of universities. In fact, calculating the costs of activities makes it possible above all to make decisions at both the administrative and academic levels, such as the economic evaluation of the effect from the elimination or introduction of a new degree program or the evaluation of the economic advantages of different research projects. Secondly, it allows universities to more rationally manage the available resources in order to contain costs and increase the value produced for the final users (Chea, 2011; Maiga, Jacobs, 2008; Valderrama, Sanchez, 2006). Finally, this technique gives universities greater awareness of the cost/benefit relationship associated with the academic quality being offered, as measured in terms of user satisfaction.

## Constructing the ABC Model for Universities

The ABC model comprises several phases. In the first place, it is necessary to identify the activities of the staff and other service personnel. There is no rigorous method for identifying and analyzing these activities. The identification of the activities derives from identifying the individual responsibility centers using instruments such as questionnaires, interviews and activity diagrams, which reveal the activities of the various organizational units and the operations that can be identified as activities (Beaujon, Singhal, 1990; Brimson, 1991). In general, this first phase directly involves the personnel through both interviews of the staff in question as well as moments of internal analysis regarding the management involved. Analyzing the activities means breaking up a complex organizational unit into its elementary processes, which are then more easily controllable and manageable than the unitary system would be. When we speak of process we are referring to a sequence of correlated activities aimed at achieving a specific final result. In fact, there is no significance in identifying the individual activities if subsequently the cause-effect relationships among them are not outlined. To understand the dynamic dimension of the university organization it is thus necessary to understand the relationships among the activities undertaken to achieve the final output. In this way we can understand where value for the final user is actually created. Before measuring the costs and performance of the processes it is thus necessary to create a map of the activities and their relative interdependencies, in order to understand how these function in terms of the consumption of resources (Lima, 2011).

This mapping of activities already would allow management to have available useful information to identify those activities which could be eliminated; that is, those which do not bring any added value either directly to the final user or indirectly to the other activities in the value chain (McNair *et al.*, 2001).

Secondly, it is necessary to identify the factors that produce the costs of the activities in question so as to be in a position to correctly transfer these to the final service; the cost of the latter is thus determined by allocating the costs of the activities that are identified based on the driver that most correctly expresses the causal link between the indirect activities and the final output (Kaplan, Atkinson, 1998; Cooper, Kaplan, 1998).

The mapping of the activities already provides management with useful information for identifying those activities which could be eliminated; that is, those that do not provide any added value either directly to the final user or indirectly to the other activities in the chain of value.

Once the activities that make up the university's organizational units are identified, the basic costs are allocated to these based on the resource drivers, which are allocation coefficients that identify the consumption of resources by each activity. The resource drivers are identified through fixed estimates or by using parameters that express the contribution the resources make to the activities. The relative costs of the consumed factors are allocated to the activities after being grouped into aggregation centers called Activity Cost Pools, which are uniform in terms of consumption and capable of being assigned based on the same resource driver.

Once we know the total cost of each responsibility center – through the general accounting data – and the list of activities carried out by the center, it is possible to calculate the cost to allocate to the individual activities through the use of specific parameters for each cost item, which expresses the amount of resources consumed by the activity. In some cases the allocation of the activity cost can be direct, for example, as in the case of training courses attributable to a particular activity, such as training courses for economic accounting entirely allocated to the general accounting activity. Nevertheless, apart from some rare cases, we find many indirect charges in universities linked to general administration, departments, libraries, laboratories, etc.; thus, it is necessary to use matrices that show the coefficients of use of resources (Fici, 2001). Let us consider two areas as an example: central administrative management and peripheral units such as scientific centers and departments. Regarding the latter, almost all costs are tied to personnel, and for this reason the most correct coefficient of use of the resources is the time each worker dedicates to carrying out the activities.

Nevertheless, the rigorous use of this driver would create considerable difficulties since the precise measure of time with regard to personnel would be problematic and excessively time-consuming if each person in charge

were entrusted with estimating the time employed by his collaborators in carrying out their various activities. To overcome this problem we could use a simplification that, on the one hand, could reduce the accuracy of the method but on the other hold the same personnel more accountable. However, the personnel must be adequately informed about the aim of the information gathering, to make sure that suspicion does not lead to distortive behavior (Reich, Abraham, 2006). In particular, the statements of the workers must be relied on through specific software that sets up the various activities to which each worker will associate the time used in carrying it out. One possibility could be a daily recording of times by the personnel and a monthly check by the person in charge. In this way each worker will have a greater awareness as to the valorization of the activities carried out, in order to avoid inspections. The fact that the labor factor has a higher incidence with respect to university costs should not lead to the error of using unit times for all cost items whatsoever. For example, let us consider the case of scientific departments and centers. In such centers the weight of costs associated with scientific and technological equipment is considerable and greater than that associated with personnel costs. Therefore, from this perspective the resource driver used to allocate such costs cannot coincide with the unit times of the personnel, but will instead be represented by the specific use made of such equipment, independently of the amount of absorption of the work of the personnel.

Once the activities have been identified and their basic costs allocated, the drivers must be identified which allow the organization to:

- ❑ quantify the volume of activity;
- ❑ calculate its unit cost;
- ❑ quantify the number of services the activities provide for the various final products.

The cost drivers are parameters that can express the relation: utility provided by the activity and utility absorbed by production, in order to concentrate on the real causes of costs and thus avoid distortions deriving from arbitrary allocations. The choice of cost drivers to use must involve both their type and number. As regards the former, the decision results from a subjective process that must be carried out by following criteria of objectivity, simplicity, measurability and data availability. The choices once again include the volume of production (consumption of material, machine hours, etc.); however, to take account of the complexity of the process producing the final services, we must also consider new, ad hoc indicators that allow for the control and measurement of the indirect activities: that is, those that have no direct relation with the volume of final output.

In particular, the type of cost driver to choose must respect the conditions of efficiency and effectiveness, in order to both contain the costs for the procedure and correctly determine costs. In this regard, the choice must

evaluate three important aspects: the measurement costs, the behavioral effects this choice can have on those working within the organization, and the degree of correlation between the effective consumption of the activity and the measured consumption of the cost driver (Cooper, 1989). As for the latter aspect, the choice of the number of cost drivers is often quite difficult since there often exists a trade-off between the effectiveness of the system and its complexity.

In order to achieve more reliability, often a rather high number of activities is identified, which entails a greater effort in terms of the gathering and analysis of information as well as oversight, all of which leads to an increase in the costs of managing the system.

The increase in the number of activities inevitably leads to an increase in the number of drivers associated with these, with a consequent increase in the costs of identifying the drivers and above all of obtaining the information needed to calculate the share of the activity cost to allocate to each final product. Therefore, we can conclude that managing a higher number of cost drivers surely guarantees greater accuracy in the calculation of the cost of the final product/service; however, it also requires more analysis, data and data evaluation, which lead to greater costs.

## The Cost of Universities Support Activities

The phases presented so far represent the logical schema of the method in question; nevertheless, universities that have only recently developed forms of cost analysis or are in the process of doing so will find it difficult to engineer a radical change in their internal management in order to apply the ABC method. In this regard, the model could initially be limited to a "test" area in order to compare, in relation to a specific center, the differences that arise from applying the method for activities as opposed to the existing traditional method. Only subsequently, when those involved are more aware of the benefits of applying this model, can the method be extended to other areas.

Since the main problem in determining costs for universities is calculating costs at the central level in support of teaching and research, one possible experiment with the ABC technique could be a center that provides support services, for example, the central administration, main library, etc. (Ellis-Newman 2003). In this way, the local level can know about the cost structures of the various faculties in order to take steps to rationalize these entities, with a resulting reduction in costs.

The need has emerged for universities to understand the causal relationship between the costs sustained at the central level and the sources that go into their calculation, which can be identified in the teaching and research

processes in the faculties, departments or research centers, as well as in single courses or projects.

Generally speaking, the activities that are instrumental to the primary activities have always had a secondary position with regard to the university's institutional activities, as they are considered to be of lesser importance. However, there are significant possibilities of increasing the efficiency in this area since the support activities, the administrative ones in particular, represent an important cost item for universities. Since in the past marginal importance was given to these items, it is surely simpler to identify opportunities for improvement regarding the support activities.

In this context, in order to correctly measure the indirect costs for such activities, methods must be adopted that do not call for volume-type bases of allocation but instead allow allocation drivers to be used that express the relation: utility provided by the activities and utility absorbed by the output, in order to focus on the real causes of the costs and thereby avoid distortions from arbitrary allocations.

The support activities do not directly contribute to the production of the final service, and thus it is necessary above all to determine the cost associated with the services produced by the center in question (through the use of activity drivers serving as parameters to measure the consumption of resources), and then allocate the costs of the services to the units that provide the final services to the outside user. The problem during this phase regards the choice of parameter to use to allocate the total costs of each basic activity to those services provided to other activities (internal users). In cases where an activity is carried out solely for a specific service, the allocation of cost is direct and there is no need for allocation parameters (for example, the management of on-line loans; this activity would be directly allocated to the "service on-line" final service, similar to what would occur for inter-library loans, which would be directly associated with the "inter-library service"). However, in other cases where an activity is linked to more than one service, "activity drivers" must be identified; that is, parameters that measure the consumption of the activities. Through the use of such drivers it is thus possible to allocate the costs of the various basic activities identified in the service center that are provided in support of the primary activities. Using again the example of the main university library, we can assume there are staff specifically charged with managing the books dealing with specific scientific areas; we can find, for example, personnel for the literary, economic and engineering sectors, and so on. The costs related to the activities of this staff cannot be directly allocated to a single final service, since the activities serve several objectives. Therefore, the most correct activity driver to use might be the unit time employed for each person for the provision of several services, such as managing the books, on-line services, and information and consulting services.

Since we are dealing here with support services, the calculation of the costs of the final services of the center does not represent the last phase in the ABC method, since these costs must subsequently be transferred to the units that produce the primary services (for example, the departments).

For the correct determination of costs it is thus necessary to identify the cost drivers, which are the parameters deemed capable of representing the causal relationships between the total cost and the main factors that go into its determination.

This phase must also involve the staff of the center in order to have expert opinions on the determinants of the costs of the services in question; in fact, in this way the drivers can be chosen based on technical factors that are shared by the service staff.

For example, the "number of new books" driver can be associated with the book management service and the "number of full-time students" driver could be associated with the information and consulting service.

Once the drivers have been identified, the ratio is calculated between the total cost of the central services and the value of the correlated cost drivers, which produces the cost driver rate; that is, a coefficient to use to allocate the total costs of the services to the user units in terms of the effective use. The number of cost driver rates so identified is equal to the types of services which are provided internally. These rates determine the total costs of the central services which are to be allocated to the users.

Thus, applying the ABC method follows a more rigorous method for attributing indirect costs, since often it is the complexity of the service provided rather than the quantity of services required that determines cost levels, which, in order to be transferred in an economically correct manner, require the use of appropriate drivers.

Applying this method to a test area can be a good starting point for understanding the differences between the cost values thus determined and those determined using the traditional methods. The objective here is to subsequently extend the application to other areas.

## The Process Approach in Universities. The Italian Case: the "Good Practices" Project

There are still very few examples of the use of the ABC method in universities, and those that exist are not very well-developed. We find more instances in England, which provides the greatest number of cases; in other countries, such as Italy, the activity based costing implementation is still rather underdeveloped. The most important obstacles to the spread of this method among universities are: a resistance to change, the non-reliability of

data in the current account systems, and the lack of support from management (Dragija, Lutilsky, 2012).

In Italy, the move toward an internal process approach has been spurred by a project that involves quite a large number of universities; the objective of the project is to create an awareness of the following:

- ❑ a focus on the method involving activities and processes, in order to deal with the high uncertainty regarding state funding;
- ❑ the need to pay attention to support activities, which have always occupied a secondary role compared to institutional activities;
- ❑ the need to compare the situation across universities in order to identify virtuous behavior that can be replicated in other universities.

The idea of undertaking this project is based on the new need for internal control systems at universities, which are increasingly less adequate to meet the changing circumstances in which they must operate. In particular, the succession of financial laws directed to the development of Universities autonomy has created the need to focus more on those processes up to now ignored in order to focus more on the primary processes: the support processes, above all the centralized administrative activities.

The personnel required for administrative activities is an important cost item for universities. Since in the past this item has received scarce attention, it is useful to identify opportunities for improvement in this area. Moreover, it should be noted that administrative activities can influence considerably the quality of university services, for example, logistical activities or services for students, and for this reason they are highly representative of support activities.

In this context, the project was developed with the aim of highlighting the importance of accurately measuring the performance of such activities in order to identify effective and efficient solutions and areas of improvement.

Given the need to focus more on support activities, the Comitato Nazionale per la Valutazione del Sistema Universitario (National Committee for the Evaulation of the University System) has proposed an initial assessment of the administrative management of universities in 2000. To this end, a working group at the Comitato Nazionale per la Valutazione del Sistema Universitario (CNVSU) (Department of Management Engineering at the Milan Polytechnic), coordinated by Prof. Giovanni Azzone, was entrusted with the "good practices" research project, whose aim is to analyze the administrative activities of universities and identify the so-called "good practices".

The project was initiated to compare the administrative activities at ten universities in January 2000, with the aim of creating a set of information useful for defining a method of comparing administrative performance from an activities and process perspective. At present, 27 universities are partici-

pating in the project. The CSNVU, through the development and detailed survey of administrative activities, has three specific objectives in mind:

- ❑ to develop a shared model for evaluating university administrative activities;
- ❑ to use this model to undertake a benchmarking process for universities that are taking part in the experiment;
- ❑ to favor the spread throughout the university system of managerial tools and innovative organizational solutions with regard to administrative activities.

The project in question is based on a sector benchmarking approach; that is, the systematic comparison of performances for a group of universities chosen as a sample, for the purpose of understanding which represent good practices and produce the most effective and efficient processes. Benchmarking can be directed at performances or processes. In developing the project it was decided to opt for a combined approach, since the first phase carried out a benchmarking of performances in terms of quantitative indicators, with a qualitative comparison of processes undertaken subsequently.

For each activity the university with the best quantitative performance was identified, after which the process was examined in depth. The case study was then presented to all the universities for a discussion of its strong and weak points, in order to observe the coherence between the quantitative results and the qualitative characteristics.

The decision to use a sectorial benchmarking was due to the highly specific nature of the university sector and the peculiarities of its performance measurement (see: Cosenz, 2011), unlike the situation in other types of organization.

The choice of sample considered geography, size and specialization (specialized universities such as the polytechnics alongside non-general ones) in order to mirror as closely as possible the existing context in Italy.

Ten universities participated in the first edition of the project, six of which were identified by the CNVSU (the Polytechnic of Bari, the Polytechnic of Milan, the University of Bologna, the University of Calabria, the University of Pavia and the University of Siena), two by the project group (the Polytechnic of Turin and the Polytechnic of Trento), while two universities were chosen by their own request (the University of Genoa and the University of Trieste).

The areas of comparison to be focused on to carry out the benchmarking process were identified following a precise classification of the administrative activities carried out by each university. The activity categories of universities can be classified as follows:

- ❑ activities where the quantitative dimension is prevalent and for which the product is thus clearly identifiable (for example, salary payments). It is fundamental to evaluate the efficiency of such activities, through

the ratio between the cost of the resources used and the volume of activity;

- ❑ activities where the qualitative dimension prevails, in which the way the various activities are carried out is critical (for example, planning activities for the information system). For such activities it is important to measure effectiveness as analyzed in terms of response time and level of service provided;
- ❑ repetitive activities, for example, the registration of exam marks; in this case it is not fundamental to have information on the single product but average values that indicate the overall cost of the activity.

Being experimental in nature, the first edition of the project emphasized those activities that can be expressed in quantitative terms and thus aim at efficiency as measured by the ratio between the cost of the resources employed and the volume of activity.

This choice was preferred since quantitative information was either already available or in any event easily obtainable in the universities. Three macro-activities, that is, survey areas, were identified:

- ❑ accountability, represented by standardized activities aiming at efficiency;
- ❑ student administration office, for which some indicators of effectiveness can be experimented with;
- ❑ EU contracts, which is an area of growing importance and to which universities attach different degrees of importance.

For each macro-activity, sub-activities were subsequently identified to be used to compare the universities. (For example, eight sub-activities were identified for the "accounting" macro-activity, among which "management of expenses", which in turn was divided into basic activities such as: management of expenditure items, expense authorization, use of administrative funds, payments, scholarships, rent, salaries, allowances, etc., to which two possible indicators were associated: total outlays and number of mandates).

Once the macro-activities were categorized and the parameter for measuring their volume identified for each sub-activity, the cost of each activity in question was determined. To this end, a cost model was created with a related plan of accounts that is useful for classifying the various costs according to type.

The choice of items for the plan of accounts was based on the following criteria:

- ❑ costs incurred in relation to overall administrative costs. In this regard, a reclassification was done for the type of account for several of the participating universities. The data obtained was then arranged by decreasing amount of costs to show the most important items;
- ❑ the controllability of costs by those in charge of administrative activities. In this case, the direct costs were identified; that is, those

costs uniquely associated with the unit (such as costs for personnel, consumer goods, office equipment, furniture, decor, hardware, licenses), as well as the indirect costs to carry out the tasks of the center that are incurred by other units (such as energy, cleaning and surveillance costs).

Cost is defined as the value of resources employed; to give a value to these resources, the effective acquisition prices or the standard prices can be used.

Obviously effective price is the best option in terms of accuracy, since it leads to a correct and specific value that refers to the period of reference, while the standard price system uses average price to calculate cost.

It was decided for this project that in the event the use of effective cost was too complicated standard costs would be used, without, however, compromising the reliability of the system, since personnel costs, which is the most important item, were valued using effective cost.

Once the costs in the "accounting records" had been identified they were allocated to the various activities based on a calculation by activity (ABC). The project carried out various analyses:

- ❑ an analysis of the cost structure to identify the incidence of personnel costs with respect to consulting costs, and thus to evaluate the outsourcing policies of the various universities;
- ❑ an analysis of the relevance of the various activities, to verify the coherence between the resources allocated to the various sub-activities and the university's strategic priorities;
- ❑ the measurement of cost by unit of product, and thus of the level of relative efficiency, which is measured through a comparison of the costs per unit of product of the universities in question for the same sub-activity;
- ❑ an analysis of the benchmark costs for the sub-activities, of the shift in costs with respect to the benchmark, and the evaluation of the savings for each university from a realignment of the benchmark;
- ❑ an analysis of the indicators of effectiveness and of the effectiveness/efficiency relation, to evaluate if a university achieves efficiency to the detriment of effectiveness or if it is above or below the average for both types of indicators.

Once the best-performing universities were identified for the various areas, the processes were analyzed to understand the strong points and to compare the universities, to indicate the best actions to undertake.

Without describing the individual experiences, the causes that lead to the best practices were determined to be the following (Lucianelli, 2006):

- ❑ guidelines defined by the university, in particular the importance given by the university to administrative functions, as well as decentralization policies carried out and the outsourcing decisions;

- ❑ a process-based vision, in particular regarding the internal organization and the creation of ties and interactions among the activities in order to develop more coordination;
- ❑ the human and technological resources available; in terms of the former, the decisions regarding outsourcing or the professional staff to employ. The extent to which the activities are computerized depends on the analysis of the latter;
- ❑ the internal management systems, especially the possibility of having available or identifying procedural simplifications and implementing plans for their promotion.

The project was developed over the course of several editions, during which the categories of analysis were broadened; along with measures to increase the efficiency of administrative activities were measures of effectiveness that encompassed teachers, researchers and students.

In the 2007 edition, the overall cost for each sub-activity was introduced for each university. Nevertheless, the most important performance indicator for efficiency is the cost per unit of product. By undertaking a comparative analysis based on this indicator, each university can measure its relative level of efficiency, and as a result identify opportunities for improvement in the particular area of interest.

Beginning in 2011, the project expanded its analysis to the entire university; that is, to both the central administration and the centers and departments, even if not all participating universities applied this extension in full. The analysis was extended to all support and administrative services, not only to a set of these, as in the previous editions, thereby providing an analysis of aggregate efficiency at the service level rather that one divided into the basic individual activities. The efficiency analysis used the activity-based method, noting the times dedicated to each personnel resource to carry out the ordinary activity identified for the twenty administrative services that were mapped out. Moreover, an audit was done by the research group to analyze how the data was collected, thereby highlighting the non-conforming data to ensure the comparability of data across universities. In the 2007 edition, effectiveness was evaluated using customer satisfaction measures, while in the previous editions the average between the effectiveness provided and that perceived was used. In 2011, the evaluation once again concerned objective effectiveness, understood as the adequacy of the output from each service with respect to organizational needs and expectations as well as the effectiveness perceived by the final users; objective effectiveness was measured using a customer satisfaction survey of teaching staff, administrative technical personnel and students.

At present, the number of universities participating in the project has increased to 27, and the project has become more highly structured to also include internationalization activities and those related to sustainability;

however, it is still limited to support activities, and activity-based efficiency measures combined with measures of effectiveness are lacking, which would allow for primary activities to be compared across universities.

## From ABC to ABM

Universities are held back in applying the ABC by the difficulties the approach entails and the greater implementation and management costs of this methodology.

Nevertheless, implementing the ABC system could bring numerous advantages in terms of the problems universities have to deal with, particularly given the greater autonomy they currently enjoy and the open market that exists in the university sector.

The structuring of an accounting system based on the ABC method makes sense only if, once implemented, it can satisfy the aims for which it was instituted.

Therefore, a clear and precise definition of its aims is the main instrument for overcoming eventual implementation problems (Moisello, 2012). Based on the objectives set at the central level, it is possible to identify those activities that deserve consideration due to their relevance to the defined aims and those that can be ignored, being less relevant to the aims of the system. Moreover, it is possible to accurately choose the cost configuration with respect to the objectives which best supports the decision-making process, thereby making the implementation process more rational and less complex. The implementation of an ABC system in a university leads to greater potential for the information system in terms of support for the university's internal analysis, planning and managerial control.

Until now the ABC method has been dealt with in terms of the cost accounting method, which, unlike traditional accounting systems, is capable of providing a vast range of information on the composition and type of costs, in order to determine possible measures regarding the carrying out of the various activities. Therefore, in order to represent an effective managerial instrument, the ABC must be part of a broader context of organizational management, defined as Activity Based Management (Ismail, 2010).

ABM can be defined as a complex method for analyzing and controlling activities, which aims at improving the effectiveness and efficiency of the processes by modifying how they are carried out. ABC and ABM are thus closely correlated, since the latter, being an accounting system, gathers information, while the latter takes this information and processes and integrates it with extra-accounting data to ensure the continual improvement of the processes, with the aim of increasing the perceived value to the final user (Căpuşneanu, Martinescu, 2010).

The emphasis on value ensures the evaluation for each activity focuses on whether or not the activity in question increases the value to the final user. If activities do not contribute to creating value for the user – directly or indirectly, by conferring value to other activities – management must start to ask if it is worth continuing to use resources for those activities or to eliminate them, in order to use the available resources more rationally. Therefore, the first strategic objective for management is to satisfy the final user in terms of the creation of value. This satisfaction cannot be measured solely in monetary terms, however; the cost information provided by the ABC method must be integrated with evaluations on how the activities are carried out: that is, by calculating the performance linked to the organizational process. In fact, ABC permits the organization to identify the activities, analyze them, and calculate the resources used in carrying them out. The performance indicators allow a comparison to be made between the content of the activities and the relative consumption of resources they entail, on the one hand, and the results on the other (Turney, 2010).

The performance indicators used by the ABM system can be divided into four categories: indicators of cost, consumption, efficiency and effectiveness.

To determine the cost indicators, it is necessary to identify the resources used in carrying out the activities to which a monetary value can more or less be assigned (for example, the number of personnel hours used, the personnel costs, etc.). These indicators allow the organization to understand the causes for the costs in question. The consumption indicators are the resource drivers; that is, the indicators that show the causal link between the carrying out of the activity and the consumption of resources.

Efficiency is understood as the capacity to achieve the planned results through an optimal combination of the available resources; it can be measured by the ratio between the inputs employed and the output. For such indicators, the distinction between teaching and research activities is necessary.

The evaluation of the level of efficiency for teaching activities can be expressed by the ratio between didactic results and resources employed.

The results obtained are determined in terms of the weighted average of the parameters; for example, the number of courses started, teaching hours and the number of enrolled students.

These parameters are not always easy to determine, since data collection to measure the results obtained are rarely carried out in the production centers.

On the contrary, it is easier to collect data for the resources used, which can be identified, for example, by the number of personnel involved to carry out an activity, the quantity of financial resources used, etc (Johnes, 2006).

On the other hand, evaluating the efficiency of research is more complex, since this requires distinguishing qualitative evaluations, in terms of scientific merit, from quantitative ones, which concern the number of articles published, the number of citations, etc. (Kao, Hung, 2008).

Normally, to evaluate the efficiency of research activities the qualitative aspect of a subjective evaluation are ignored in order to focus more on objective and reliable measurements. In this regard, it is necessary to distinguish the various departments and research centers that deal with this task, since they are autonomous with regard to the choice of research areas. It is thus necessary to assign a different weight to the various research typologies based on whether or not they enrich the knowledge of those undertaking the research or of the collectivity.

That said, it is nevertheless possible to identify measurement parameters for the efficiency achieved by a department: for example, the number of articles or journals that are published which concern the research undertaken, or the number of conventions organized to deal with the topic of the research.

Effectiveness indicates the extent to which the objectives have been achieved, independently of the efficiency level. For proper management control, efficiency and effectiveness should co-exist, since the former alone is not sufficient; what is necessary is a preliminary phase for the definition of the objectives, which must then be compared with the results in order to decide on any possible changes.

Evaluating the effectiveness of teaching activities is decidedly more complex than evaluating efficiency, since it is necessary to evaluate the effective degree of satisfaction for the final user, for whom it is not easy to apply evaluation parameters (Lueg, 2014).

The basic problem is the vast range of those who benefit from teaching activities (students, teachers, the university itself, society, the working world, etc.), which means that different views exist as to the quality of such activities, thereby making it difficult to identify parameters which are objectively correct. We can thus note different approaches to evaluating effectiveness, which can focus either on the parameters, such as how services are provided, the quantity of human resources used in teaching, the time available for a given didactic program, etc. (Fici, 2001), or approaches which, on the contrary, focus on the quality of the teaching activity perceived by the students and indicated through questionnaires (Palumbo, 2010).

As far as evaluating the effectiveness of the research activity is concerned, the same problems apply as in the case of efficiency.

The effectiveness of a department can be measured in terms of the prestige of the journals containing its research as well as the impact of this research on other research. The measurement parameters are the number of citations, the chronological distribution of the citations, etc.

The considerations made to this point regarding the parameters of efficiency and effectiveness apply, however, to the activities treated so far which, within the chain of value, are defined as primary; that is, those that directly impact the final user.

Nevertheless, there are centers in universities that do not directly provide services to the final user but serve as a support to other internal subjects in the chain of value. Therefore, the qualitative standards of the activities of such centers of responsibility (personnel management, administrative activities, financial management, etc.) must be in line with the functional needs of the primary activities so as to guarantee a certain level of performance.

## Final Considerations

After having considered the aims behind the introduction of these management tools in universities, it is appropriate to consider how such aims can be achieved.

Above all, we must remember that the use of the ABC method provides a dynamic view of the university which would not be possible with traditional accounting tools. In fact, activity-based cost analysis allows us to view the structure through processes, which permit the causes of costs to be monitored and corrective measures undertaken (Zimmerman, Yahya-Zadeh, 2011).

The primary objective for universities that adopt ABC is undoubtedly the need to reduce production costs, to achieve which they must act on the processes at the central management level and in the peripheral administrative units. In addition, with the continual evolution of the environment in which they must operate, universities have become aware of the need to couple cost reduction to the quality of their services, in order to better satisfy the expectations of the final users.

Quality is even more important and topical given that, along with the "classical" final users, the students, there are users that indirectly benefit and receive utility from university services.

The spread of a strategic orientation in universities is necessary due to the presence of users such as the labor market and, above all, firms and organizations that, given their expertise and focus on preparing individuals to enter the working world, are able to develop strong competition among universities and allow some to stand out from the others.

Therefore, at the operational level universities need to redesign their processes to make them more streamlined, less costly and capable of endowing the services with good quality, since a quality service can only result from an efficient and effective production process.

Redesigning the internal processes in universities presents many obstacles, owing mainly to the traditional and routine-oriented mentality of the personnel, who are averse to abandoning long-standing behavioral practices. These obstacles need to be gradually overcome by avoiding drastic changes and by following a rational and formalized course of action.

Therefore, the only course of action available to universities are moderate measures that aim at continual improvement with respect to the existing situation.

To begin with, the top management of the university must cultivate an organizational view encompassing a long-term time horizon; this view must be shared by all of the structure's employees. Subsequently, there must be an analysis of the processes to act on and a strategy for the gradual correction of the processes that fall within the particular organizational view.

In short, this type of redesigning would compare the existing procedures with the optimal arrangement of the process that has been mapped out, in order to highlight the differences and decide on the corrective measures to undertake.

One of the greatest problems within universities, as affirmed on several occasions above, is the absence of relationships and interdependencies among the various organizational units. The absence of a group vision creates inefficiencies and waste, since the information transfer process among the various components is insufficient. All of this can be overcome with a process-oriented perspective that develops a sense of belonging and an awareness of the contribution each unit can make to the entire structure. The shift from a typical functions-oriented view to a process-oriented one is certainly not easy or immediate, especially within universities, where the boundaries between the various functions are well defined and there is little interest in abandoning long-standing management practices.

# CHAPTER 2.
# EDUCATION FOR THE ECONOMY

# 2.1.
# EDUCATION AND ECONOMIC DEVELOPMENT. STUDY CASE: ENTREPRENEURIAL EDUCATION IN CENTER REGION, ROMANIA

**MĂLINA CORDOȘ*, IONELA GAVRILĂ-PAVEN****

## Introduction

The ability of an economy to grow and compete successfully with other national economies depends on the existence of an optimal number of firms, which can only be achieved by encouraging and stimulating the creation of more start-ups and by an efficient management of the business' dynamic. Research has shown that there is a positive correlation between entrepreneurship and economic growth. An economic growth based on innovation and excellence needs a high number of start-ups, which will create more and better jobs. Countries with high rates of entrepreneurship have low rates of unemployment. Moreover, social systems are under increasing pressure, due to the decrease in the number of people employed. The European Union, in order to recover, needs a sustained economic growth, several new firms, more entrepreneurs to contribute to the development of innovation and more developing small and medium-sized enterprises.

Entrepreneurship can also help to increase social cohesion for those less developed regions by employing unemployed or disadvantaged people. Moreover, it can contribute to the women's entrepreneurial potential development, which is an important, but insufficiently exploited resource. Increasing dynamism and internationalization of the Romanian entrepreneurial base is the way in which the economy can develop to meet the requirements and opportunities of the single market. Romania needs to invest in the development of small and medium-sized enterprises and in promoting entrepreneurial culture in order to create the necessary framework for the emergence of new businesses.

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Romania's economic growth must be based on economic activities with increased added value, and it is necessary to move from the economic model based on the export of raw or processed primary raw materials to economic activities that ensure a superior degree of processing, capable of generating added value. In order to develop this segment, entrepreneurial skills are absolutely necessary.

Romania needs to develop a new generation of entrepreneurs with characteristic abilities such as responsibility, spontaneity, adaptability, clairvoyance, initiative and managerial spirit, which allows them to identify and implement appropriate strategies for penetration and retention of the market. These personal skills must be cultivated both during the school cycle (primary school, college and faculty), but especially throughout their lives.

"Entrepreneurship, according to the European Commission, represents the individual's ability of transforming a business idea into real efficient economic activity. This process is supposing creativity, initiative, innovation and risk assuming. Entrepreneurial competences are referring to abilities together with knowledge in the activity area. So, generally the entrepreneurship should be considered as a state of mind that is offering the base for social and economic activities of the individual (European Commission, 2013; European Framework for Key Competences, 2006).

Entrepreneurs should have abilities such as responsibility, spontaneity, adaptability, initiative and managerial spirit. European Union policy, for supporting entrepreneurship, can be observed in the majority of strategic documents starting with the Lisbon Strategy and continuing with the Partnership for Economic Growth and Employment or in the Action Plan for Entrepreneurship. Analyzing these documents in the present framework, we can observe that the key element for future regional development is to encourage and support entrepreneurial initiatives referring to: inoculating to the young generations the idea that entrepreneurship could be an alternative carrier; encouraging people to choose entrepreneurial alternative because, according to statistics at European level, there are many persons that are hesitating in valorizing their good business ideas and so a big part of this potential remains unused; entrepreneurship represents the key for a higher living style for many and better working places. Entrepreneurship should not be regarded as a simple way of making money. It should be considered the essence of the process in helping the community of the entrepreneur, starting from putting his/her own ideas into practice, determining the desired living style accomplished through the responsibility towards him/her and the others (Gavrila-Paven, Fijuljanin, 2012; Gavrila-Paven et al., 2014).

Improving the entrepreneurial and innovative abilities of the citizen and especially of the young people is an European need, underlined in three representative initiatives of the European Strategy 2020 for employment and sustainable development: "An Union of Innovation", "Youth in Action"

and "An Agenda for New Competences and New Jobs". Sustaining and supporting creativity and innovation at all educational levels is a long run objective of the "2020 Education and Professional Training" as one of the direction of the strategic framework for European cooperation"[12] (European Commission, 2009; Gavrila-Paven et. al, 2014).

## Romanian Education System – Characteristics

The Romanian educational system is trying to respond to the need of opening the system to the real economic system and its requirements. "For the academic system is very important to be integrated and to develop relation with the local and regional business environment, involving students in real activities through their practice period, projects or final thesis. Also the universities research should be incorporated in local, regional and national activity. The partnership between universities and business environment should develop new results, new ideas, products, services, technologies that should be applied in real activity and contribute to the sustainable development at regional and national level.

The institutional entities, in order to facilitate the multi-facets relationships between research and industry have an important role. There is a wide variety of transfer institutions around Europe, as a result of the national policies focused on stimulation the interest and motivation of universities, companies, consultancy firms and public authorities to interact each other, in formal and informal ways, for enhancing knowledge transfer (European Commission, 2007). An important issue regarding the relation between university and industry is the restructuring of universities and transforming them into entrepreneurial universities. The literature in USA as well as Europe, underlines that a university can be considered entrepreneurial when it is not afraid to maximize the commercialization potential of its ideas and to create value within society, because it doesn't perceive this as a threat to its academic values; it also admits the need for a diversified funding sources portfolio, increasingly involving private sources. The entrepreneurial university earns its reputation not only through publications and educational activity, but also through drawing a large number of stakeholders, through deep involvement in economic and social development of its proximity environment (Loet Leydesdorff, 2012; Shattock, 2010; OECD, 2005; Gibb, 2011; Farsi *et al.* 2012; Sandu, Gavrila-Paven, 2012).

In the last years we have also seen an increasing number of universities that are offering entrepreneurship courses and programs, in the USA as well as in Europe. One reason for this increase is that the structure

[12] *Ibidem*, p. 1065–1066.

and teaching style of traditional business education has been accused of impairing entrepreneurship. More explicitly, traditional business education tends to focus on disseminating information and training of analytical abilities, whereas the vital skills for entrepreneurs are less about information processing and analysis and more about creativity and action. There is still a lack of knowledge regarding the effect of different educational programs on students' behavior and subsequent performance as entrepreneurs. Specifically, it is indicated that the most or researches assume a causal relationship between the entrepreneurship education and entrepreneurial behavior. Teaching entrepreneurship to students is important in order to demonstrate how having an entrepreneurial spirit as early as possible in life is a positive thing. They will learn the value of money, time management and maturity, which will prepare them for life"[13] (Muntean, Gavrila-Paven, 2012).

## Methodology research

This article presents part of results obtained in a research conducted in 2013 regarding the entrepreneurship intentions of the graduate students in a Romanian university, respectively "1 Decembrie 1918" University of Alba Iulia. The research consisted in a questionnaire, self – administrated to the final year students from the economic specializations, during January – February, 2013. The participation of the students in the research was optionally, depending on individual initiative, the questionnaires were anonymous, and this generated response from 120 students in their final year of preparation. The results of the research conducted in 2013 are coming to support the results obtained in a similar research conducted 2 years earlier, in 2011 when a similar research was realized, being addressed also to the students interested in entrepreneurial area. In 2011 the research included students that participated in thematic project, aiming exactly the entrepreneurial motives and opportunities for entrepreneurs.

Considering these aspects, the article is focused on presenting the role of education in supporting the entrepreneurial initiatives. The graduates' students that are opening new businesses after graduation are generating working places in local and regional economy and are becoming directly productive. This underlines the stimulating role of the entrepreneurial education, especially for the students in economic specialization. It is also the perspective for presenting in this article the aspects from these researches that are pointing out the entrepreneurial initiatives of the graduates' students and their motivations in choosing the entrepreneurial path.

[13] *Ibidem*, p. 1066–1067.

"The question "what are your plans after graduation?" was asked to students in order to choose between those who have entrepreneurial purposes and those who have not. The students who have responded saying that "I'm planning to initiate my own business" were accepted as potential entrepreneurs. The study objectives are: to identify the importance of some personal, economic and social reasons in starting up and developing a business. The most important personal motivation considered were: "to be his/her own boss", "to improve his/her life standard", "family tradition" and "personal ambition". From an economic point of view, a young student could choose entrepreneurship because he/she wants "to become an employer" or because he/she wants "to explore new business opportunities". Social motivation could also be important: "to have a social status" or "because he/she respects entrepreneurs". The importance of these motivations were evaluated using a five scale point, from 1 – Unimportant to 5 – Very important. All the questions were closed"[14].

Also, analyzing the data, it was identified the need to realize a data base with the graduated students and to receive information from them regarding their professional life. The study conducted and presented, is being the starting point for a long term project in identifying the graduated students' professional evolution, especially in the first years after graduation. This is the raison why in the study were included the final year students from the economic specializations, for identifying first their entrepreneurial motivations and after one year the study will continue with the same sample of individual to observe their professional trajectory in the first year after graduation. On long term the purpose is to establish a database with the evolution of all graduated students (Gavrila-Paven, Muntean, 2011; Gavrila-Paven et. al, 2014).

## Results and conclusions

"Considering the personal motivation of starting up their own business, the responses of the final year students were as it follows (Table 1):

**Tab. 3. Personal motivation**

| Motivation | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| To be my own boss | 4% | 9% | 4% | 32% | 51% |
| To improve my life standard | 3% | 1% | 4% | 8% | 84% |
| Family tradition | 79% | 6% | 15% | – | – |
| Personal ambition | 27% | 7% | 32% | 15% | 19% |

[14] *Ibidem*, p. 1067.

The majority of the questioned students answered that they would choose the entrepreneurship alternative to improve their life standards (84%) and, also to be their own boss (51%). Considering from their point of view, family tradition and personal ambition were not considered important reasons for starting up a business.

Just like in the last study, it was surprising to observe the low importance of family traditions, because the entrepreneurial role models are widely considered as a significant factor affecting entrepreneurship. This is a raison for including in the future study elements regarding the role of the university's training program for entrepreneurship. The opportunities and linked activities that could be developed during their study period that will contribute to increase the confidence in their own forces and to give the needed knowledge and, as it is possible, the minimum practical experience for starting their own business.

This is the raison for which the universities should be considered for the next period the core of regional economic development. The relations between universities and business environment had developed in the last years. The regional companies are now seeing the practice periods as an opportunity for observing the future graduated students, and their future employees. Also the final papers for graduating are seen as an opportunity to obtain an objective opinion from a future expert regarding the company's situation from different points of view. In the last years there were students that presented in their final exam the economic situation and the future perspectives for different companies, marketing strategies or even touristic offers for some agencies. Some of these students were contacted later by those companies and were hired, becoming these days' key employees for those companies. But the information regarding these aspects is not gathered systematically.

These activities developed in the last years by the university together with the business environment and other public institutions offered to the students' new chances. Also, the teachers and lecturers were involved in research programs in partnership with private companies that offered them a new perspective of the real need of the business environment.

Considering the economic motivation, for the future graduated students, majority (89%) answered that the possibility to explore new opportunities is most important motivation for becoming an entrepreneur.

**Tab. 4. Economic motivation**

| Motivation | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| To become an employer | 45% | 10% | 12% | 24% | 9% |
| To explore new business opportunities | 3% | – | – | 8% | 89% |

It seems that the attitudes are mainly positive but the interests very rarely finish in starting their own business. Unfortunately, it has been considered that students lack proper knowledge about how to start and run an enterprise and that is why they do not consider entrepreneurship as a career option. This is why there is need for the academic environment to keep closer to them their graduate students, in terms of communication. For updating the programs and the curricula, to introduce new practice stages, new ways of learning, teachers should have a feedback from their formal students. More, the formal students will have the opportunity to express themselves freely and to send their opinions anonymously to the teachers.

For starting up a new business it has to be considered also the attitude towards risk-taking, which is one of the most significant factors for entrepreneurship.

From a social perspective, both social status and the respect for entrepreneurs have a high importance for young students (Table 3).

**Tab. 5. Social motivation**

| Motivation | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| To have a social status | 5% | 5% | 11% | 23% | 47% |
| Because I respect the entrepreneurs | 11% | 17% | 5% | 23% | 41% |

The "social status" was pointed out as important and very important by 70% from the responders, while "the respect for the entrepreneurs" by 64%.

The pronounced negative influence of students' chosen professions may well be predominantly a question of context and culture: many students arrive at university with clearly established (though not necessarily realistic) ambitions with regard to the profession they wish to follow. For example, despite the contraction in public sector employment opportunities in recent years, this type of employment continues to be a popular and highly favored career choice; this suggests that slowly changing cultural attitudes, as well as slowly emerging improvements in the relevance of university training, still influence student decisions regarding self-employment and entrepreneurship (Muntean, Gavrila-Paven, 2012).

In the future, Romania has to develop a new generation of entrepreneurs with characteristic abilities such as responsibility, spontaneously, adaptability, initiative and managerial spirit that will allow them to implement adequate strategies for entering and maintaining on the market. These personal abilities has to be cultivated during the educational cycles, and more, long life learning"[15] (Gavrila-Paven, Cordos, 2010; Gavrila-Paven, Muntean, 2011).

[15] *Ibidem*, p. 1067–1069.

## Identifying new business opportunities for the Center Region

"Apparent from the data analyzed, the Central Region ranked six of eight development regions, at the student-investors section and with percentage of 12.70% country wise, registered at ONRC, which leads to the idea that increased efforts are needed to promote entrepreneurship by all means and support all regional and local actors from the Community.

It is extremely important to further develop entrepreneurial activities in the Center Region, through specific activities, to achieve the following objectives"[16]: (1) information; (2) professional and dedicated training; (3) information and consultancy in international and national financing programs; (4) supporting access to funding programs administered at national and local level.

Information is addressed to micro, small and medium cooperatives, individual entrepreneurs seeking information, advice, assistance and answers to questions about legislation, policies, programs and funding opportunities from governmental and European funds. Through the funding programs that are managed at national and regional level the goal is to create a conducive environment for the establishment and development of companies, boosting competitiveness, implementing European quality standards, promoting entrepreneurial culture as well as handicraft industry development.

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[16] *Ibidem*, p. 1069.

# 2.2.
# THE ROLE OF EDUCATION IN STIMULATING THE INNOVATION IN ENTREPRENEURSHIP

**MĂLINA CORDOȘ*, IONELA GAVRILĂ-PAVEN****

## Introduction

Entrepreneurship is a dynamic process, aspect revealed by the psychological and sociological research. The initiative that is driving an entrepreneur is more than a simple economic driver (Pirich, 2001). Entrepreneurship represents a choice of an individual in assuming the risk and taking the decision in investing time, knowledge, energy and capital in a business. The definitions for entrepreneurship concept refer to the management role of the entrepreneurs, respectively coordination and cooperation, research and innovation, diminishing the uncertainty, supply of capital, decision-making, ownership and resource allocation (UNCTAD, 2005; Friijsetal, 2002; Jääskeläinen, 2000). Three of the most frequently mentioned functional roles of entrepreneurs are associated with the main schools of on entrepreneurship: (1) search and assumption of the risk: entrepreneurs described by Cantillon or Knight are willing to take the risks associated with uncertainty; (2) research and innovation: the Schumpeter' entrepreneurs described are using various methods for generating innovative ideas, dissemination and implementation of these ideas; (3) continuous search for the opportunity: entrepreneurs described the Kizner identify and manage opportunities and manage to obtain profit from them (OCDE, 1998; Carree şi Thurik, 2002).

An operational definition of entrepreneurship that successfully synthesizes functional roles of entrepreneurs is that of Wennekers and Thurik (1999): "the ability and willingness of individuals, on their own, organized in teams inside and outside of existing organizations, to perceive and create new economic opportunities (new products, new production methods, new schemes of organization and new product-market combinations) and to introduce their ideas on the market, despite the uncertainty and other obstacles, through the

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making of decisions regarding the location, the shape and use of resources and institutions". Entrepreneurship is, therefore, essentially, a behavioral characteristic of a person. Entrepreneurs can expose it only during a certain stage of their career, or only on certain activities (Carree and Thurik, 2002).

## The role of education in stimulating the innovation

Innovation has been defined in many different ways by different specialists, without a generally accepted definition. DEX online mentions that innovation is: "1) a novelty, change, transformation, or 2) solving a technical or work organization problem in order to improve labor (productivity), technical improvement or rationalization of applied solutions". Innovation is a process (the innovating action) and innovation is the result of innovating. Another opinion is that *innovation* is both a process and a result of this process (so it is both an active form as well as an outcome).

The research, development and innovation activities, according to their predictable results, are structured in four categories: (1) product innovation; (2) process innovation; (3) marketing innovation; (4) organizational innovation. OSLO Manual recommends the following conceptual definition of innovation (technical): "innovation is the implementation of a new or significantly improved (good or service), or process, a new marketing method, or a new method of organizing in business practice, in organizing of the working places or external relations". The minimum requirement for an innovation is that the product, process, marketing method or organizational method must be new (or significantly improved) to the firm (Potecea, Cebuc, 2010; OCDE, 2005).

Innovation supposed by the categories presented above, is based on research and development activities. An innovation role is to improve or to bring positive changes in current activities, but it needs also a good understanding of the processes and/or goods/services that are being the subject of innovative activities. Innovation is strongly related to the creativity capacity, creativity which is being and should be stimulated mainly through the educational system.

Innovation activities represents an ensemble of scientific, technological, organizational, financial and commercial actions that help all innovations materializing and their implementation (OSLO Manual, 2005). Innovation activities also include research and development activities that is not directly linked to the development of a specific innovation, but seeks the accumulation of new knowledge that will be needed in the design of modern innovative technical systems. The innovation process includes a series of activities which are not research and development activities (different phases of production and distribution of new products, staff training on new processes, activities, implementation of innovations, new marketing and new organizational methods).

Regarding the innovation in services (van Ark et al 2003) specifies that innovation in services is a "concept of a new or significantly improved service, a new channel for interaction with customers, a new system of providing services or technological concept that individually or in combination, lead to one or more new functions (renewed) service, which are new for the company and changes the service/good offered on the market and requires new technological human or organizational capabilities of the services firm". This definition covers the concepts of technological and non-technological innovation in services. For the services sector it might be accepted following definitions of product innovation or process: *(1) product innovations* are services whose intended use or whose performance characteristics are significantly different from the existing ones. The introduction of entirely new services represents product innovations; *(2) process innovations* are represented by the use of methods, procedures, equipment and/or new or significantly improved competences for provision of services.

## Innovation and entrepreneurship

Innovation is based on knowledge and means for achieving predefined specific goals. These goals are being implemented through the economic activity, which leads us to the development concept. Development refers to the systemic use of knowledge and means achieved in applicate research for creating new products or the improvement of the existing products or for creating or modifying processes.

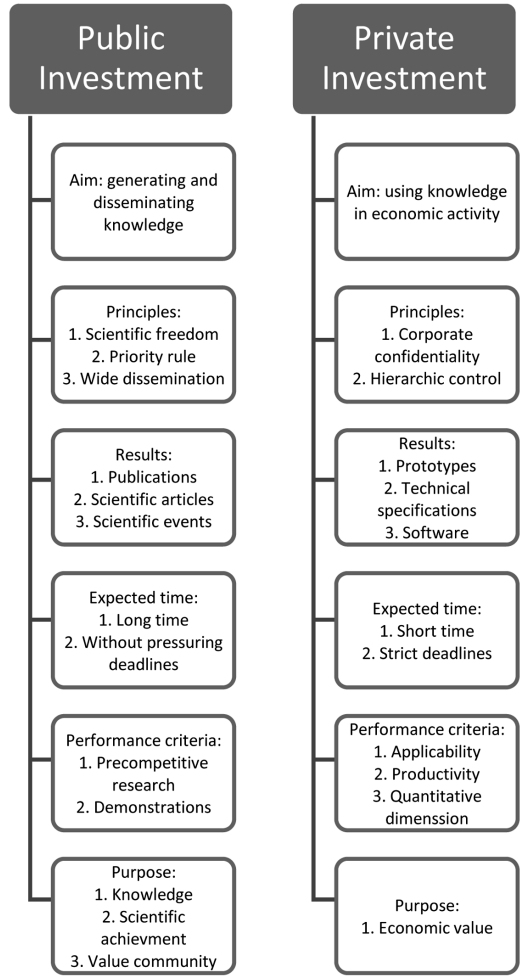
Thus, the research and development activities are determining an increase of the labor productivity by introducing new technologies, products or improving processes. The impact of introducing new technologies upon the productivity is depending also on the complementary or additional investments that the organizational structure is supposing (structure, procedures, management modifications). These changes suppose also the training of the human resources that have to use the new technologies, products or processes.

Considering these aspects, it can be understanding that the most important effect upon the economic development is being determined by the applicate/industrial research and development, financed mainly by the private company. Public investment in research and development activity have a positive effect upon the private investments because they are reducing the uncertainty level and increase the reimbursement level expected as a result of the research investments of the private companies.

Nowadays, the efforts realized in research and development activities are focused on technological achievements with high impact, but usually difficult to introduce in everyday activities of the economic activities.

According to the real economy, the research and development activity is producing real effects in 3 to 5 years. These investments are mainly private investments. On the other side, the impact of the public research and development investments are being visible in 5 to 7 years, with the tendency of increasing this period towards 20 years (especially due to the rate of success recorded in research activity, which is not always secured). The complementarily, with positive effects, between the two types of investments (public and private), is depending on the institutional characteristics and the decision making mechanisms of the two areas. The main characteristics of the two types of investments in research and development activities, that are generating innovations to be applied in economic activities, are being presented in the following figure:

**Fig. 2. Public and Private Investments in Research and Development Activity**



## Education, innovation and entrepreneurship in Romania

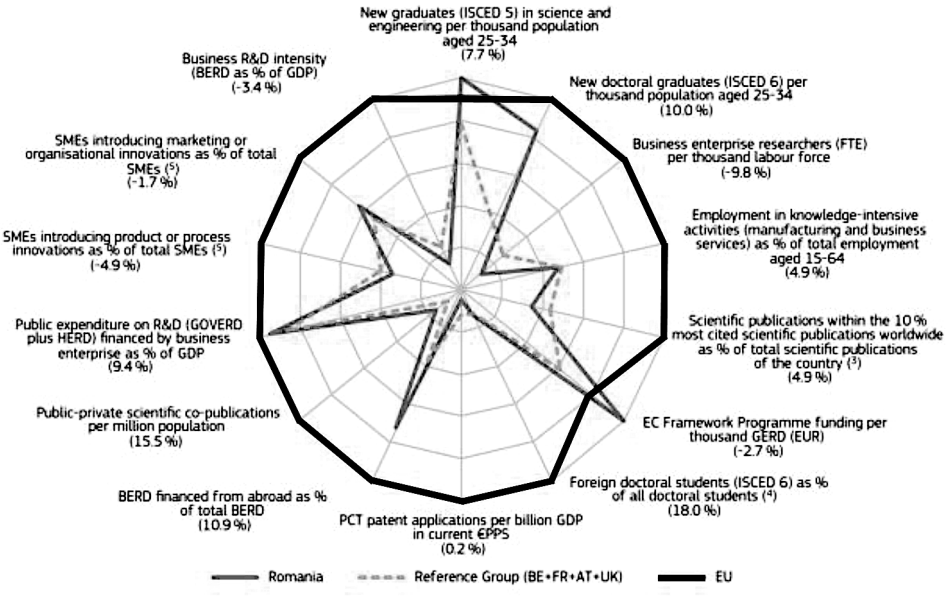
One of the challenges that Romania is facing is to cover up the gap in development level compared to the average recorded at European Union level. The objective assumed by the Romanian economy in becoming a knowledge-based economy is strongly related to the policies in education, research and development sector. Investment in education is representing still a small percentage reported to the Gross Domestic Product, but there has been done efforts to introduce entrepreneurial education as a key activity.

Investments in research and development area represents an opportunity for Romanian economy and also for the enterprises to become more competitive on the European market and at global level as well. Still, one of the major problems is being represented by the financing of the research and development activity. In the last years, Romania recorded the lowest level of investments at European Union level in research and development especially at enterprises level and with an average rhythm of increasing shown in the table below. None of the Romanian enterprises is being placed in the 1,000 Top of the European Union enterprises that are investing in the research and development activity. The target for 2020 for Romania is to represent 2%, but this target is being very ambitious and difficult to accomplish with low budgetary arrangements and low investments from the enterprises part. This target could be achieved only if investment in research and development are transformed into a national priority. According to the reports of the European Commission regarding countries performances in research and development, Romania recorded a level of participation of 14.4%, below the average of 21.95% recorded at European Union level. Main collaboration relations in research and development sector were recorded for Romania with Germany, Italy, Great Britain and Spain (Cordoș, Gavrilă-Paven, 2017).

The following graphic is illustrating the strengths and weaknesses of the Romanian education, research and development system. The graphic is offering information related to human resources involved in research and development sector, scientific results, valorization of the innovation and new technologies. The main characteristic of the Romanian system is that the research and development sector is mainly supported by the state, only 38% from the research activity being accomplished by the business environment, while the European Union average is 61.5%. Another structural characteristic is the fragmentation of the public research and development sector which has a large number of researchers but is missing the critical mass of the research results. Still, Romania has a high level of university graduated and PhD students, but because of the low financing of the research and innovation sector in the last period, we are facing a general exodus of the young researchers. According to the country reports is being estimated that

approximately 15,000 Romanian researchers are working abroad (Cordoș, Gavrilă-Paven, 2017).

**Fig. 3. Romania – Research and Innovation performance in Romania compared to European Union**




*Source*: DG Research and Innovation — Economic Analysis Unit
*Data*: DG Research and Innovation, Eurostat, OECD, Science Metrix / Scopus (Elsevier), Innovation Union Scoreboard
*Notes*: (1) The values refer to 2011 or to the latest available year.
(2) Growth rates which do not refer to 2000-2011 refer to growth between the earliest available year and the latest available year for which comparable data are available over the period 2000-2011.
(3) Fractional counting method.
(4) EU does not include DE, IE, EL, LU, NL.
(5) TR is not included in the reference group.

Source: European Commission, Directorate – General for Research and Innovation, Directorate C – Research and Innovation, Unit C.6 – Economic analysis and indicators, Research and Innovation performance in Romania, Country Profile, 2013, p. 3.

## Future challenges

Education is one of the major factors that can stimulate the economic development of every country. Through education is being shape an adjustable human resources need in companies that can generate, implement and sustain technic and social progress. Education represents the suitable option in disseminating knowledge, developing competences and assuring the scientific fundaments for research, development and innovation activities.

Considering the research and development activity, Romania has a good scientific and technological capacity in the area of informatics and communi-

cations represented through regional clusters, nanoscience and nanotechnologies, automotive, security and new production technologies. The partnership between educational institutions, research institutes and private companies represents the efficient way in realizing a real scientific research with results in economy. These results can be also represented through indicators that are reflecting the research activity: number of articles in specialized international journals, citations and the impact of the scientific publications shows that the main scientific domains are mathematics and statistics, physics and astronomy, generic and strategic technologies and engineering.

Regarding the innovation activity, patenting the research results is extremely low and does not show a significant technological specialization statistically speaking. More, at Romania level it could not have been identified a stable specialized cluster in creating new jobs or in technology. Main factors that are affecting the enterprises activity were identified as being: tax rates, bureaucracy, instable policies, reduce financing access and corruption (Cordoș, Gavrilă-Paven, 2017). The future orientation for Romanian economy should be on increasing the competitively level and to encourage the business environment to invest in education, research and development activities, increase the administrative capacity andâț research infrastructure.

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# CHAPTER 3.

# SELECTED PROBLEMS OF ORGANIZATION OF EDUCATIONAL SYSTEMS

# 3.1.
# INTEGRATION OF RUSSIAN EDUCATION INTO THE EUROPEAN MARKET FOR EDUCATIONAL SERVICES

ELENA V. BURDENKO*

## Introduction

In the last third of the twentieth century, as a result of the accumulation of knowledge, the development and widespread of new technologies, the formation of a knowledge economy began. In the way of life of humanity, there are cardinal changes. The emerging new society is fundamentally different from its historical predecessors. Based on the development of science and efficient technologies, the new quality of human capital, the changing social structure of society, a higher level of management. Also based on a more rational use of resources, opportunities in production that associated with these factors, consumption, and reduction of unit costs of resources for an output of products and services. Together, these circumstances form a new synergetic effect, which determines the formation of a new society.

The economic success of the country is determined by the intellect of the population, therefore the role and importance of education and its accessibility increases. There is a need for studies to assess the achievements in education in different countries of the world. Economic integration of countries requires the creation of unified clear standards of higher education which guarantee the quality of the acquired professional skills.

## Background

Particular attention paid to the question of education by representatives of the neoclassical theory such as G. Becker (1993), T. Schulz (2002), J. Minser (2002) and others. Evaluation of the effectiveness of education and factors affecting its state and development analyzed in the works of the following

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Russian economists: S. G. Strumilina (1983), V. A. Zhamina (1969), S. L. R. I. Kapelyushnikova (2010), V. I. Marcinkiewicz (1991), R. M. Nureyev (2001), G. P. Zhuravleva (2016) and others.

The problem of the formation of the "knowledge economy" is examined in the works of the following economists: F. Mahlup (1962), M. Castells (2000), K. Kelly (2003), J. Hodgson (2001), G. V. Kolodko (2002), L. I. Abalkin (2001), A. A. Dynkin (2005), V. L. Makarov (2003) and others.

Economists whose works devoted to the problems of the functioning and regulation of the market of educational services: V. S. Bazhenova (2000), E. V. Burdenko (2004, 2011), G. Williams (1992), V. A. Gerasimov (2002), U. G. Zinnurov (1993), Yu. I. Ivanov (1992), F. M. Rusinov (1992), G. I. Lukyanova (1999), V. D. Ostapchenko (1992), E. D. Osodoeva (2000), A. P. Pankrukhin (1995), E. N. Popov (2009), N. A. Seleznova (1995), A. I. Subetto (1995), O. A. Khashirov (1993), E. D. Tsyrenova (2000) and others.

But a comprehensive study of both the evaluation of educational achievements in different countries of the world and the integration of Russian education into the European market of educational services on the basis of the Bologna Declaration is being held for the first time.

The purpose of this study is to analyze the integration of the Russian education system in the European market of educational services in the conditions of formation of the knowledge economy.

To achieve this goal, it is necessary to solve the following tasks:

- ❑ to conduct an analysis of international studies and programs aimed at assessing the achievements in education in different countries of the world;
- ❑ to conduct a retrospective analysis of the integration of Russian education in the European market of educational services on the basis of the Bologna Declaration.

The study uses statistics from UNESCO, OECD, the United Nations, the World Bank, EFQM, Erasmus, and the Russian Federal State Statistics Service.

## International programs and studies to assess the achievements in the field of education

The most important factors that have a strong impact on the formation of the knowledge economy are education and human resources. The development of all types of production (tangible and intangible) testifies to an increase in the share of the cost of knowledge in all economic categories:

- ❑ in the price of an individual product – an extra charge for novelty, style, brand, professional design, quality assurance, insurance, etc.;
- ❑ in the value of the company – evaluation of its intellectual assets: investments in human capital and R, D, patents, licenses, know-how;

- ❑ Management capacity: management skills, relations with consumers and suppliers, etc.

In 1958 was founded The International Association for the Evaluation of Educational Achievement – IAE. As a legal entity, it registered in 1967. A group of scholars of educators, psychologists, and sociologists met at the UNESCO Institute for Education in Hamburg to discuss the problems of the school and the evaluation of students. Since its inception, the IAE has conducted more than 30 scientific studies in various countries to compare schoolchildren's schooling in mathematics, science, reading, civic education, computer and information literacy. Monitoring data form the basis for analyzing the educational situation in a given country. At the moment, the following studies regularly conducted:

- ❑ on the evaluation of school performance: an international study of the quality of mathematical and natural science education (TIMSS 1995, TIMSS 1999, TIMSS 2003, TIMSS 2007, TIMSS 2011, TIMSS 2015); international study of the quality of reading and comprehension of the text (PIRLS 2001, PIRLS 2006, PIRLS 2011, PIRLS 2016);
- ❑ International study of the quality of civic education (CIVED, ICCS 2009, ICCS 2016);
- ❑ International study of computer and information literacy (SITES-M1, SITES-M2, SITES 2006, ICILS 2013);
- ❑ International study in higher education (TEDS-M in 2005);
- ❑ International study of preschool education (PPP, ECES);
- ❑ International Comparative Study of the Teacher's Corps (TALIS);
- ❑ International Assessment of Adult Competencies (PIAAC).

When conducting research, attention paid to the following key aspects: the proposed curriculum (which policy implemented); the curriculum used (what taught in the school); the result achieved (what knowledge the students have).

In addition to the OECD studies listed above (OECD – Organization for Economic Cooperation and Development), the PISA (Program for International Student Assessment) conducted. The test was developed in 1997 and was first held in 2000. The main line of activity here is monitoring of the quality of education in the school. The knowledge of 15-year-old schoolchildren in the field of mathematics, reading and natural sciences checked. The study was conducted in 2000, 2003, 2006, 2009, 2012, 2015, which allows assessing the dynamics of the indicator for each country.

Russia has been participating in the PISA rating since 2000. In an international study conducted in 2016, over 42,000 fifteen-year-old Muscovites from 609 schools took part. Based on the results of checking the students' knowledge in natural sciences, reading, and mathematics, Moscow schools entered the top ten. Indicators of the capital's schools were at the level of educational institutions in Japan, Shanghai, Hong Kong, Finland, and Singa-

pore, which is higher than the results of many European schools. Currently, 300 leading Moscow schools educate 69% students of the city, and the level of training is comparable to leading education system in the world.

In May 2015, the Declaration "Education 2030: ensuring universal inclusive and equitable quality education and lifelong learning" adopted in Incheon (Republic of Korea). The Declaration was supported by UNESCO, UNICEF, the World Bank, UNFPA, UNDP, UN-Women, and UNHCR. The adopted declaration determined the direction of development of education for 15 years ahead:

- ❑ Guarantee of 12-year free education, funded by the state;
- ❑ Equitable access to quality primary and secondary education;
- ❑ Equity and social integration in education;
- ❑ Recognition of gender equality in ensuring the rights to education;
- ❑ provide quality education and improve learning outcomes;
- ❑ promote the creation of opportunities for quality learning throughout life, etc.

Among the leading countries, according to different ratings, European countries are singled out, which even within the European Union have an uneven development. Integration of the EU countries required not only an assessment of problems but also measures to unite the education systems and develop common indicators of development.

## Requirements of the Bologna Declaration

Let us consider in more detail what measures were taken in European countries and in Russia to retain and improve their rank on the knowledge economy index. As can be seen from the comparative analysis of the formation and development of the knowledge economy, the most important thing is the development of human capital, which is not possible without an appropriate system of education and training. For the harmonization of higher education systems in European countries, the Bologna Declaration was signed by the Ministers of Education in June 1999.

The goal of the Bologna Declaration is the establishment of a European zone of higher education, as well as the activation of the European system of higher education on a global scale.

The Bologna Declaration contains six key provisions:

1) The introduction of two-cycle training (Bachelor and Master). The training consists of two cycles: the first – until the first academic degree, the second – after receiving the first academic degree. Continuation of training on the 1st cycle should be no less than 3 and not more than 4 years. Training during the second cycle can lead to a master's degree (after 1–2 years of training after receiving a 1-st

degree) and/or to a doctor's degree (with a total length of study of 7–8 years).
2) The introduction of the credit system. In all national education systems to introduce a system of accounting for the labor intensity of educational work in credits. As a basis, it is proposed to adopt ECTS, making it an accumulative system capable of working within the framework of the concept of "lifelong learning".
3) Quality control of education. Evaluation will be based not on the duration or content of training, but on the knowledge, skills that graduates have acquired. At the same time, the standards of transnational education will be established.
4) Expanding mobility. Expansion of students', teachers' and other staff mobility for mutual enrichment with European experience.
5) Ensuring the employment of graduates. All academic degrees and other qualifications must be claimed by the European labor market, and professional recognition of qualifications should be facilitated. To ensure the recognition of qualifications, it is planned to use the Diploma Supplement recommended by UNESCO everywhere.
6) Ensuring the attractiveness of the European education system. Increase the international competitiveness of the European system of higher education in comparison with the American system.

Countries join the Bologna Process on a voluntary basis through the signing of a relevant declaration.

## Integration of Russian education into the European market of educational services on the basis of the Bologna Declaration

Russia in September 2003 in Berlin at a conference of education ministers signed the Bologna Declaration. This means that the Russian higher educational institutions have entered the unified European educational space. Let's consider the Russian experience of implementing the main provisions of the Bologna Declaration.

1. The transition to a two-level education was started in 1992 when the standards of higher education of the 1st generation were approved. Even then, some universities in Russia began to prepare bachelors and masters, while maintaining the most common form of education – a specialty. But over the past 13 years (1992–2005), the bachelor and master have not received a universal distribution; only 50% of universities had a license to prepare a bachelor. After the signing of the Bologna Declaration, all universities moved to a two-level education in 2011. Training is conducted according to the following scheme:

- ❑ Bachelor 4 years – Master 2 years – postgraduate studies for most specialties. In this case, the admission after a bachelor's degree to a specialist considered as a second higher education, which is paid.
- ❑ Specialty – postgraduate studies for mono-specialists, which for objective reasons cannot be transferred into bachelor's and master's degrees, as this can lead to a deterioration in the quality of specialist training for the national economy.

Changes occur in the structure of standards and requirements for higher educational institutions engaged in training bachelors and masters. Representatives of employers are introduced to the commission for the certification of universities. There is more freedom for higher education institutions in the formation of bachelor programs, specialists, and masters. The structure of the formation of standards has been changed. The standards contain:

1) Requirements for the results of development;
2) Requirements for the structure of the program;
3) Requirements for the conditions of program implementation.

Each cycle is divided into two parts: basic and variable. The basic part is the same for all training profiles of this direction. And already the variable part is formed at the discretion of the university and taking into account the profile of training. The basic part takes 50% of the total labor, and the same amount is allocated to the variable part.

2. The introduction of the credit system. There are no norms for the number of credit units and hours for each discipline, but there are restrictions on labor intensity. There are no more than 10 credit units that can be in one discipline. Thus, 1 credit unit is equal to 36 academic hours. In this case, the transition to credit units is the use of a credit system that allows increasing student mobility. Passed disciplines during the semester in another university (country), provided that the number of credit units coincides, can be counted on the basis of the credit transfer system by the main institution.

More attention is paid to students' practice as the results of the research, show that if theoretical knowledge is not backed by practice, then in 1 year the loss of knowledge will be 50%. In European countries, the practice takes in the total complexity of the bachelor's program from 1 semester to 1 year (48 weeks in England).

Particular attention is paid to the use of modern educational and information technologies. The standard does not specify the requirements for state certification of graduates, for final qualification work. They must be developed independently by higher educational institutions.

3. Quality control of education. Let's focus on models of quality management in higher education. In Russia, a state system of certification and quality control at the state level has been created. The control is exercised by the Federal Service for Supervision in Education and Science (Rosob-

oradnadzor). And in each institution, there must be a department for the quality of education. However, it should be noted that these structures are not limited only to the control function, it is necessary to constantly ensure and manage the quality of education in the process of providing educational services. These processes do not duplicate but complement each other. The creation of a quality management system in the university makes it possible for them to focus their activities on satisfying the requirements of consumers of educational services, to intensify activities in the field of quality assurance, to streamline the document circulation, to create a system of responsibility for quality, and to guarantee the quality of education in accordance with accepted norms and standards. Let us dwell on models of the management of the quality of education in higher education, which include the following:

1) Model of the quality management system, corresponding to the international standard ISO 9001: 2015. In Russia, the international standards ISO 9000 were adopted as national standards of GOST R in 1988.
2) Model of the European Foundation for Quality Management (EFQM)[17].
3) Models of national and regional quality awards and their modifications for higher education.
4) Model of quality management in universities based on the principles of TQM[18].
5) Let's consider these models in more detail.

1. Model of the quality management system, corresponding to the international standard ISO 9001: 2015. ISO International Standards were developed and approved in 1987 by the ISO International Organization for Standardization. In 1994, 2000, 2015, work was carried out to revise them based on experience gained. Currently, more than 160 countries have recognized ISO as national or have harmonized them in accordance with national standards. In the world, more than 500 thousand companies have voluntarily certified their quality systems in accordance with the ISO 9000 series. In recent years, the interest of enterprises to the introduction and certification of quality management systems and the use of international standards ISO 9000 has grown in Russia.

2. Model of the European Foundation for Quality Management (EFQM) and its modifications for higher education. The European Quality Management Foundation (EFQM), the EU Commission and the European Organization for Quality (EOQ) in 1991 established a European quality award. The

[17] The European Foundation for Quality Management (EFQM) is a non-profit organization established in 1987 by fourteen leading European companies (Bosh, BT, Bull, Ciba-Geigy, Dassault, Electrolux, Fiat, KLM, Nestle, Olivetti, Philips, Renault, Sulzer, Volkswagen ) with the support of the EU Commission.

[18] TQM – Total Quality Management.

aim of the European quality award is to stimulate and motivate European companies to improve the quality of goods and services. The evaluation of the participants of the competition for this award is held on a 1000-point system based on 9 criteria, which are divided into two groups: "Opportunities" (500 points) and "Results" (500 points). For each criterion of the European Quality Award, recommended and additional estimates are set.

The European Quality Award is a modification of the European Quality Improvement System, which was established by the European Foundation for Educational Management (EFME). This model is based on the evaluation of ten separate areas. The model is based on the use of the self-assessment of the organization, the preparation of the report of the contestant on its basis and evaluation by external experts. As part of the competition for the award in the field of quality, self-evaluation is a process of internal assessment of the quality of the organization's work carried out by the institution itself in accordance with established criteria. The European model of the award in the field of quality underlies many national prizes in the field of quality.

At the end of 2001, the EFQM adopted the scheme for recognizing the conformity of the Perfection Model organizations, establishing several levels of excellence.

The top level is recognition in the framework of the competition for the European Excellence Award (EEA)[19].

At this level there are:

- ❑ The winners of the competition are the winners of the EEA (Award Winners);
- ❑ Prize Winners;
- ❑ Finalists (EEA Finalists).

The average level is Recognized for Excellence.

The initial level is Committed to Excellence.

3. Models of national and regional quality awards and their modifications for higher education. In 1996, Russia joined the list of countries having national quality awards. The prototype for the Russian award was the European model. Modification of the national award for quality in the field of education is the competition of the Ministry of Education of the Russian Federation "Intra-institutional systems of quality assurance of specialists training", which has been held since 2000 in Russia.

In recent years, the model of self-esteem has become widespread among Russian universities. In Russia, higher education institutions can take part in the following contests for the award of quality:

1) Competition for the award of the Government of the Russian Federation in the field of quality;

[19] The official website of the European Foundation for Quality Management, www.efqm-rus.ru.

2) Regional quality contests (for example, the St. Petersburg Prize in quality, the quality award of Novosibirsk, Astrakhan, Tomsk, Kemerovo regions, etc.).

To participate in the contest, the University conducts a self-evaluation and submits a report and an application. Examination of reports and visits to universities by experts are carried out.

The Ministry of Education of the Russian Federation has formed an industry competition "Intra-Higher Education Quality Assurance Systems". This model is based on the basic principles of building a model of the RF Government Prize in the field of quality and models of regional competitions in this field. Coordinating activities are carried out by the Council of the Competition, approved by the Ministry of Education of the Russian Federation. To participate in the contest, the University conducts a self-evaluation and submits a report and an application. Examination of reports and visits to universities by experts are carried out.

Certification of the quality management system of a higher education institution is one of the ways to ensure that the certificate holder is always able to provide educational services that meet the established requirements.

4. Expanding mobility. In order to increase the mobility of students and teachers between the universities of the European Union, as well as Iceland, Liechtenstein, Macedonia, Norway, Turkey, a non-profit Erasmus program was adopted. The program was launched in 1987. The main goal of the program is to expand the mobility and cultural ties of students from European and neighboring countries. In 2017, the program celebrates its 30$^{th}$ anniversary. Between 1987 and 2014 1.6 million students and 470,000 teachers were educated and trained abroad. The number of countries participating in the program increased from 11 to 34. The program budget was 3.4 billion euros. According to the European Commission, about 10% of European students have been trained abroad by exchange. Every year the number of students participating in the program grows by 2%. The largest number of foreign students was taken by Spain, France, and Germany. The average monthly grant for students is 274 euros, and the average duration of exchanges is 6 months. In addition to training, 460 transnational scientific projects were financed under the Erasmus program.

The largest share in exchange programs is occupied by students studying in social sciences, business and law – 41%. The second largest share belongs to students studying in the humanities and arts programs – 22%. The third place is occupied by students studying engineering and technical specialties, construction – 15%.

Since 2007, the Erasmus program supports employment in foreign companies. In 2013–2014, 42361 students were employed at European enterprises. Most were employed in small enterprises – 44% of jobs, in medium-sized enterprises – 17% of jobs and in large enterprises – 18% of jobs. To sup-

port employment, universities organize a consortium, which includes an educational institution and companies, associations. Currently, there are 93 consortia in 14 countries.

The continuation of the Erasmus program was the Erasmus + program, designed for the period from 2014 to 2020. The new program is aimed at supporting cooperation in the fields of education, vocational training, youth, and sports. The Erasmus + program expanded the list of participating countries. It covers such countries:

1. Member States of the European Union;
2. Iceland, Liechtenstein, Macedonia, Norway, Turkey;

As well as partner countries in 13 geographic regions:

Region 1 – Western Balkans;
Region 2 – Eastern Partnership countries;
Region 3 – countries of the Southern Mediterranean;
Region 4 – Russian Federation (territory recognized as international law);

And others, including Central Asia, Latin America, Africa, the Caribbean, etc.

To expand cooperation in the field of higher education, the Erasmus + program includes 3 directions:

Key Action 1: Learning Mobility of Individuals – new mobility opportunities for students and teachers;
Key Action 2: Cooperation for innovation and good practice – cooperation for the development of universities' potential and exchange of best practices;
Jean Monnet Activities – wide opportunities for the development of European studies under the Jean Monnet subroutine.

The problem of expanding the mobility of school leavers, students and teachers both inside the country and abroad is also relevant for Russia. Russian universities participate in the Erasmus program and in 2006 the Russian national program office was opened. Since 2016, Russian organizations cannot act as grantees, but they can participate in multi-country projects involving several partner countries. This has complicated the participation of Russian organizations but has not yet led to a decrease in the number of applications filed. For example, according to the program Jean Monnet in 2014, applications were submitted 22, in 2015 – 78, in 2016 – 195.

In order to increase the mobility of applicants in Russia, a Unified State Examination (USE) was introduced at the end of the secondary school in 2009 in 2 compulsory subjects and 2 subjects of choice (depending on the chosen direction of study in the University). Applicants are admitted to higher educational institutions on the basis of USE results, which facilitate entry for residents of different regions. The certificate of USE is valid for

4 years. To ensure the accessibility of education, an educational loan is used. A loan is issued for the first and subsequent higher education, additional, concomitant education, advanced training. The term of the loan can be up to 20 years.

Since 1992, Russian universities have been implementing international educational programs, and separate programs taught in English. According to the Ministry of Education and Science of the Russian Federation in 2013–2014 in Russia, foreigners trained in 798 Russian universities. The largest number of students came from Kazakhstan – 27 500 people, in second place the Chinese – 18 200 people, in third place students from Turkmenistan – 12 100 people. A total of 81,000 people from the CIS countries, 41,700 from Asia, 18,000 from Africa and the Middle East, 6,400 from Western and Northern Europe, and 1,600 from the United States. The number of foreign students who come to study in Russia is growing every year. In 2015–2016 academic year, the number of foreign students was more than 270 000 people, which is 6% of the total number of students in the country. Foreign students prefer to study in public universities (95%). The most demanded areas of training are economics, management, clinical medicine, education, pedagogical sciences.

For applicants from India, Oman, Palestine, CIS countries, the Baltic, Abkhazia, South Ossetia, there is an opportunity for free-of-charge training in Russian universities within the limits of the allocated quota. Every year, Russia accepts 15,000 foreign students for free education.

Within the framework of cooperation of the BRICS countries (Brazil, Russia, India, China, South Africa) in 2015, announced the establishment of the Network University BRICS (NU BRICS). The NU BRICS includes universities of participating countries. It is an educational project aimed at developing joint educational programs, as well as joint research projects in 6 priority areas: energy; informatics and information security; research of the BRICS countries; ecology and climate change; water resources and neutralization of pollution; economy. The purpose of the university is to provide professional staff in participating countries. It is planned that the training started in one university can be continued in another. Upon completion of the training, students will receive 2 diplomas at the same time. The diploma will be recognized in all countries participating in the project.

5. Ensuring the employment of graduates. Programs implemented to increase the mobility of students, teachers, university staff, among other things, are aimed at facilitating the employment of university graduates. In the process of training, students practice at partner enterprises, where they receive not only practical experience, but also business contacts.

6. Ensuring the attractiveness of the European education system. The fulfillment of all the above requirements generally leads to an increase in the attractiveness of the Russian and European higher education systems.

## Conclusion

The methodological and theoretical basis of the research was the works of the classics of economic theory, the work of domestic and foreign scholars on the problems of education, the evaluation of investments in the development of human capital, the formation of the "knowledge economy" and the functioning of the market of educational services.

Human capital in almost all countries exceeds half of the accumulated national wealth. This shows the level of development of the country and the differences in material well-being. The growth of the role of human capital is associated with the increase not only in the value of the cumulative worker but also of the increase in individual incomes as a result of improving the educational, professional and other personal qualities of individuals. This is due to the individual value and productivity of labor (for example, an employee with a higher or secondary education) and is reflected in wages and other incomes. At the same time, the value of human capital with the accumulation of knowledge and experience increases over the years.

In the second half of the twentieth century, the development of countries most strongly manifested the trend towards economic integration. Neither the confrontation between the two systems nor local conflicts (political, military) could stop the process of uniting markets: goods, capitals, labor. When creating a labor market whose quality depends on the level of the educational services provided, not only positive results were revealed, but also certain difficulties caused by the difference in approaches to the organization and quality of educational services. The Western market of professional educational services, where the systems of the countries of the European Community, the USA, Japan, and Australia compete, has already formed. For Russia to enter this market, it was necessary to reform the system of higher education on the basis of the Bologna Declaration. Russia's participation in international programs and studies evaluating achievements in the field of education from 2000 to 2016 made it possible to determine both the strengths and weaknesses of domestic education. All this contributed to the integration of the Russian market of educational services in the European market of educational services. And now it is evaluated as a successful project, which gives a positive result for all participants.

# 3.2.
# PUBLIC GOODS AND THE GOVERNANCE OF HIGHER EDUCATION

ELENA DRUICA*, CALIN VALSAN**

## Introduction

Universities are and have always been a very special type of institution. They first appear during the Middle Ages, evolving from ecclesiastic establishments, adopting some of the characteristics of the early corporations along the way. It is worth noting that during the Middle Ages, the Catholic Church was the main repository and creator of knowledge in the Western World. The heliocentric theory of the solar system and many other early scientific discoveries would have not been possible without its intellectual and economic support. Whether the Church was always pleased with the findings that came with the scholarly research it sponsored is an entirely different question. The distinction between rational understanding and divine revelation as two alternative paths to knowledge has been settled early on. Academia is the direct result of that process.

While it is widely understood that higher education is special, it is often difficult to articulate why in a clear and consistent manner. The key to understanding its character lies in the nature of its output. Higher education was special from the very beginning and continues to be so because it belongs to the knowledge economy. The knowledge (or the new) economy is a term that economists and sociologists have used with increasing generosity and enthusiasm in the last decades or so. Of course, knowledge, communication, and culture have been the staples of economic and social development since the dawn of humanity. But until recently they have been but a catalyst for progress.

During the industrial revolution, the smokestack corporation has made good use of knowledge to deliver industrial goods on a mass scale. During modern times, a more sophisticated smokestack corporation makes excellent

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use of knowledge and continues to deliver industrial and consumer goods on a mass scale. The process goes like this: raw materials and other tangible goods are used as inputs to be processed into more valuable goods with the help of the best technological knowledge available. Here, knowledge transforms and adds value to goods and products. The university, however, is very much unlike the smokestack corporation. It does not use tangible goods as inputs to be processed into more valuable tangible goods and services. Universities use knowledge, communication and culture as inputs in their own right. It follows that the output consists of knowledge, communication, and culture as well.

How is knowledge different from tangible goods? The first difference is obvious: knowledge represents an abstract asset. From here follow other characteristics. While tangible goods are in general rival and exclusive, knowledge, communication, and culture are non-rival and non-exclusive. A tangible good such food cannot be shared without foregoing some or all of its utility. When shared, however, knowledge, communication and culture gains more currency, and thus more value. Sharing it is beneficial for everyone. Moreover, it is very difficult to stop the spread of knowledge, communication, and culture. It can be done in principle, but at a very high cost in terms of money and human suffering, and history shows there is no guarantee of achieving this disgraceful goal. Knowledge is not to be confused with information, which can be and sometimes does become private property.

As users and creators of knowledge, universities belonged to the post-industrial economy even before the dawn of the industrial era. The concept of post-industrial economy gained currency starting from the late 1960s and early 1970s (Bell, 1974). It is also referred to as the new economy, or the knowledge economy. Benkler (2006) defines it as a stage of social organization in which the bulk of economic output is represented by human knowledge, culture, and communication. Human and social capital always mattered, even before, during, and after the industrial revolution. While back then it needed tangible assets (raw material and tools) and financial capital to add value to the economic output, in the new economy it has become a stand alone resource; everything else revolves around it.

Due to the particular nature of resources, inputs, and outputs, the knowledge economy requires teamwork. Certain outcomes are not directly and objectively measurable or observable by independent third parties, and as a result, teams are more suitable when it comes to evaluating their peers (Baker *et al.*, 1988). Because economic activity moves more and more towards knowledge-based goods and services, and around complex production processes that are hard to measure and to prescribe beforehand, there are good reasons to believe that knowledge production and dissemination will function better on trust rather than on traditional hierarchies and autocratic rule (Drucker, 1999, Rajan, Zingales, 2000).

## On the Economic Significance of Higher Education

The key to understanding how universities operate, and how they are governed is to recognize that they provide a mix of public and private goods. The standard way of describing higher education focuses on *how* things are done. The usual approach is to divide the activities undertaken by Academia into four functional categories: teaching, service, research, and academic service (Paulsen, Feldman, 1995). An alternative approach is centered on what is being done (Valsan, Sproule, 2008, 2010). This latter approach is more insightful from an economic point of view because it takes into consideration the nature of the economic output. According to this view, the academic process creates objective knowledge; disseminates objective knowledge; invests in human capital; invests in social capital; and provides a credible signal of economic and social quality.

Knowledge creation and dissemination are by far the most important processes associated with Academia. They bring about technological advances, economic growth, cultural continuity, and social progress (Romer, 1986 and 1990). In order to preserve our much cherished social democracies we need to maintain the continuity of our knowledge base at all levels, and higher education ensures this is done even at the frontier of our understanding of the world. Knowledge makes sense of our environment and maximizes the probability of informed and responsible choices, by making possible a wide range of viable options and meaningful alternatives (Veblen, 1918, Popper, 1972, Kamens, 1988, Milligan *et al.*, 2004).

Objective knowledge is a concept coined by the distinguished philosopher Karl Popper in the early 1970s. Objective knowledge refers to the body of knowledge consisting of widely accepted theories, idea, and concepts that can be found in the form of published articles, books or any other form of tangible support, virtual support, or even public consciousness and common wisdom (Popper, 1972). It is commonly accepted that objective knowledge is created by research and other scholarly activities, but it is equally true that if we view objective knowledge as a state of consciousness or disposition to act in a certain way, then we should also include teaching under the same umbrella. By definition, both teaching and learning create new knowledge.

Whether subjective or objective, knowledge has an important evolutionary function. As noted by so many philosophers and sociologists, natural selection also acts on competing abstract concepts, not only on competing living organisms. That is, knowledge, and the tangible assets it has generated represent exo-somatic adaptations that spare us from the dare consequences of our mistakes (Veblen, 1961, Habermas, 1968, Popper, 1972, Wisman, 1989).

The creation of knowledge is closely related to the level and quality of human capital. The stock of human capital that increases with the creation

of knowledge is arguably the most important economic resource available to us (Schultz, 1961, Becker, 1964 and Mincer, 1974, 1984).

We consider learning an important part of our personal development as human beings, and we see it as an attempt to better understand our condition. But we also have to acknowledge there are important economic and social spillovers. These spillovers are mediated by human action and greatly contribute to our well- being above and beyond the intellectual and spiritual rewards we derive from knowledge. The most notable effect of investing in human capital is the increase in productivity and economic growth (Romer, 1986 and 1990, Klenow, 1998, Connolly and Gottschalk, 2006, and Huggetta *et al.*, 2006). The human capital is also responsible for a higher standard of living and more wealth in general (Barro, 1991, Benhabib and Spiegel, 1994, Psacharopoulos, 1994, Dinopoulos and Thompson, 2000, Jones, 2001), Bassanini and Scarpetta (2002). There is no coincidence that that the countries that had a successful transition through the industrial period and into the post-industrial era, are the ones that have invested heavily in education and training. Investment in human capital is the gateway to reducing the economic gap between rich and poor countries. Even common wisdom holds that education can lift society out of poverty.

Economic benefits occur at all levels and take many forms. There is research showing the funding of education to be a very lucrative investment indeed. It has been estimated that for many jurisdictions, including central and local governments, the present value of future increases in tax revenues from higher earnings far outstrips the cost of funding universities (Trostel, 2004). Obviously, increased tax revenues go towards the funding of other social programs and thus should count as public goods.

The output of higher education has a private component as well. On the one hand, individual employers, many of them private corporations or businesses, directly benefit from the increase in the stock of human capital associated with hiring university graduates. Universities save them millions of dollars in education and training expenses, and many other millions of dollars in opportunity costs. On the other hand, university graduates themselves stand to benefit from increased earning power, a higher social status and a more fulfilling professional career. Several economists argue that education is one of the best explanatory variable of earning power (Ashenfelter and Rouse, 2000). There is no definitive consensus on whether higher education ads value or if it merely certifies the already-existing abilities of incoming students (Taubman and Wales, 1973), Murnane *et al.*, 1995); it is generally agreed, however, that regardless the mechanism at work here, the private return to higher education is somewhere between 6% and 10% per annum for each additional year of schooling (Ashenfelter and Krueger, 1994, Kane and Rouse, 1995, Ashenfelter and Rouse, 1998).

Last but not least, universities provide an important economic signaling function. Private and public employers alike benefit from the information broadcasted by university graduates, when they obtain their degrees. Yet again, higher education is able to save millions of dollars in opportunity costs for private employers, simply by pointing to them the high quality job applicants (Griliches and Mason, 1972, Spence, 1973).

## Shareholder Capitalism and the Challenges of Corporate Governance

The governance approach to academia varies geographically and culturally, but there is one common factor to be acknowledged. In order to be effective, any governance approach must take into account the complex nature of the academic output. In other words, it has to balance the requirements imposed by the provision of public goods with those imposed by the provision of private goods. At times, there are tensions and even conflicts of interests between the two, a situation that is mirrored in the way universities are governed.

Corporate governance strives to answer three important questions: Who is control, whose interests prevail, and how to measure the economic surplus to be distributed to the various stakeholders. In all three respects, academia is different from the smokestack corporation in very significant ways.

The modern, publicly held corporation has emerged following the separation between ownership and control. The providers of capital, that is the shareholders, specialize in risk bearing and are willing to part with their funds who are entrusted to the manager, because they do not wish to invest additional time and effort in running the company. It is the manager who specializes in the administrative allocation of resources in the process of running the corporation. It is not hard to see that shareholders are facing a major moral hazard. Once the capital has been invested, there is a real danger that they would not receive a fair rate of return. In order to mitigate this hazard, the doctrine of shareholder capitalism proposes that shareholders retain residual rights of control and that the manager be running the corporation with the aim of maximizing the market value of shares. The nexus of control lies with the board of directors who are elected by shareholders to run the company and monitor the officers of the corporation. This entire concept is made palatable by the fact that the output is tangible, or at least, directly observable and relatively easy to measure from an economic point of view; it is also made possible by the fact that the main form of capital used is financial capital that lends itself to being transferred from the providers of capital to the manager.

The typical corporation produces goods and services that can be counted, priced, and sold. The manager tries to internalize all the benefits and externalize the costs associated with the economic activity of the firm. In the end, the economic result is the difference between the economic benefits that can be internalized, and the costs that could not be externalized. This result is then shared among the various stakeholders of the firm, with the shareholders as residual claimants.

A corollary of this situation is that corporate governance has to minimize the conflict of interests among stakeholders in order to increase the size of the economic surplus to be shared. Among the more notable conflicts of interests, one has to mention that between shareholders and management; and that between large, controlling shareholders, and smaller minority investors. In North-America, corporate governance has historically embraced shareholder capitalism and proceeded to curtail the power of large shareholders. The opportunity cost of this approach has been to give more power and independence to managers. Other countries have perceived managerial abuse as the most damaging alternative, and have chosen to restrain the power of the manager by giving more power to large shareholders and other stakeholders. The emerging paradigm in corporate governance, however, posits that the best way to protect the capital invested by shareholders is by granting them residual rights of control, thus the current prevalence of shareholder capitalism.

When there exists a separation between ownership and control, and the economic output can be measured in a more or less objective manner, one of the more effective methods for allocating resources within the corporation is managerial discretion and administrative fiat. Therefore, another corollary resulting directly from the nature of resources and economic output has been the hierarchical structure of the governance and management.

It is a fact of life that the presence of conflicts of interests characterizes every form of economic organization; in fact, it is a constant of human interaction, because economic agents compete for resources and survival. There is no corporation in this world that represents a monolithic entity, in spite of the legal framework that binds everyone together, and in spite of common economic interests. Every organization is a network of individual economic agents who enter temporary contracts allowing them to cooperate in order to compete more effectively against other economic agents, and thus pursue more effectively their individual (conflicting) economic interests. Local cooperation inside the corporation is aimed at extracting an economic rent; the existence of an economic surplus, that is, a positive sum game, is what makes collective action possible[20]. Most dysfunctional

[20] Axelrod (1997), (2006) and Axelrod and Hamilton (1981) have used game theory simulation to inquire about the nature of Evolutionary Stable Strategies (ESS). The authors

organizations owe their predicament to the lack of a positive sum game, or to the perception of a lack of a positive sum game.

Corporate governance deals with the issues of control, hierarchy of claimholder priority, and the measurement of economic result. The three major questions raised by corporate governance are more difficult to answer in the case of university governance. As it will be explained later, the question of control is complicated by the nature of the main economic resource, that is, human capital. From here, the potential conflicts of interests among various claimholders become more subtle and difficult to manage. The difficulties associated with measuring the economic result have been already mentioned earlier.

## The Governance of Higher Education

Academia is in a delicate situation because one cannot directly observe and measure its economic output, and because it relies in a very large part on human capital. As noted earlier, its output is a mix of public and private goods, almost all of them intangibles. To make things more difficult, inputs are much more manifest and easier to measure. Unlike the classical smokestack corporation, academia is in a situation where it internalizes most of the economic costs and externalizes most of the economic benefits it generates. This is, no doubt, the opposite of what might be considered an ideal situation.

Several economists have stressed the agency costs associated with large, publicly owned corporations. Because of dispersed ownership, individual shareholders have very little incentive to incur alone substantial costs in monitoring the manager while the benefits of monitoring are shared with all other claimholders. this is known as the free-rider problem (Jensen and Meckling, 1976, Fama, 1980, Schleifer and Vishny, 1997).

In the case of the smokestack corporation, the hierarchy of claimholder priority and conflicts of interests are driven by the separation between ownership and control, made possible in turn by the nature of financial capital. As already mentioned, higher education deals with knowledge, the main trait of human capital, and the main economic output. This is precisely where the separation between ownership and control becomes problematic.

Like any other organization, the university is an economic network. Faculty members and other academics are quintessential to the good functioning of university because they represent the main technological resource

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recognized that individuals are constantly engaged in Prisoner's Dilemma games. Axelrod noticed that, from a large group of game strategies, the emergence of a cooperative ESS was conditional on repeat interaction over a period of unknown duration.

(Waugh, 1998). They are granted tenure in order to encourage them to specialize their human capital. The human capital of academics, just like any other firm-specific capital, eventually becomes tied-up with the university, and becomes subject to the vagaries of economic outcomes.

In the case of the smokestack corporation, shareholder rights are present to shield shareholders against expropriation by other interest groups (Jensen and Meckling, 1976, Fama, 1980); otherwise the entrepreneur would not agree to specialize his/her capital. In the same vein, tenure represents for the academic a form of protection against expropriation by other opportunistic agents. Tenure and its companion, academic freedom, are not guaranteed life-time employment, as some people might think, but rather a reinforcement of one's right to self ownership, that allows the academic to proceed with his/her specialized firm investment (Brown, 1997, McPherson and Winston, 1983, Carmichael, 1998). Human capital requires a special type of protection for the simple reason that it cannot be managed just like a piece of equipment (Valsan, 2009). There is no legitimate way in which the separation between (human) capital and control can take place here, unless we admit the possibility of mind control and even slavery. This is precisely why human capital is not shown on the balance sheet of the corporation, let alone that of the university.

Just like any other shareholders, academics should retain some measure of residual control because they supply the most essential form of capital, that is, human capital. The actual form in which residual control is manifested begins with engagement in the governance of the university (Grossman and Hart, 1986; Hart and Moore, 1988, 1990), which leads to a collegial governance structure.

Human capital, however, is not the only form of capital required, because academia also needs tangible assets: buildings, labs, technology, facilities and many others. In order to acquire all these assets, taxpayers and private donors need to provide financial capital. It follows that higher education has two categories of residual claimants: the professors and other academics who provide the highly specialized, firm-specific human capital; and taxpayers and donors who provide the lesser firm-specific tangible assets. The smokestack corporation exhibits a classical example of conflict of interests, between large block-holders and minority investors, on the one hand, and between shareholders and managers, on the other hand. It is not hard to see that in academia too, there is a potential conflict of interests between the providers of human capital and the providers of financial capital. This conflict of interests can be quite severe because the intangible nature of academic output and the lack of meaningful metrics of performance makes it easier for faculty and administrators to expropriate taxpayers and donors (Baker *et al.*, 1988).

The academic community is naturally a moral, self-regulated community, in which implicit rules and contracts are not directly observable by third

parties. It is relatively easy for opportunistic interests groups and individuals to mimic commitment to its values and eventually crowd out authentic academics. Academia is also vulnerable to the patronage of intellectual elites, that is, groups or individuals who pursue their own moral, political, scientific, or cultural agenda by stifling free-thinkers, silencing dissenters and censoring debate.

Even academics themselves can become oppressive when they impose views and beliefs in order to ensure their intellectual patronage over the rest of the community. Steven Pinker (2002) recounts how in the late 1960s and early 1970s, any view that was out of sync with Emile Durkheim's (1962) anti-reductionism was dismissed and criticized as reactionary and even fascist. All dissenters were discredited, boycotted, and bullied. For example, a relatively influential group of intellectuals comprised of American paleontologist, evolutionary biologist, and historian of science Steven Jay Gould, geneticist Richard Lewontin, and anthropologist Marshall Sahlins tried to discredit Edward O. Wilson (1975), and Richard Dawkins (1976).

Another famous case involves Austrian economist Friedrich von Hayek who received the Nobel Prize in 1974, and was acknowledged as one of the most preeminent social thinkers of the 20th century. In the period immediately after World War II, Hayek found himself without a teaching job in Europe because his free market approach was at odds with Keynesian economics. He eventually emigrated to the United States and in spite of strong opposition from faculty members who disliked his philosophy, he was eventually hired by the University of Chicago, but not as an economists.

## Academic Capitalism

The professionalization of the management in higher education in North America, Europe, and elsewhere has been a hotly debated and contested topic (Birnbaum, 2000, Lohmann, 2004), because it threatens academic freedom and autonomy (Waugh, 1998). This trend has seen the introduction of measures of operating performance, standards for quality assurance, and increasing the organizational focus (Mahoney, 1997). More recently, the managerial impetus has moved higher education in the direction of cost management, customer satisfaction, and corporate image (Lazerson 1997, Dearlove 1998). Academics are complaining now more than ever that they have become glorified customer service workers, while administrators seek customer-centered strategies and cost management policies in order to extract managerial rents and a lavish life-style, rich in corporate perks (Murphy *et al.*, 1993, Bebchuk, 1999, Bebchuk, *et al.* 2002).

Those who have witnessed the opportunism of academics welcome the rise of managerialism in higher education as an attempt to control and reduce

moral hazards and agency costs, by instilling administrative authority and hierarchical rule. However, it is the nature of residuals that is responsible for all these agency costs, not collegial governance. The danger here is that if academia remains publicly funded while embracing the private good, the manager and the academics might collude in order to expropriate the taxpayers (Fama 1980, Schleifer and Vishny, 1997).

We have argued that higher education delivers mainly public goods, hence it has to externalize a significant fraction of the economic result; at the same time, it internalizes the majority of the costs associated with the production and delivery of public goods. Moreover, while the costs are directly measured and incurred immediately, the benefits are hard to ascertain, measure, observe, and taxed. This is why a significant proportion of modern universities operate as nonprofit corporations (Hansmann, 1980, Rushton, 2007). Since the economic result is not internalized and there are no monetary residuals to be distributed privately, one begs the question of how is even conceivable that collective action might take place in the absence of a profit motive. It would be unrealistic and disingenuous to assume that academics are less selfish than other economic agents, and would participate in a zero, or negative sum game; but it is reasonable to assume that this selfishness might have a slightly different form of manifestation than usual. Hansmann (1980) shows that social capital based on trust lowers the cost of collective action. There is no organization that can do completely without trust and social capital. While arm's length contracting, administrative fiat, and trust are complementary, administrative authority alone is clearly not sufficient. This is even truer for higher education than for a majority of other corporations.

How is the social capital generated in academia, given that academics are individualistic and selfish? To those familiar with how universities operate, it is perhaps clear that in a certain sense that higher education is a sectarian community in which its members are individualists at heart. In the same vein, academics are no different than the ascetic protestants discussed by Max Weber (1987) and Francis Fukuyama (1996).

The individualism of academics is, however, of a particular breed. Like the protestants, they have a direct relationship with an ultimate form of authority, and accept no institutional or political mediation (Trow 1998). Unlike the protestants, this authority is impersonal and it represents the moral basis for questioning other forms of local authority. The aforementioned individualism is constructed around objective knowledge gained through a rigorous process, and it represents the only accepted source of authority.

It is worth noting how academics view the place in which they work. They do not refer to it as an "institution" or "organization"; most times they call it a community of scholars. It is precisely this common belief that no one is above objective knowledge that defines the academic moral community

and drives the individualism of its members. Many outside and even inside academia view universities as dysfunctional places, in which academics jealously defend their own turf and quarrel over trivial matters. This picture is deceiving, because beyond the drama, academics band together in order to defend their fortress against barbarian invasions. In spite of their militant individualism, or rather in the name of preserving this individualism, academics have become experts in political alliances and teamwork. Unlike in other walks of life, the socialization of academics has been and continues to be a voluntary process, grounded in one's inner conviction. As Fukuyama (1996) points out, voluntary associations have been and are more vulnerable to a certain type of opportunism and free ridding. However, they generate an authentic form of commitment, notwithstanding the fact they can break up more easily than those subject to administrative constraints. Moreover, the more difficult to attain the standards for becoming part of the group, the stronger the bonding among its members.

This is exactly what happens with academics. Obtaining a Ph.D. is a long, arduous and grueling process, and the attrition rate along the way is significant. Doctoral candidates are expected to learn the required analytical skills and methodology, but they also have to embrace an entire paradigm of ethical and moral values that characterize the process of knowledge discovery. In other words, academics have to dedicate themselves to the production and dissemination of public goods. Just like the open source community, academics profess an ethical code that values the provision of unconfined public goods (Paulsen and Feldman, 1995). Over a period of four to six years or even more, the Ph.D. candidate has to endure a life of asceticism and continuous hard work, a regime that the average individual would most likely consider draconian and tyrannical.

Unlike shareholders and other investors who require a monetary return in the form of dividends, interests, and capital gains, academics seek a different kind of payoff. They are akin to performers, writers, journalists, and politicians who prefer social recognition and even celebrity. It is worth noting that individuals who achieved great wealth, like Rockefeller, Carnegie, Bill Gates, and many others became patrons of the arts, the sciences, the culture, or benefactors. It is quite common for tycoons to endow colleges and universities in order to enhance their social status.

That intellectual excellence represents a fast lane to social status comes at no surprise. It is simply a conduit for return on human and social capital. The initial investment, however, is quite considerable because it makes the subject of constant public scrutiny and evaluation, ensuring that opportunists and those who mimic commitment would be contained. While opportunists can never be completely expelled, promoting an academic community dedicated to the delivery of public goods is one of the best mechanism for controlling agency cost. True prestige and notoriety are the result of genuine

intellectual legacy, which cannot be prescribe in advance, but is recognized after the fact, that is, in the long run.

Academic capitalism and managerial discretion proclaim the supremacy of free markets and condone all the trappings of the corporatist model, such as re-structuring, downsizing, cost-management and the like (Dearlove, 1998). It is tempting to believe that academic capitalism is synonymous with managerial discretion; and that managerial discretion is a conduit for market forces. But this is a mistaken view. The truth is that managerial discretion and free markets are at the opposites ends of the spectrum. The market allocates resources using the impersonal mechanism of relative prices as a conduit; in a hierarchical corporation, bureaucrats allocate resources through administrative decisions (Williamson, 1975).

## Managerialism in Higher Education, and a Few Concluding Remarks

It is interesting to note that managers promote a corporate governance model revolving around accounting conventions and administrative directives, yet they invoke free markets. When equating market demand with students' preferences it becomes easy to confuse market forces and managerial discretion. The market of the university is not limited to prospective and current students, but encompasses the entire society. If university administrators focus solely on providing students with a narrowly defined private good, the rest of the market will incur significant negative externalities. Social and economic feedback is very slow. While changes in student enrollment and funding are easy to spot and measure, it takes a very long time to undo undesirable social and economic changes brought about by misguided policies.

Like all individuals, academics and managers alike are sensitive to economic and moral incentives (Jensen and Murphy, 1990). For academics, these incentives include measures of research proficiency, such as the number of publications in indexed journals, number of citations, ranking scores, teaching evaluations and many others. For managers, the incentives pertain to enrollment numbers, funding levels, satisfaction surveys and rankings, etc. Managers and academics alike seek institutional arrangements and governance schemes that match their skills and strengths because this allows for job security and many other perks (Murphy *et al.*, 1993, Bebchuk, 1999, Bebchuk *et al.*, 2002).

The dangers of academic managerialism are not negligible. It can easily deplete the stock of social capital and trust, that is, the foundation on which academia functions, because academic autonomy is more or less undermined by measures of operating performance and quality assurance. While the administrators become star-performers (Dugger, 1989), faculty members are

assigned to the more mundane role of salesmen, mass-producing graduates and publications, in a framework that praises quality but rewards quantity. In theory, most universities are expected to pursue the greater good, however, in practice, operational efficiency takes precedence over intellectual excellence.

The paradox is that when university governance appears to function well, there is a greater probability that the main stakeholders of academia, that is, administrators, faculty, and students are in fact colluding at the expense of taxpayers (Sykes, 1998).

The much-praised academic capitalism (Slaughter and Leslie, 1997, Slaughter and Rhoades, 2004, McNay, 1999) could lead to the expropriation of taxpayers and donors, as feared by public choice theorists (Buchannan and Tullok, 1962). However, complaints about the commercialization of higher education are not new (Waugh, 1998, Lohmann, 2004). Thorstein Veblen (1918) articulated very similar concerns and grievances over a century ago.

# 3.3.
# METHODOLOGICAL AND ETHICAL ASPECTS OF RESEARCH IN EDUCATION

ANNA TURCZAK*

## Introduction

The root of the word 'science' is the Latin *scientia*, which simply means 'knowledge'. The purpose of science is understanding the world. Scientists describe what they see, discover regularities, and formulate theories (Babbie, 1990).

Over time, science results is an accumulation of specific findings, theories, and other knowledge. In this sense, science is said to be progressive. When researchers conduct new research studies, they try to build on and extend current research theories and results. At the same time, science is dynamic and open to new ideas and theories that show promise. Different researchers approach research differently, and they often describe, explain, and interpret things in different though often complementary ways. Consequently, science is a never-ending process (Johnson, Christensen, 2012, p. 15).

Science offers a set of logical, systematic, documented methods. In educational research the scientific methods are used to investigate teaching and learning. Also the knowledge produced by these investigations can be named educational research.

Education is a broad field that includes many different research areas. Since educational research builds on the methods of science, it relies on logical and systematic methods to answer a variety of questions, and it does so in a way that allows others to inspect and evaluate it.

Educational research at present is marked by three qualities – it is eclectic, dynamic, and essential. Eclectic means coming from many sources. Indeed, many disciplines and schools of thought contribute to educational research. Dynamic, in turn, means rapidly developing, with new ideas and

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methods emerging on a regular basis. Educational research is also recognized as necessary for the optimal evolution of schooling.

Educational researchers strive to fulfil three goals: validity, authenticity, and practical significance. Validity refers to the accuracy and trustworthiness of instruments, data, and findings in research. Nothing in research is more important than validity (Bernard, 2013, p. 45).

Authenticity is also a worthy goal for all educational research endeavours. An authentic understanding of an educational process or educational setting is one that reflects fairly the various perspectives of participants (Gubrium, Holstein, 1997).

Researchers have an obligation to ask questions and produce conclusions that are in some way useful to others, particularly to moving forward the collective enterprise of teaching and learning (Check, Schutt, 2012, p. 39). Thus, practical significance is a very important goal for educational researchers.

Research ethics are a guiding set of principles that are to assist researchers in conducting ethical studies. E. Diener and R. Crandall (1978) have identified three areas of ethical concern for all social and behavioural scientists: (1) the relationship between society and science, (2) professional issues, and (3) the treatment of research participants.

The ethical problem regarding the relationship between society and science revolves around the extent to which societal concerns and cultural values should direct the course of research. The category of professional issues includes the expanding problem of research misconduct, i.e. the fabrication, falsification, or plagiarism in proposing, performing, or reviewing research or reporting research results (Johnson, Christensen, 2012, p. 101).

However, treatment of research participants is the most important and fundamental issue that researchers confront. This is because conduct of research with humans has the potential for creating harm. Before a person can participate in a research study, the researcher must give the prospective participant a description of all features of the study that might reasonably influence his or her willingness to participate.

Finally, educational research requires ethical consideration at all stages: in the decision to research one topic over another, in choosing one method over another, in the conduct of data collection and analysis, and in the dissemination of findings (as well as in limiting the dissemination of such identifiers as might damage research participants).

## Research design

Objects are the persons, places, or things on which research is done. The object is also called the unit of analysis. Usually, the objects of a study in educational research are people or persons (pupils, students, teachers), but

they can be places such as schools, or they can be things such as curriculum programmes (Hoy, 2010, p. 30).

Properties are the characteristics or attributes of an object. A variable is a property that takes on different values. The value represents either magnitude of the variable (e.g. the length of a school day or school year) or a category of the variable (e.g. male or female). A variable must have at least two values (unlike a constant which has only one value).

Research methods vary, but the goal of research is almost always the same: to answer a question or a group of related questions. The questions may range from 'What is A like?' to 'Does A cause B?'. Educational research answers questions important to pupils, students, teachers, administrators, parents, and other stakeholders (Boudah, 2011, p. 2).

Research is a broad term that means the systematic and rigorous process. The usual steps of the process are as follows:

- ❑ selecting a research topic and identifying a research problem;
- ❑ formulating a focused question;
- ❑ determining what is already known about the problem and question;
- ❑ developing a hypothesis;
- ❑ collecting and analysing relevant data;
- ❑ drawing conclusions;
- ❑ sharing the conclusions with others.

As stated above, the first step in conducting a research study is choosing a research topic and then identifying a research problem in need of a solution. It is worth emphasizing in this context that the field of education has numerous problems that are really in need of solutions (Johnson, Christensen, 2012, p. 82).

Research questions should be clear and specific. They also should be feasible (i.e. within the time and resources available), educationally important, and scientifically relevant (King, Keohane, Verba, 1994).

Researchers must be able to conduct any study within the time and resources they have. If time is short, questions that involve long-term investigation may not be feasible. Another issue is whether any additional resources will be available, such as research funds or other researchers to collaborate with. It is obvious that there are severe limits on what one person can accomplish.

The constraints faced due to schedules and other commitments, as well as skill level also have to be taken into account.

Educational research is not a simple undertaking. Thus, the expenditure of effort and resources should be focused on a substantive areas. The key issue seems to be whether the research is important to other people and whether an answer to the research question makes a difference for society or for educational relations.

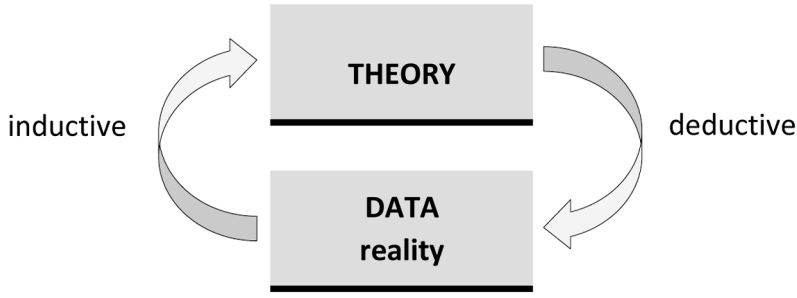
Every research question should be grounded in the educational research literature. Whatever question was formulated, it is a must to turn to the relevant literature first to find out what already has been learned about this question.

Conducting a thorough search of the literature and then reviewing critically what has been found is an essential foundation for any research project.

What should be particularly emphasized is that educational research relies on analytic thinking, and one important element of analytic thinking is avoiding errors in logic. Readers have a right to expect rigorous thinking in research articles. Errors in thinking can occur in the way a research question is constructed, the methods used to carry it out, or the conclusions the researcher draws (Check, Schutt, 2012, p. 6).

In general, to conduct educational research means to attempt to connect theory with empirical data – the evidence obtained from the educational world. Researchers may make this connection by starting with an educational theory and then testing some of its implications with data. This is the process of deductive research. Alternatively, researchers may link educational theory with data by first collecting the data and then developing a theory that explains patterns in the data. This is the inductive research process (see Figure 1).

**Fig. 4. The links between theory and data**




Source: own compilation based on (Check, Schutt, 2012, p. 34).

As Figure 1 shows, in deductive research, a specific expectation is deduced from a general theoretical premise and then tested with data that have been collected for this purpose. In contrast to deductive research, inductive research begins with specific data, which are then used to develop a general explanation (a theory) to account for the data.

Most educational researchers use both inductive and deductive reasoning when they conduct research. For example, they use inductive reasoning when they search for patterns in their particular data, when they make generalizations from samples to populations, and when they make inferences as to the explanation. Researchers use deductive reasoning when they deduce from their hypotheses the observable consequences that should occur with new empirical data if their hypotheses are true. Researchers also use deductive reasoning if they conclude that a theory is false (Johnson, Christensen, 2012, p. 33).

## Variables and levels of measurement

Conceptualization is the process of specifying what is meant by a term. Concepts are operationalized in research by one or more indicators, or measures. Operationalization is the necessary link between conceptualization and measurement.

A variable is a property that can take more than one value. Values can be words or numbers. Generally speaking, research is about variables (that is about characteristics of people, organizations, countries, or other units of analysis) and how variables are related to one another.

A variable is always defined at some level of measurement. The four levels of measurement can be ordered by complexity of the mathematical operations they permit: nominal (least complex), ordinal, interval, and ratio (most complex).

The nominal level of measurement, also called categorical level, identifies variables which vary in kind or quality but not in amount. The values of a nominal variable comprise a list of names. For gender, obviously, one can assign the numeral 1 to men and 2 to women, but gender will still be a nominal variable. Clearly, the number 2 happens to be twice as big as the number 1, but this fact is meaningless with categorical variables. Moreover, it is impossible to add up all the 1s and 2s and calculate average sex (Bernard, 2013, p. 41).

The values for a nominal variable must be exhaustive and mutually exclusive. Exhaustive means that all possible categories have been named and therefore each object can be assigned a value. In turn, mutually exclusive means that each object can have one and only one value (i.e. objects cannot belong to more than one category at a time).

Like nominal variables, ordinal variables are also exhaustive and mutually exclusive, but they have one additional property: their values can be rank ordered, but this order does not have equal intervals between items (Alreck, Settle, 2004). For example, any variable measured as high, medium, or low is ordinal.

Scales of opinion – like 'strongly agree', 'agree', 'neutral', 'disagree', 'strongly disagree' – found on so many surveys are the values of an ordinal variable. The variable measures an internal state, agreement, in terms of less and more, but not in terms of how much less or more. This is the most important characteristic of ordinal measures: there is no way to tell how far apart the attributes are from one another. A person who 'agrees strongly' with a statement may agree twice as much as someone who says they 'agree', or ten times as much, or half again as much. There is no way to tell (Bernard, 2013, p. 42).

Interval variables have all the properties of nominal and ordinal variables. They are an exhaustive and mutually exclusive list of values, and the values

have a rank order structure. They have one additional property, as well: the distances between the values are meaningful. To exemplify, the difference between an IQ score of 80 and 90 is the same (i.e. 10) as the difference between one of 150 and 160. On the other hand, a person who has an IQ of 135 is not 50% smarter than a person with an IQ of 90. That is because a variable, at the interval level of measurement, has no true zero point. Therefore, numbers can be added and subtracted, but ratios of them – for instance 160 to 80 as 'twice as much' – are not meaningful.

Ratio variables are interval variables that have a true zero point – that is, the value 0 that measures the absence of the phenomenon being measured. Values of ratio variables can be added and subtracted, and because the numbers begin at a true zero point, they can be multiplied and divided (so ratios can be formed between the numbers). Consequently, 20 is 4 points higher than 16 and is also 2 times as great as 10. Some examples of ratio variables include: age, number of years of education, number of times a person has changed their residence, income, population size. Undeniably, a person who is 50 years old is 10 years older than a person who is 40, and a person who is 30 is 10 years older than a person who is 20. The 10-year intervals are identical. In addition, a person who is 40 is twice as old as a person who is 20; and a person who is 80 is twice as old as a person who is 40.

Interestingly, number of years of education is usually treated as a ratio variable, even though a year of primary school is hardly worth the same as a year of high school (Bernard, 2013, p. 43).

Table 1 summarizes the types of comparisons that can be made with different levels of measurement, as well as the mathematical operations that are legitimate.

**Tab. 6. Properties of measurement levels**

| Examples of comparison statements | Appropriate math operations | Relevant level of measurement | | | |
|---|---|---|---|---|---|
| | | nominal | ordinal | interval | ratio |
| **A** is equal to (not equal to) **B** | = (≠) | yes | yes | yes | yes |
| **A** is greater than (less than) **B** | > (<) | no | yes | yes | yes |
| **A** is three more than (less than) **B** | + (−) | no | no | yes | yes |
| **A** is twice (half) as large as **B** | × (÷) | no | no | no | yes |

Source: own compilation based on (Check, Schutt, 2012, p. 80).

It is always possible to turn a variable measured at the ratio or interval level into an ordinal or a nominal variable, but it is impossible to go the other way. This is why the general principle in research is to measure at the highest level of measurement possible.

## Sampling

The population is the entire set of individuals or other entities to which study findings are to be generalized. A sample is a subgroup of the population. Parameters are the characteristics of populations. Statistics are the characteristics of samples.

Researchers rarely have the resources to study the entire population that is of interest to them, so they have to select a representative sample of cases so that their findings can be generalized to the population of interest. A representative sample is a sample that 'looks like' the population from which it was selected in all respects that are potentially relevant to the study. The distribution of values among the elements of a representative sample is the same as the distribution of those values among the total population. Contrarily, in an unrepresentative sample, some characteristics are overrepresented or underrepresented (Check, Schutt, 2012, p. 95).

It is obvious that the more representative the sample, the better. Certain features of samples make them more or less likely to represent properly the population from which they are selected. In this regard, the crucial distinction about samples is whether they are based on a probability or a nonprobability sampling method.

Probability sampling methods rely on a random selection procedure to ensure no systematic bias. In a probability sample, the odds of selecting elements are known and every unit has an equal chance of being chosen for study. In a census of all the elements of a population, the probability that any particular element will be picked out is 1. If half of the elements in the population are sampled on the basis of chance, the probability of selection for each element is 0.5. As the size of the sample as a proportion of the population decreases, so does the probability of selection (Check, Schutt, 2012, p. 96).

There are several ways to take probability samples, among them: simple random sampling, stratified random sampling, and cluster random sampling.

Simple random sampling involves generating a list of random numbers and applying that list to a numbered sampling frame (i.e. a list of the population elements).

Stratified random samples are used to ensure that key subgroups are covered by a study. Most often, disproportionate stratified sampling is used

to make sure that important but relatively small subpopulations are included in a sample (e.g. disabled students).

Cluster sampling involves choosing given physical or geographic areas and identifying a certain number of units to be picked out from each area. For example, one can designate areas within the country as either city or rural areas and select a set number of participants from the different areas.

It is often impossible to do strict probability sampling under real research conditions. In these cases nonprobability sampling methods can be useful. Nonprobability samples are used, for instance, when it is difficult to identify all potential cases in the population. Some types of nonprobability sampling methods are: quota sampling, judgement (purposive) sampling, convenience (haphazard) sampling, and snowball sampling.

In quota sampling, the researcher decides on the subpopulations of interest and on the proportions of those subpopulations in the final sample. Quota sampling resembles stratified probability sampling, but respondents are not chosen randomly.

In judgment, or purposive sampling, there is no overall sampling design that tells the researcher how many of each type of elements is needed for a study. Thus, the units are selected according to the researcher's own knowledge and opinion about which ones they think will be appropriate to the topic area.

A convenience, or haphazard sample is a sample of participants who happen to be readily accessible to the researcher – particular individuals are selected simply due to ease of access. This technique is especially useful for pretesting questionnaires to make sure that the items are unambiguous.

In snowball sampling, the researcher locates one or more key informants and asks them to name others who would be likely candidates for the research. In fact, snowball sampling is a useful technique when a population is hidden or difficult to identify. Further, it is used in studies of social networks, where the objective is to find out who people know and how they know each other.

## Qualitative and quantitative research

The research design and methods must be appropriate to explore the initial research question in a satisfying way. The reality is that different types of research methods and approaches may work together coherently to achieve better understanding of a research question or educational situation.

One of the most common divisions in educational research is the distinction between qualitative research and quantitative research. Admittedly, both

qualitative and quantitative researchers collect data, but the data and the methods they use to analyse the data differ substantially. Pure qualitative research relies on the collection of qualitative data (i.e. nonnumerical data such as words and pictures). Pure quantitative research, in turn, relies on the collection of quantitative data (i.e. numerical data).

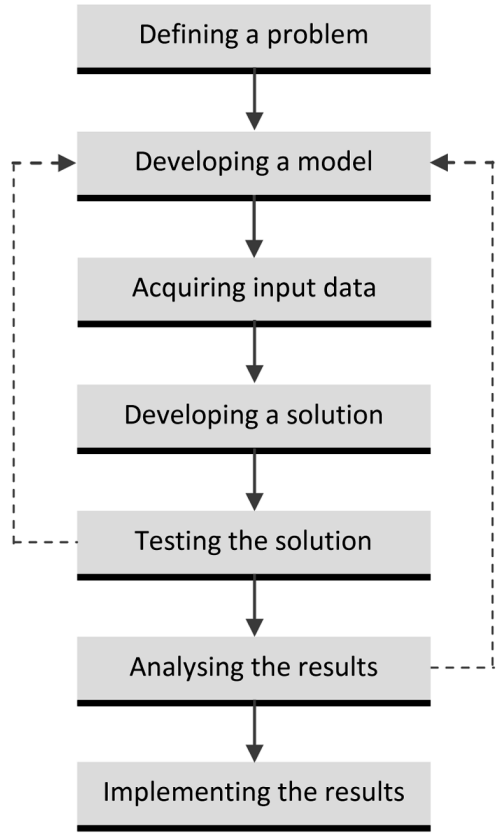
The selection of adequate research method always depends on the purpose of the study. However, W. K. Hoy (2010) argues that there should not be a sharp dichotomy between qualitative and quantitative research. According to this scientist, the two approaches are fully complementary, not competing. What is more, both are equally valuable for educational researchers.

Qualitative methods refer to several distinctive research activities:

- ❑ Participant observation is a method for gathering data that involves developing a sustained relationship with people while they go about their normal activities.
- ❑ Intensive (depth) interviewing is a method that involves open-ended, relatively unstructured questioning in which the interviewer seeks in-depth information on the interviewee's experiences, perceptions, and feelings (Lofland *et al.*, 2005).
- ❑ In the case of focus groups the method of unstructured group interviews is used and in those interviews the focus group leader activity encourages discussion among participants on the topics of interest. The purpose of focus groups is to use the interaction between a group of interviewees to generate discussion about a given problem. This discussion, it is hoped, will be more detailed and wide ranging than would result from a one-to-one interview (David, Sutton, 2011, p. 133).

It is easy to notice, anyway, that quantitative techniques are the ones that have been developing very fast recently and have been applied successfully to an increasingly wide variety of complex problems in education. The typical analysis in such quantitative study consists of defining a problem, developing a model, acquiring input data, developing a solution, testing the solution, analysing the results, and implementing the results (see Figure 8). However, it is worth adding that one step does not have to be finished completely before the next is started. In most cases one or more of these steps will be modified to some extent before the final results are implemented. This would cause all the subsequent steps to be changed. In some cases, testing the solution might reveal that the model or the input data are not correct. This situation could mean that all steps that follow defining the problem would need to be modified (Render, Stair, 1997, p. 3).

**Fig. 5. The quantitative analysis approach**




Source: own compilation based on (Render, Stair, 1997, p. 3).

The first step in the quantitative approach is to develop a clear, concise statement of the problem. This statement will give direction and meaning to the following steps.

Once the problem is selected, the next step is to develop a model. The accuracy of the solution depends on the accuracy of the input data and the model. All models should be solvable, realistic, and easy to understand and modify. Additionally, the required input data should be obtainable.

Analysing the results starts with determining the implications of the solution. In most cases, a solution to a problem will result in some kind of action or change in the way something is operating. The implications of these actions or changes must be determined before the results are implemented.

Because a model is only an approximation of reality, the sensitivity of the solution to changes in the model and input data is a very important part of the study. The sensitivity analysis shows how much the solution would change if there were changes in the model or the input data. It has

to be strongly highlighted here that before a solution can be implemented, it needs to be tested completely.

The final step is to implement the results. This is the process of incorporating the solution into reality. Unfortunately, this can at times be very difficult. Even in the case of an optimal solution, if decision makers resist the new solution, all of the efforts are of no value.

After the solution has been implemented successfully, it should be closely monitored. Over time, there may occur numerous changes that call for modifications of the original solution.

## Hypothesis testing

In quantitative research, the research question is often followed by a hypothesis. A hypothesis is a claim or statement about a characteristic of the entire population of interest (e.g. the value of a population parameter). Hypothesis testing is a procedure based on sample evidence and probability theory to determine whether the hypothesis is a reasonable statement and should not be rejected, or is unreasonable and should be rejected. In general, the logic of hypothesis testing involves setting up a null hypothesis, $H_0$, and an alternative hypothesis, $H_1$, and then trying to falsify the null hypothesis.

There is a five-step procedure that systematizes hypothesis testing. The steps are as follows (Mason, Lind, 1990, p. 358):

1. State null and alternative hypotheses.
2. Select a level of significance (that is the risk of rejecting the null hypothesis when it is actually true).
3. Identify the test statistic.
4. Formulate a decision rule.
5. Take a sample and arrive at decision (i.e. accept $H_0$ or reject $H_0$ and accept $H_1$).

A null hypothesis, $H_0$, is a hypothesis to be tested. An alternative hypothesis, $H_1$, is a hypothesis to be considered as an alternative to the null hypothesis. Thus, the problem in hypothesis testing is simply to decide whether the null hypothesis should be accepted, or rejected in favour of the alternative hypothesis (Weiss, 2012, p. 341).

The null hypothesis always contains a statement of equality ($=$). In turn, the choice of the form of alternative hypothesis depends on and should reflect the purpose of the test which is being carried out. Generally speaking, tests can be one-tailed or two-tailed. A test is one-tailed when the alternative hypothesis precisely states a direction ($<$ or $>$). In the left-tailed test the direction of the inequality sign in the alternative hypothesis points to the left ($<$), while in the right-tailed test the direction of the inequality sign in the alternative hypothesis points to the right ($>$). If no direction is specified

under the alternative hypothesis – it is the case of $^{1}$ sign – a two-tailed test is being applied (Sullivan, 2011, p. 457).

A decision rule is a statement of the conditions under which the null hypothesis is accepted or rejected. To accomplish this, the sample statistic distribution is divided into two regions, aptly called the region of acceptance and the region of rejection. The region of rejection defines the location of all those values that are so large or so small that the probability of their occurrence under a true null hypothesis is rather remote (Mason, Lind, 1990, p. 362).

Accepting the null hypothesis does not prove that $H_0$ is true – to prove without any doubt that the null hypothesis is true, the population characteristic would have to be known. To actually prove it, one would have to examine every item in the population and this is usually not feasible.

## CAUSATION

Educational research concerns, among other issues, defining variables, looking for associations among them, and trying to understand whether and how variation in one thing causes variation in another.

A cause-and-effect relationship is a relationship in which one variable affects another variable. Which is extremely important, association is not a sufficient condition for claiming a causal relation between two variables, but it is a necessary condition.

An independent variable is a variable that is presumed to cause changes to occur in another variable. Sometimes the independent variable is manipulated by the researcher (i.e. the researcher determines the value of the independent variable). At other times, the independent variable is studied by the researcher but is not directly manipulated (i.e. the researcher studies what happens when an independent variable changes naturally). The independent variable is an antecedent one because it must come before another variable if it is to produce a change in it.

A dependent variable is the variable that is presumed to be influenced by one or more variables. Thus, the dependent (i.e. consequent) variable is the one that is dependent on the independent variable (or variables).

Another type of a variable is an intervening variable. An intervening variable, also commonly called a mediating variable, is a variable that comes in between other variables, helping to delineate the process through which those variables affect one another (Johnson, Christensen, 2012, p. 38).

A causal effect is said to occur if variation in the independent variable is followed by variation in the dependent variable, when all other things are equal (*ceteris paribus*). The following statement exemplifies this kind of relationship: 'Frustration leads to aggression'. The presumed cause is 'frustration', and the presumed consequence is 'aggression'. Thus, in this example

of the cause-and-effect relationship, 'frustration' is the independent variable and 'aggression' is the dependent variable.

A researcher can be reasonably confident that one variable causes another if four conditions are met (Bernard, 2013, p. 51):

1. The two variables co-vary – that is, as scores for one variable increase or decrease, scores for the other variable increase or decrease as well.
2. The correlation between the two variables is not spurious.
3. There is a logical time order to the variables – the presumed causal variable must always precede the other in time.
4. A mechanism is available that explains how the independent variable causes the dependent variable (there must, in other words, be a theory behind this).

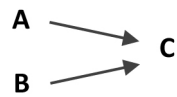
So, it turns out that – besides a nonspurious correlation – something else is required to establish a cause-and-effect relation between two variables: a logical time order. Figure 3 shows a few possible forms of time order between variables.

Furthermore, even when the researcher has established nonspurious relationship and a logical time sequence for two or more variables, a theory is needed – a mechanism – that explains the causation.

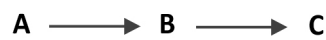
**Fig. 6. Time order between two or three variables**

(**a**) **A** is antecedent to **B**


(**b**) **A** and **B** are antecedent to **C**




(**c**) **A** is antecedent to **B** which is an intervening variable antecedent to **C**




Source: own compilation based on (Bernard, 2013, p. 54).

In some relations, it is clear which is the independent variable, and which is the dependent variable, but in others it is not. For instance, in a study of intelligence and achievement, it is more likely that intelligence influences achievement rather than the other way around (Hoy, 2010, p. 33). There are many relationships, however, in which the causation flows both ways – that is, the first variable affects the second variable, but then the second one influences the first one. This kind of relation is called a reciprocal causation.

## Forecasting

Decision makers in education are always trying to reduce uncertainty and to make better estimates of what will happen in the future. Accomplishing this is the main purpose of forecasting.

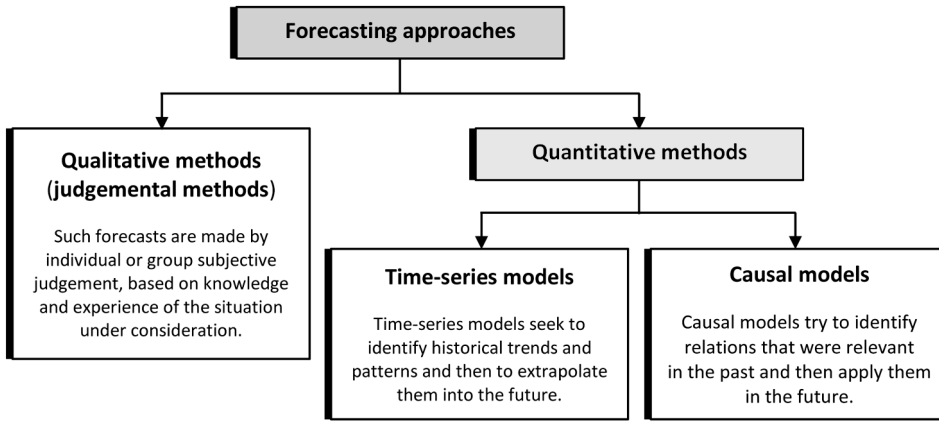
There are many ways to forecast the future. In numerous institutions (especially smaller ones), the entire process is subjective, involving intuition and years of experience. However, there are many quantitative forecasting methods – such as unweighted and weighted moving averages, exponential smoothing, trend projections, seasonality analysis, and causal regression analysis – which may turn out to be helpful.

Regardless of the model used to make the forecast, the same eight overall steps of forecasting that follow are used (Render, Stair, 1997, p. 174):

1. Define the purpose of the forecast.
2. Select the variable that is to be forecasted.
3. Determine the time horizon of the forecast (short time horizon, medium time horizon, long time horizon).
4. Select the forecasting model or models.
5. Gather the data needed to make the forecast.
6. Validate the forecasting model.
7. Make the forecast.
8. Implement the results.

All forecasting methods can be classified into one of two categories. These categories, shown in Figure 4, are qualitative methods and quantitative methods (including time-series models and causal models).

**Fig. 7. Forecasting methods**




Source: own elaboration.

Qualitative methods attempt to incorporate subjective factors into the forecasting. Opinions by experts, individual experiences and judgements may be considered. Qualitative methods are especially useful when subjective factors are expected to be very important or when accurate quantitative data are difficult to obtain.

Time-series models attempt to predict the future by using historical data. These models make the assumption that what happens in the future is a function of what has happened in the past. In other words, time-series models look at what has happened over a period of time and use a series of past data to make a forecast. The following methods are a few examples:

- ❑ unweighted moving averages;
- ❑ weighted moving averages;
- ❑ exponential smoothing;
- ❑ trend projections;
- ❑ seasonality analysis.

Unweighted moving averages, weighted moving averages and exponential smoothing are the simplest quantitative techniques of forecasting, but in their basic form they are useful only if it can be assumed that the variable studied will stay fairly steady over time.

As with time-series models, causal models also rely on quantitative data. However, causal models incorporate the causal variables that might influence the quantity being forecasted into the forecasting model.

## Ethics in educational research

Research affects people and that is why all research has an ethical component. The ethical dilemmas in educational research are particularly profound. Everything that is interesting as a potential research focus comes fully equipped with risks to the researcher and to the people studied. These are problems that cannot be ignored because researchers are responsible for all the consequences of their actions.

It is necessary to stress at the very beginning that ethics do not provide clear, agreed solutions. The main use of ethics is merely as a way and direction for exploring dilemmas in order to understand them more clearly and deeply.

In fact, many unexpected problems may arise during educational research. Foresight, well-thought-out contracts, and attention to ethical questions can all partly help to prevent or reduce these problems.

It seems that the most important issue is to realize that it is only the pursuit of impartial knowledge that justifies any investigations with the use of human subjects. Hence, research ethics are concerned with respecting research participants throughout each step of the project – starting from choosing a research topic, and ending at sharing the conclusions with others.

Nonetheless, ethics standards are designed to protect not only participants, but also researchers and their institutions as well as the good name of science. The law tends to define minimum standards of conduct in order to prevent bad practice. However, ethics guidance serves just to raise awareness and to encourage higher standards, mainly through posing questions rather than providing decisive answers (Alderson, Morrow, 2011, p. 4).

The important problem is whether ethics standard can work in every country or rather not. One view is that cultures vary so much that each culture has its own ethics. Certainly, ethical research has to be sensitive to local concerns, values and customs, and adapt to them. Nevertheless, such issues as – for example – informing children and adults honestly, asking for their consent, and respecting their refusal should be those ethical standards that apply to every human being irrespective of cultural affiliation. Moreover, the problem of cultural differences does not refer only to individual countries – there are also too many diverse views and disagreements within each culture to allow easy generalizations about what everyone in a given place believes (Alderson, Morrow, 2011, p. 20).

Despite the fact that cultures vary, each one is not purely different from all other cultures, when so many influences flow between them. Interestingly, S. Lukes (2008) argues that among all the many varied values there are constant principles and rights that matter in every society: justice, respect, solidarity, honesty. People differ in how and why they express and experience respect, and the related feelings of dignity or humiliation, confidence or powerlessness, being valued or being exploited or deceived. However, these experiences still matter to everyone, and when researchers ask participants to help them, they have a duty to honour these universal principles and rights.

There is no doubt that the most important and fundamental ethical issue confronting the researcher is the proper treatment of research participants. Therefore, it is essential to be aware of the sensitivity of some topics. Research may become damaging to the participant's sense of self if sensitive topics are pushed without consideration. When those topics are to be addressed – and it is important to remember that what is sensitive may be understood differently by the participants than it is by the researcher – the research subject's right to withdraw must be respected. This needs to be explained to participants in advance as part of the process of gaining informed consent (David, Sutton, 2011, pp. 48–49).

Respecting the privacy of research participants is also at the heart of the conduct of ethical research. Researchers attempt to ensure the privacy of research subjects by either collecting anonymous information or ensuring that the information collected is kept confidential. Anonymity is the best way to protect privacy because anonymity means that the identity of the participants is not known to the researcher. For example, anonymity could

be achieved in a survey about cheating on examinations if the survey did not ask the students for any information that could be used to identify them (e.g. name, student number) and if the survey was administrated in a manner (e.g. in a group setting) in which the researcher cannot attach a name to the completed survey instrument (Johnson, Christensen, 2012, p. 116).

In addition, research can be unethical in the sense that it asks the wrong questions, or the methods do not fit the questions. The studies may waste time and money, at best come up with useless answers, and at worst produce misleading ones that support future misguided and even harmful policies.

Educational research should maintain high standards for validity and be conducted and reported in an honest and open fashion. The concern with validity requires that scientists be open in disclosing their methods and honest in presenting their findings. This means in particular that articles or other reports should include a detailed methodology section (Check, Schutt, 2012, p. 55).

The funding contract can have powerful effects on the ethics of each project. Researchers may produce important but disturbing findings that their employers do not wish to publish, for fear of alienating patrons or funders. Contracts guard against this when they mention researchers' – not only their employers' – right to publish. Another barrier to this freedom is having to satisfy editors before publishing reports in the press (and in academic journals the peer reviewers) (Alderson, Morrow, 2011, p. 67). Despite all the problems, it has to be stressed in this place that the goal of educational research is not to come up with conclusions that people will like, but to figure out how and why some parts of the educational world operate as they do.

## Impact on children and adolescents

Respect is a basic ethical principle. Listening to children can help adults to discuss and resolve children's misunderstandings. This can reduce resentment or resistance, and diminish the risk of complaints.

Further, transparent discussion can encourage the informed consent as an expression of real commitment by children and adolescents to a research study that they understand. Undoubtedly, their active cooperation and contributions are likely to support more efficient and effective research. As a consequence of such prudent approach to them, young participants will be less afraid and less likely to withdraw from a study.

Researchers who do not respect children's consent or refusal may hold and perpetuate mistaken and unethical prejudices against children. Realistic research that respects children's social and moral competence challenges prejudices, misleading stereotypes and harmful discrimination. It helps to

promote ethical standards of respect and justice (Alderson, Morrow, 2011, p. 121).

The impact of research includes both the effects on young research participants during a study, and also the longer-term effects that findings might have on attitudes and policies about all similar children and adolescents, and services for them. Some effects may be even not intended.

## Conclusions

Educational research is a continually developing field. This is due in part to education's dynamic relationship with other fields of study. Research has been conducted in virtually every area in the field if education but, unfortunately, many of problems have still remained unresolved.

There is no one way to carry out research in educational settings. Nevertheless, the typical outline for the research process can be broken down into the following important steps:

- ❑ choosing a research topic and identifying a research problem;
- ❑ posing a targeted question;
- ❑ searching and analysing existing literature for the current state of knowledge on the selected topic;
- ❑ developing a hypothesis;
- ❑ collecting and analysing relevant data;
- ❑ drawing conclusions;
- ❑ communicating the findings to others.

Measurement – as the process of linking abstract concepts to empirical indicants – has the crucial role in science (Carmines, Zeller, 1979, p. 10). The fact is that much educational research focuses on analysing the educational world using variables. Variables should be understood as the characteristics or properties of people, organizations, countries, or other units of analysis that vary (i.e. take on different values).

Variables can be defined into four different data types, known as levels of measurement, according to the particular features of the data. There are the following levels of measurement: nominal, ordinal, interval, and ratio.

The population is the entire set of units that a researcher is keen to investigate. Actually, when the population is known and is small enough, it may be possible to examine the entire group. However, for the majority of research the population either is too large or is unknown at the outset of the research. In these instances a sample can be selected for the research study. Indeed, sampling is a powerful tool for educational research.

Probability sampling methods rely on a random selection procedure – nothing but chance determines which elements are included in the sample. The probability of picking out is known and is greater than zero. In prob-

ability samples, each individual has exactly the same chance as every other individual of being chosen. This feature of probability samples makes them much more desirable than nonprobability samples when the goal is to generalize to a larger population. However, nonprobability sampling methods are also useful, especially when random sampling is not possible. For example, they can be used when no convenient sampling frame of the population is available, or when time or cost restrictions make surveying of the entire population impractical.

The type of reasoning in educational research can be described as deductive or inductive. Research based on deductive reasoning proceeds from general ideas, deduces specific expectations from these ideas, and then tests the ideas with empirical data. Research based on inductive reasoning begins with specific data and then develops general ideas or theories to explain patterns in the data.

Identification of relationships between variables is the goal of much educational research. It is important, then, to distinguish an independent variable from a dependent variable. An independent variable is a variable that is hypothesized to cause, or lead to, variation in another variable. A dependent variable is a variable that is hypothesized to vary depending on, or under the influence of, the independent variable. Thus, a cause-and-effect relationship between an independent variable and a dependent variable is present when changes in the first one tend to cause changes in the second one (although, in the case of reciprocal causation the causal connection flows both ways).

Sometimes an intervening variable, also called a mediating variable, can occur between two other variables in a causal chain. The intervening variable can help to understand the process through which the independent variable and the dependent variable affect one another (Kenny, Kashy, Bolger, 1998).

Consideration of research ethics is a necessary part of the development and implementation of any research study. Understanding ethical principles and procedures assists a researcher in preventing abuses that could occur and help delineate his or her responsibilities as an investigator (Johnson, Christensen, 2012, p. 99).

Research ethics have to be based on a realistic assessment of the overall potential for harm and benefit to research subjects. Researchers must make every effort to foresee possible risks and to weigh the possible benefits of the research against these risks. The benefits to subjects of the research should be always maximized and the risks for them should be always minimized (Sieber, 1992, pp. 75–108).

Protecting participants is the primary focus of research ethics. Risks in educational research include distress and anxiety, embarrassment and loss of self-esteem. Other usual harms in educational research, such as inconvenience, time lost, intrusion and mental discomfort, may seem slight. However, these

could be very serious to the person concerned. People can feel wronged by research, if they feel they have been deceived or humiliated, or that their privacy or values have been disregarded, or their views were misreported. Research ethics are intended to help researchers to plan ahead and prevent such problem (Allen, 2005; Danby, Farrell, 2005; Morrow, 2005).

Educational researchers who conduct research on behalf of organizations – a school, a school system, a funding agency implementing a new programme – may face additional difficulties when the organization, instead of the researcher, controls the final report and the publicity it receives. If organizational leaders decide that particular research results are unwelcome, the researcher's desire to have findings used appropriately and reported fully can conflict with contractual obligations. Researchers can often anticipate such dilemmas in advance and resolve them when the contract for research is negotiated, or simply decline a particular research opportunity altogether. But often, such problems come up only after a report has been drafted, or the problems are ignored by a researcher who needs to have a job or needs to maintain particular personal relationships. These possibilities cannot be avoided entirely, but because of them, it is always important to acknowledge the source of research funding in reports and to consider carefully the sources of funding for research reports written by others (Check, Schutt, 2012, p. 61).

Ethical management and budgeting of a research project involve treatment of the whole research team with care and respect enabling them all to respect the participants, to develop their own ideas, analyse data in depth, and report the research widely (Alderson, Morrow, 2011, p. 66).

To sum up, research involving human subjects needs to be ethical through all its stages – in its selecting, in its conduct and in the distribution of its findings. Researchers must also consider the use to which their work is put. Although some researchers believe that personal values should be left outside the research setting, fortunately more of them feel that it is proper – even necessary – to concern themselves with the way their research is used.

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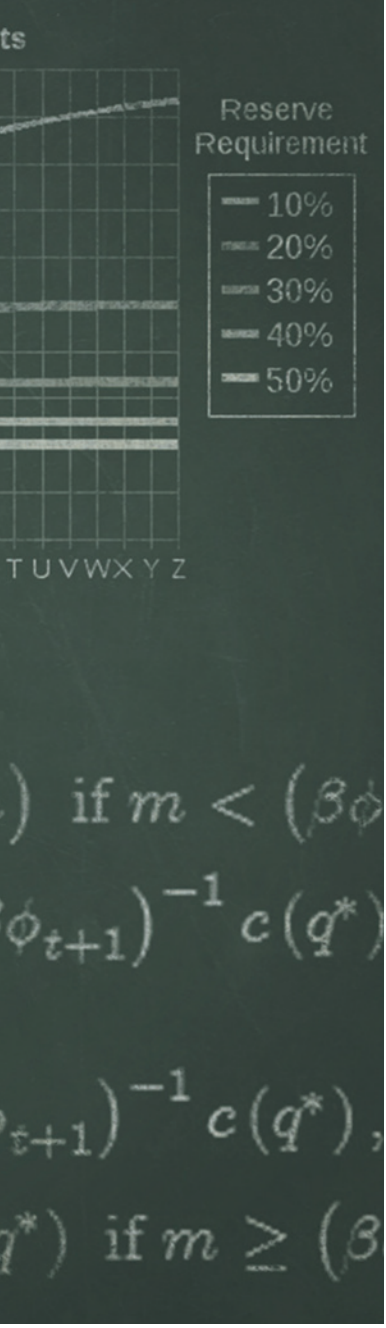


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