

ACADEMIC POLICIES AND STRATEGIES TO SUPPORT STUDENTS WITH TALENT IN TECHICAL DOMAINS

ANGHEL IONICA-ONA*

ABSTRACT. In this paper we are concerned about the educational policies and strategies conceived in order to support the talented youth, through the way how the main technical universities in Romania involved in this topic. The research methodology was based on the analysis made to the official documents of six of the most prestigious technical universities in Romania (Military Technical Academy, Polytechnic University and Technical University of Civil Engineering, all from Bucharest, Technical University of Cluj-Napoca, Technical University “Gheorghe Asachi” from Iasi and “Politehnica” University of Timisoara). We have researched the educational policies and strategies undertaken by these universities, objectified in documents such as “University Charta”, “Institutional Development Strategy” and “Regulations for scholarships”. Our effort in analysis directed us to the possibility of concluding some positive aspects, but some inadequacies also, in what concerns supporting young talent in the technical through policies and educational strategies. For example, there is a large number of performance development programs implemented in the academic field, formally and non-formally, designed, developed through the staff of the universities.

Key words: *giftedness, talent, technical talent, educational policy, technical universities*

ZUSAMMENFASSUNG. Akademische Politiken und Strategien, um Studenten mit Talent in den technischen Bereichen zu unterstützen. In diesem Werk sind wir an den pädagogischen Konzepten und Strategien interessiert, die um die Unterstützung den talentierten Jugendlichen konzipiert sind, nach der Art, wie die wichtigsten technischen Universitäten in Rumänien in diesem Thema sich involvieren. Die Forschungsmethodik wurde auf die Analyse aus den offiziellen Dokumenten von sechs der wichtigsten technischen Universitäten in Rumänien (die Technische Militärakademie, die Polytechnik und die Technische Universität für Bauingenieure, alle aus Bukarest, die Technische Universität aus Cluj-Napoca, „Gheorghe Asachi” Technische Universität basiert von Iași und „Politehnica” von Timișoara). Wir haben die pädagogischen Konzepte und Strategien recherchiert, die von diesen Universitäten in Dokumenten wie „Charta der Universität” „Strategie

* Department of Teacher Training, Technical University “Gh. Asachi”, 67, Mangeron Str., Iași, Romania, ona_angel@yahoo.com

der Institutionsentwicklung“ und „Regeln für Stipendien“ unternommen und objektiviert wurden. Unsere Bemühungen in der Analyse verwiesen uns an die Möglichkeit des Abschlusses von einigen positiven Aspekten, aber auch von einigen Unzulänglichkeiten in dem, was die Förderung der jungen Talente in der technischen Bereichen durch spezifischen Politiken und pädagogische Strategien betrifft. Zum Beispiel gibt es eine große Anzahl an Leistungsentwicklungsprogramme, die im akademischen Bereich implementiert sind, entweder formal oder non-formal, und die durch die Mitarbeiter der Hochschulen konzipiert und entwickelt sind.

Stichwörter: Hochbegabung, Talent, technisches Talent, Bildungspolitik, technischen Hochschulen

THEORETICAL CONCERNS ABOUT EDUCATIONAL POLICY SUPPORTING GIFTEDNESS AND TALENT IN TECHNICAL DOMAIN

The concept of policy is frequently joined in the literature with the strategy, regardless of the sector involved: economic development and finance, social development, education, etc. The report between the concepts of “policy” and “strategy” is a complex one: mutual coordination and subordination, sometimes even overlapping semantics. The policies and strategies both require an act of decision, with a higher or lower grade of generality and therefore they are often used as synonyms (A. Miroiu, C. Crăciun, B. Florian, 2007, M.F. Căprioară, 2007, G. McCulloch, D. Crook, 2008). In the present paper we understood the educational policies as a sector of public policy. They are political decisions on setting priorities, aims, resources, formulation of criteria for measuring the efficiency and effectiveness of the process, all these in relation to the educational problems of general and specific public interest. Educational strategies were also considered as decisional facts, related to the educational policies, concerning the choice of the objectives, content, methods, means and resources needed in order to solve a problem of public education. In our case, the problem is correlated with the educational support of technically talented students as important human resources not only for higher education system, but for the national economy.

The inquiries made in understanding and defining the technical talent, as a specific form of giftedness and talent, led us to the identifying of two categories: some came from the field of the psycho-pedagogical excellence research (J. Feldhusen, 2005, F. Gagne, 2009, C. Crețu, 2009, J.S. Renzulli, 2005, K. Heller, 2005) and the other from the engineers’ area, who were interested in the subject of the giftedness because they wanted to understand the mechanisms generating the invention (V. Belous, B. Plahteanu, 2007, Moraru, 1980).

In this paper we consider the technical talent as the expression of the superior endowment in different areas of technical field, as the excellence, demonstrated by an outstanding performance in this field or as a potential of excellence demonstrated by the results in various forms of evaluation.

RESEARCH METHODOLOGY

Being preoccupied about the issues of the supporting and promoting of the talented youth in technical field, we have investigated the intervention and participation of the technical universities in Romania in this sector of education policy.

The research methodology was based on the analysis made to the official documents, published in various ways by the institutions. Six of the most prestigious technical universities in Romania (Military Technical Academy, Polytechnic University and Technical University of Civil Engineering, all from Bucharest, Technical University of Cluj-Napoca, Technical University "Gheorghe Asachi" from Iasi and "Politehnica" University of Timisoara) where evaluated about their position about the students' performance issues presented in some documents as in the following.

ANALYSIS OF THE ACADEMIC DOCUMENTS

The educational policies promoted by the universities are to be found in some documents having a normative character, such as the universities' charta, operating rules, etc. Some areas of educational policies have their own specially formulated documents – such as the quality management. Other areas are implicitly involved in more general academic documents, without being objectified in independent documents. Our investigations have shown that this happens also when speaking about supporting the excellence. Therefore we shall present in the following the test results we have done on three categories of tools, that provide - more or less explicitly - information about the attitude of the technical universities in Romania on the issue of supporting talented and performant students: "University Charta", "Institutional Development Strategy", "Regulations for scholarships".

Supporting performance of the students through the "University Charta"

Supporting students' performance through the "University Charta" is the document that sets guidelines for the functioning of the university. The declared culture of the university and the philosophy after the university exists, are included in this document. For this analysis, we have studied the universities' charta and pointed the ways in which the performance is supported (Table no. 1)

Table 1. Supporting performance through the “University Charta”

Military Technical Academy	The performance indirectly supported by: - participation in the research activity; in the scientific events, at home and abroad (c. 5, art. 45, par. b) - sharing of student mobility at home and abroad (c. 5, art. 45, par. f) (Charta, 2006)
Polytechnic University of Bucharest	Performance rewarded through: - scholarships given by the state or by some other organizations (c.11, art. 96, par. 1-2). The state given scholarships are : performance, study and merit scholarships (c. 11, art. 97, par. 1) - scholarships based on the contract with business agents or other legal entities or individuals (c.11, art. 97, par. 2)
Technical University of Civil Engineering from Bucharest	Performance rewarded through: - performance, study and merit scholarships, from the state budget; - scholarships provided inside the external cooperation programs or by the extra-budgetary funds of the university (Professional Regulations, 2007, which cite from the University Charta, c. 6).
Technical University of Cluj-Napoca	Performance rewarded through: - financial aid (Charta, 2003, iv. art. 36)
Technical University “Gheorghe Asachi” from Iasi	Performance supported by: - encouraging student mobility for documentation and information exchange (c. I, art. 6, par. c) - distinctions, prizes, scholarships (c. VIII, art. 32, par. 2) (University Charta, 2011)
“Politehnica” University of Timisoara	Performance rewarded through: -scholarships, credits, financial and social facilities (Charta, 1999, c. 5, art.14, par. g)

The analysis on the documents cited indicates that there are few articles the technical universities’ charta or paragraphs related to the supporting of the students’ performance. It is encouraged in these documents either by material rewards: scholarships or other financial aid came from budgetary or extra budgetary resources raised by universities, or by moral rewards: diplomas giving different distinctions or inclusion in the university research teams. We shall add the fact that it sends us to other institutional documents in order to complete the very general lines of the universities charta.

Supporting performance of the students through “The institutional development Strategy” and the most recent Operational Plans

The management plans (both strategic and operational) secure the long-, medium- and short-term goals of the universities and sketches the directions of the institutional policies by appointing the strategic objectives. The ways in which the performance is supported in these documents are presented below:

The target to recruit future students with high potential and performance appears in the list of the main strategic objectives of the Polytechnic University from Bucharest (Strategic Plan, 2010, p.6). Furthermore, targets about “involving a larger number of students in the research work of the academics, in order to increase the added value; providing complementary education in communication, entrepreneurship, marketing, career development, etc., through modules of optional/facultative disciplines” (doc. cited, p.7) appear in the list of the six priority objectives. The Operational Plan for 2011 has 31 goals, among which the 16th states the “involvement of the students in research trainings at all the levels of higher education”.

The sixth of the “academic goals”, according to the documents Technical University of Civil Engineering from Bucharest, provides the direction to an education that develops the students’ creativity. The team work states this objective as follows: “The direction of the further academic activities through creative forms, eliminating the reproductive education, independent formative and knowledge actions developed by the students; turning the 4th bachelor year, master and doctoral students in the research activities of the departments” (Operational plan and strategic objectives, 2011, p. 5). In the section: “research targets”, the sixth goal states that “one shall act more consistantly in order to attract the young academics and the best students from the final years in the scientific research” (doc. cited, p. 10).

Although Strategic Plan 2008-1012, p.2, of the Technical University of Cluj-Napoca, states: “2.3. Stimulating the performance by awarding, recognition and popularization of the outstanding results in teaching, scientific and managerial activity”, the “Operational Plan for 2011” does not provide any objective in supporting the performance of the students, (many are rather related to the way how to attract more students).

The Polytechnic University Timșoara lists in its “Objectives and actions concerning the educational process” two objectives aimed to the academical support given to the students by organizing professional contests and scientific sessions: “organization, together with the student organizations, of some professional student competitions and supporting the participations of the UPT students in professional contests organized by other universities or companies;

organizing, together with the student organizations, of annual students' sessions of scientific and technical communications" (Strategic Plan, 2008, p. 6). However, under "Objectives and actions concerning the students", there is no paragraph dedicated to the supporting of the performant ones.

Not all the universities have posted their Development Strategy on their own website. But those which did, include in the document items related in supporting the students' performance in various forms: providing grants or other financial stimulents, inclusion of these in the academic research teams, encouraging the participation in thematic clubs or student competitions, etc.

Supporting performance of the students through scholarships regulation

The regulation granting scholarships to the students having different levels of academic performance is an issue that gives individuality to each institution of higher education. The scholarship, regardless of its type, motivates the student in study and performance.

The analysis of the document „Student's Status", 2009 of the Military Technical Academy of Bucharest, shows that students have a range of rights, corresponding to the performance of an activity. The 15th article of the cited document, states that students have the right: to take part in the student scientific circles organized by the academy, and in the research collective of the institution; to benefit of the student mobilities within the country or abroad; to publish the findings of their studies, the results of the scientific research and scientific or artistic articles in the journals of the Military Technical Academy and the Ministry of Defence; to receive bonuses and other rewards for their learning results, scientific research and irreproachable military conduct; to be promoted to command positions on the basis of school and military skills".

Also the Rules for granting scholarships, 2010, from the Polytechnic University of Bucharest, informs that the institution gives four different types of scholarships: performance, merit, study and „Olympic Merit" scholarships, in descending order of the notes obtained, within the budget of each faculty (doc. cited, art. 17). The document specifies the way how the scholarships are granted, giving the budget priority to the performance scholarships (all with an average of at least 9.70) and merit (with an average of at least 9.50), the average limit for the study scholarships being 8 (doc. cited, art. 21).

The University of Civil Engineering Bucharest also presents its way to determine the amount of the scholarships: „the study scholarship amount is the minimum amount of a scholarship; the merit scholarship amount is 1.2 x the amount of the study scholarship, and the welfare scholarship amount is 0.85 x the amount of the study scholarships. The performance scholarship amount is twice the minimal scholarship awarded by the university and higher than the study

scholarship” (Scholarships Regulation, 2009, p.6). There are two criteria for granting scholarships: academic results obtained at each exam session – in the case of performance and study scholarships -, and on a professional competitive basis – in the case of performance scholarships. The performance scholarship is limited to 3 for the 2nd year and the 1st semester of the 3rd year, and only 1 for the 2nd semester of the 3rd year and 4th year (doc. cited, P.8).

The Technical University of Cluj - Napoca grants also three types of scholarships, outside the social one: performance - granted only to the 3rd and 4th year students, who have at least an average of 9.5 (Scholarship Regulation, 1997, art. 2.1); merit scholarship - granted to the students from the 2nd year of study, if they have achieved at least an average of 9.5 (doc. cited, art. 3.1), but also from the 1st semester of the 1st year of study, to the students who received awards at the International School Olympics in one of the last years of their high school studies (doc.cited, art. 3.3), study scholarship - granted to students who have achieved at least an average of 8 (doc. cited, art. 4.1), within the existing funds (doc. cited, art. 4.3).

The Polytechnic University from Timșoara offer three categories of scholarships that students can access: performance – if they have obtained an average of 10 – which it is given for a period of 12 months (Regulation, 2010, art. 9), merit scholarships – for an average of at least 9.5 (doc. cit., art. 10), and study scholarships – their limit being fixed by each Faculty Council.

CONCLUSIONS

The document analysis has given to us a number of issues: technical universities in Romania possess in varying degrees also directions of institutional policy to support the students’ academic performance, but they have no explicit policy in this sense; supporting the academic performance (with a lower limit established by each institution on average around 8 obtained at the semester examinations) is achieved through various forms: financial, moral, promotion to some universities abroad; there is no discussion anywhere about the performance potential. This resource is totally neglected by all institutions; implementation of the policy directions depends on human resources of each institution. In the absence of institutions dealing with this, the process of identifying the potential talent seems to refer to the professors.

As a result of the positive and negative identifications through our analysis, we should make a few general recommendations: a) selection and use of an operational significance to the concept of “student with technical talent” in the academic decision-making documents; b) establishment of some university structures in order to be responsible on the one hand with the identification of the talented students in engineering, and on the other hand with their educational and career counseling.

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REFERENCES

- Academia Tehnică Militară din București (2006), *Carta universitară a Academiei Tehnice Militare din București*,
http://www.mta.ro/documente/carta_universitara_atm_editia2006.pdf, downloaded on 31.07.2011.
- Academia Tehnică Militară din București (2009), *Statutul studentului militar din Academia Tehnică Militară*, București,
<http://www.mta.ro/documente/Statutul%20Studentului%20Militar%20-%2001%20Iunie%202009.pdf>, downloaded on 31.07.2011.
- Belous, V., Plahteanu, B. (2007), *Aplicațiile inventicii*, Ed. Performantica, Iași.
- Căprioară, M.F. (2007), *Strategii și politici publice*, Ed. Institutul European, Iași.
- Crețu, C. (2009), "Global Success and Giftedness". In Balchin, T., Hyner, B., Matthews, J.D. (Eds.), *Gifted Education International Handbook*, Routledge International Companion, London, 169-176.
- Feldhusen, J. (2005), "Giftedness, Talent, Expertise and Creative Achievement". In Sternberg, R.S., Davidson, J.E. (Eds.), *Conception of Giftedness*, Second Edition, Cambridge University Press, 65-79.
- Gagne, F. (2009), "Debating Giftedness: Pronat vs. Antinat". In L.V. Shavinina (Ed.), *International Handbook on Giftedness*, Springer Science & Business Media B.V., 115-198.
- Heller K., Perleth, C. (2005), "The Munich Model of Giftedness Designed to Identify and Promote Gifted Students". In Sternberg, R.S., Davidson, J.E. (Eds.), *Conception of Giftedness*, Second Edition, Cambridge, 146-186.
- McCulloch, G., Crook, D. (Eds.) (2008), *The Routledge International Encyclopedia of Education*, Taylor & Francis Group, printed in GB by MPG Books.
- Miroiu, A., Crăciun, C., Florian, B. (2007), *Politici de asigurare a calității învățământului, Educația 2000+*, București.
- Moraru, I. (1980), *Un model epistemologic – psihologic al creativității tehnice*, Ed. Științifică și Enciclopedică, București.
- Renzulli, J.S. (2005), "The three-Ring conception of Giftedness". In Sternberg, R., Davidson J. (Eds.), *Conceptions of Giftedness*, Cambridge University Press, 246 – 278.

- Universitatea "Politehnica" din Timișoara (1999), *Carta Universității*,
http://www.upt.ro/pdf/Carta_UPT.pdf, downloaded on 31.07.2011.
- Universitatea "Politehnica" din Timișoara (2008), *Planul Strategic de Dezvoltare, 2008-2012*, http://www.upt.ro/pdf/PS/UPT_Plan_strategic_pentru_perioada_2008-2012.pdf, downloaded on 31.07.2011.
- Universitatea "Politehnica" din Timișoara (2010), *Regulament de acordare a burselor, Nr. 16018/08.11.2010*, http://www.upt.ro/administrare/dgac1/file/2010-2011/Regulamente%20interne/Regul_burse_ajut_soc_licenta_master.pdf, downloaded on 31.07.2011.
- Universitatea "Politehnica" din Timișoara (2011), *Plan Operațional – 2011*,
http://www.upt.ro/administrare/dgac1/file/2010-2011/Planuri%20operationale%202011/PO_UPT_2011_Anexe_t.pdf, downloaded on 31.07.2011.
- Universitatea Politehnica din București (2010), *Regulament privind acordarea burselor si a altor forme de sprijin material pentru studentii si masteranzii din Universitatea Politehnica din Bucuresti*,
http://www.pub.ro/images/regulament_burse_septembrie_2010-varianta_finala_2_.pdf, downloaded on 31.07.2011.
- Universitatea Politehnica din București (2011), *Carta UPB*,
http://www.pub.ro/images/reglementari/carta_upb.pdf, downloaded on 31.07.2011.
- Universitatea Politehnica din București (2011), *Plan Operational pentru anul 2011*,
http://www.pub.ro/images/plan_operational_2011.pdf, downloaded on 31.07.2011.
- Universitatea Tehnică "Gheoghe Asachi" din Iași (2011), *Carta Universității*,
<http://www.tuiasi.ro/users/119/Carta%20TUIASI%202011.pdf>, downloaded on 31.07.2011.
- Universitatea Tehnică de Construcții București (2009), *Regulament pentru Acordarea Burselor și Altor Forme de Sprijin Material pentru Studenții din Universitatea Tehnică de Constructii Bucuresti*, <http://www.utcb.ro/utcb/files/UTCB-27%20Metodologie%20pentru%20burse.pdf>, downloaded on 31.07.2011.
- Universitatea Tehnică de Construcții București (2011), *Plan operațional și obiective strategice – 2011*, http://www.utcb.ro/utcb/files/Plan_operational_2011.pdf, downloaded on 31.07.2011.
- Universitatea Tehnică din Cluj – Napoca (2003), *Carta Universității*,
http://www.utcluj.ro/download/Carta_Universitatii.pdf, downloaded on 31.07.2011.
- Universitatea Tehnică din Cluj-Napoca (2008), *Plan Strategic, 2008–2012*,
<http://www.utcluj.ro/prezentare/documente.php>, downloaded on 31.07.2011.
- Universitatea Tehnică din Cluj-Napoca (2011), *Planul Operațional al Universității Tehnice din Cluj-Napoca – anul 2011*,
http://www.utcluj.ro/download/documente/Plan_operational_2011.pdf, downloaded on 31.07.2011.