Reality and prospects in the prison education of Romania

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Abstract: As in the European prison systems, the Romanian penitentiary system aims to improve prisoners' human condition by providing knowledge, by treating various mental disorders and physical development of useful skills necessary for an honest life after release. Re-socialization of prisoners is not achieved by simply applying a prison sentence, but through targeted activities and programs, multidisciplinary, individualized, depending on the needs of people in a state of deprivation of liberty.

Keywords: authority, education and psychosocial support, education program, prison system, prisoner, prison education, , responsibility, prison environment, prison subculture, re-socialization, social reintegration,

INTRODUCTORY NOTIONS REGARDING THE PRISON SYSTEM

The prison system has always been considered an instrument of state force, by means of which the execution of criminal custodial sentences is organized and, in one way or another, the instrument by which the individual is educated, in compliance with legal rules and social order. With the evolution of society even the prison system has seen some development stages.

The prison living area has a number of general characteristics, in the sense that **it is an enclosed space** because of its structure and functionality, **is a dichotomous space**, which divides the prison population into two groups, on one side and on the other of the bars **it is a criminal area**, in legal terms, corresponds to an area of "criminal discipline" and also **is an area of authority**, an area of asymmetric interactions [1].

The characteristics of prison life area have psychological and psychosocial consequences visible on both the prisoners and prison staff. The prisoners' community is an anonymous world, made up of people deprived of prestige, in which the outstanding criminal cases of some of them, gives them, an aura of leaders capable of anything. In prison, the problematic nature of norms and values gains particular aspects, arising from the situations the prisoners are in, namely:

lack of freedom as well as the other frustrations that prevent the proper reporting to the pertinent aspects of daily existence.

At the individual level, the norms and values serve as a tool and standard in the choice of action alternatives, as well as for the projective dimension they have, in the sense that it offers motives and plans of action, according to the circumstances of life the individual is crossing through a certain time.

In prison, as in society, three types of rules operate:

- organizational rules, rules that concern the working mechanism of the institution:
- actionable rules indicating the rules of fair evaluation of everyday situations and events that corporate the interests of prisoners;
- relational norms concerning the ways considered effective in the relationships held between prisoner prisoner, prisoner - group, prisoner prison staff;

Specific to the prison environment is the existence, in parallel, of *official rules*, which are legislated and pursue the goals of the institution: productive, educational, preventive, and *customary rules, informal*, aimed at creating bearable relationships and living conditions, from their point of view, during the sentence and which acts only within the group of prisoners[2].

The arrangements for introspection and informal expressions of norms and values result from [3]:

- Once inside the prison, the individual will act according to norms and values appreciated by him as being consistent with the new circumstances in which he is in;
- Senior prisoners are more open to cooperation and assistance then those who are new and are perceived as participants to their system of values

and that they respect the informal rules;

- In some cases, the system of standards and values serves as a defense mechanism against their own remorse, the individual accepting the way of thinking and judgment values issued by the prisoners who offer reasons not to fill guilty;
- The rules, customs and hierarchies which function among prisoners are more easily accepted by the inmates with a lower degree of education, those with a confusing perception of their criminal reasons and those who have well defined plans for the future;

The position of the prisoners regarding norms and values, as well as the one concerning most events, expresses their position as onlookers during their detention. This does not imply a crisis of meaning for the mass of detainees, but a state of expectation that they have.

Interpersonal relationships are constituted in small groups in which individuals have a direct and permanent contact for a more or less long period of time they work, learn, live, have leisure activities, educational, cultural-artistic or sportive ones [4].

In the case of interpersonal relations, the emotional ones are dominant. Are created and operate within the micro-group. They appear and mainly manifest themselves as preferential relations, sympathy, antipathy and indifference, elements which we can find in interpersonal relationships within collectives of prisoners. Interpersonal relations represent, any circumstances, the direct framework under which the individual forms and manifests, his personality is modulated and distinguished, or under which its many human needs are met, especially those pertaining to mental life, emotional balance or soul. Therefore, the interpersonal relationships in prison occupy an important place in the life of the individual, prisoner or prison staff and microcollectives which justify the effort that should be made to know them as thoroughly as possible, to influence and direct them, so as to have a positive content and finality [5].

CHARACTERISTICS OF PRISON POPULATION

The human prison universe is difficult to enter and not often difficult to express in

statistical terms [6]. If the major categories that characterize the prison population, are generally known, situation in which case we consider: the distribution by sex, age, types of crimes, area of origin, school education, marital status, etc.., less discussed, in general, are the events within inmates collectives somewhat invisible, but whose strength is doubted by no one. In these circumstances it is important to analyze the way informal leaders in prison appear, how they exercise their authority, the functions certain inmates perform to meet the needs of the group, the types of social stratification of condemned groups, the particular communication amended rules or the steps of integrating newcomers into the mass of prisoners [7].

A number of studies have shown that in prison at the level of inmate groups a lack of social roles is manifested, which negatively affects the social post-executor reintegration [8]. Although the prison has generally proven to be the most effective means of punishment among those used so far, the strong unsociable impact can not be hidden or ignored, so that fewer and fewer positive results, particularly the increased recidivism, mandates the conclusion that even this means of punishment, in the form used in the current period, manifests the risk of heading slowly but surely to failure. This is substantiated by the fact that despite all the specialized interventions such as psychological, social or educational and multidisciplinary programs, supported in order to try to balance the educative function of punishment, the recidivists' number is steadily increasing. Since the beginning when the individual enters into prison the stigmatization, marginalization, de-socialization and "integration into the value system of what is called the prison subculture", are so strong that fewer persons deprived of liberty, really manage to rebuild their lives, when returning to society. There is an acute need to report the prison life to the open life of the prisoners' community and family. This can be achieved by humanizing the prison environment, investigating methods and techniques centered on detainees and the problems they face, as well as increased use of resources and involvement of civil society, families and local authorities in the rehabilitation of persons in custodial status.

PRISON EDUCATION IN ROMANIA – REALITIES AND PROSPECTS

The prison system is a public service with a particular social role, determined by its punitive, educational and social reintegration functions of the inmates. This role is visible in a social context, especially when adverse events occur. Therefore the emphasis on the importance of the organization and coordination of execution of prison sentences on providing the guard, escort and monitoring of prisoners.

The prison administration system in Romania is composed of the National Prison Administration and its subordinate units, regarded as public institutions of defense, public order and national security of the state [9]. National Prison Administration in Romania is a public service responsible for the implementation of the detention regime and ensuring the recuperative intervention, under conditions that guarantee respect for human dignity, thus facilitating the accountability and reintegration into society of inmates and helping to increase the safety degree of the community, maintaining public order and national security.

The activity of the National Prisons Administration in Romania, is coordinated directly by the Minister of Justice, and is conducted in accordance with the Constitution of Romania, the Universal Declaration of Human Rights, the recommendations of the European Council on the treatment of prisoners, with the dispositions of Law no. 293/2004 on the status of civil servants in the National Prisons Administration, Law no. 51/1991 on the national security of Romania, the criminal-executive legislation and decisions of the Government on the application of this legislation.

The analysis of the Romanian prison system functions in terms of how real they are, points out that most departments in the jurisdiction of the National Prison Administration, management intervention need to become more efficient. In this context, the prison education is more complex as in the next period short, medium and long term the prison administration system will be subjected to pressures from the to endogenous and exogenous factors.

In the short term, in terms of *exogenous* factors, the main financial pressure is caused by the recession, which may still have multiple effects, including increased crime rate [10]. In this sense, the prison administration system must be

prepared to receive and sustain persons sentenced to prison, especially since an important indicator is the crime rate, increasing in recent years. In the long term, the prison administration system must be prepared to receive and sustain foreign persons, who must carry out a custodial sentence in Romanian prisons.

Endogenous factors which affect the activity of the penitentiary administration are related to the organizational system as a whole, but also to its components. Thus, the existing organizational system suffers from the participatory management, in the absence of a participatory management body, which includes the directors, at the level of general management practices and the specific activities of the penitentiary system. At the organizational level, general manager of a prison is burdened by the large share of hierarchical activities, time and consuming. organizational energy At the subdivisions level, the principle of uniformity of group activities is not fully respected. Also, one important problem is the inability of the prison system to implement the measures included in the strategic documents.

The punishment has no value in itself but it is a means to achieve an ending judged as useful. This finality is given by the rehabilitation of prisoners and their return to the society to which they belong. As professor Ioan Bala states "Prison is a part of the justice system and any change in its level affects the criminal trial. Under these conditions, the evolution of the Romanian judicial system must take into account the international dimension of European institutions in matter"

Just like in European prison systems, the Romanian prison system seeks to improve the human condition of inmates, giving them knowledge, treating their different physical and mental disorders, developing their skills, useful to an honest living after release [11].

The re-socialization of prisoners is not achieved by simply applying a prison sentence, through activities and targeted. multidisciplinary, individualized programs depending on the needs of people serving a custodial sentence [12]. To this end, the National Prisons Administration constantly evaluates the needs of social assistance, education and treatment of persons deprived of liberty, this process being the basis for their social reintegration strategy. The activity of educational preparation and qualification of persons deprived of liberty, the coordination, planning stages and educational programs are ongoing activities carried out within the system in order to achieve the educational function and psychosocial support.

The programs offered by the administration of a prison can be classified into *education programs, vocational training programs and therapy programs or psychosocial assistance* whose common finality is to help the prisoners to think and behave in a socially acceptable way so as not to relapse [13].

According to Strategy of the prison administration system in Romania, during 2010-2013, an important strategic goal is "The education and psychosocial support adapted to the needs of inmates" for the social reintegration of persons sentenced to imprisonment. In the context of this objective, the essential role of the prison service is that of preparing inmates for the period of post-detention. To achieve this goal, however, it is necessary to correlate the needs of persons deprived of their liberty in detention with the recuperative offer and the social inclusion approach, developed in collaboration with other institutions involved. For the successful reintegration it is also necessary the involvement of the local communities in carrying out educational activities in their dual capacity: of partners of the prison service and beneficiaries of the whole process of social reintegration.

The objective of education and psychosocial support adapted to the needs of inmates will be achieved through [14]:

- adaptation of activities, educational programs and psychosocial assistance to the needs of inmates;
- awareness by the community, of the importance of social reintegration of the persons who executed the punishments involving deprivation of liberty and its representatives in the process of reducing the risk of relapse;
- increase the quality parameters of the offer of programs, educational activities and psychosocial assistance conducted, to include a larger number of persons deprived of liberty in the recuperative steps, tailored to the individual identified needs and those of the society;

The impact expected after the achievement of this objective is the increased degree of social

reintegration of inmates and the reduction of adverse events in the prison system.

The directions for achieving this strategic objective are composed of [15]:

- elaboration and implementation of a uniform system of assessment and intervention focused on the needs of education and psychosocial care of custodial persons and those of the society;
- development and promotion of a national strategy for social reintegration of inmates, along with institutions that have responsibilities in the field of social inclusion;
- development of partnerships with non-governmental organizations and local communities, leading to facilitate reintegration of persons deprived of liberty;
- creation of a partnership between the Romanian prison service and EU structures of profile to facilitate the exchange of best practices in social reintegration;

The efficiency indicators of prison education objective are represented by: the number of school programs in the Romanian prison system, the number of inmates participating to the education programs, the number of professional training programs, the number of inmates participating in training programs, the number of socio-educational activities, the number of inmates participating to the socio-educational activities, the number of service contracts and works, the number of inmates participating in the contracted work, the number of counseling hours, the number of inmates participating to the counseling programs [16].

The impact indicators of this objective, regarding expectations, consist in the actual reduction of the recidivism rates, the suicides number among inmates and the number of aggressions between detainees.

The activity of education and psychosocial support, based on the recognition of the human dignity principle, of equal and inalienable rights of persons deprived of liberty is achieved in compliance with Law no. 275/2006 on execution of punishments and measures ordered by the court during the trial and with the Government Decision no. 1897/2006 for approving the Regulation for

applying Law no. 275/2006, of other legal provisions for this area, as well as the principles laid down by the Penitentiary Minimum Rules for the United Nations (1955), Recommendation no. R(89)12 - Education in prison (1989) and the European Prison Rules (2006).

The goal of education and psychosocial support is the social rehabilitation of inmates and is done by stimulating those skills and attitudes, which offers the possibility of pro-social behavior development and stimulation of relations with the environment and community [17].

In order to achieve its goals, certain activities can be organized with detainees, such as:

- > knowledge of their personality;
- identifying their needs, regarding the adaptation conditions of imprisonment in order to provide an individualized and progressive regime of penalty execution;
- > educational and vocational training,
- > social skills development,
- dynamic relations with the environment and community;
- > psychological assistance,
- > social assistance,
- > moral and religious assistance;
- carrying out general and specific programs, adapted to the inmates' needs;
- development of specific activities for the period of probation training to facilitate the social post-executor reintegration;

The analysis of the social reintegration activities of the Romanian prison system, revealed the following positive and negative aspects [18]:

- ➤ the social reintegration of qualified staff available, but it is insufficient to increase the quality of their work with persons deprived of liberty;
- ➤ attractiveness of vocational training programs is low, one reason being the lack of a coherent policy of reintegration, adapted to the needs of private individuals and the external environment;
- standardization area of the social reintegration is in an early stage and specific updating procedures are necessary, the definition of system

- performance indicators, and quality standards:
- material and financial resources involved in social reintegration are insufficient, regarding specific activities, the quality and quantity of results is closely related to the level of their use;
- social reintegration stops "at the prison gates" because there isn't an organizational subdivision under the National Prisons Administration, which deals with promoting the image of inmates into society and among employers for a more effective social reintegration;

THE EDUCATIVE ACTIVITIES IN THE ROMANIAN PRISON SYSTEM

Education for persons in detention must be in all respects, at least of a good level of quality, which is offered to adults in society. In light of this axiom, the educational and vocational training are priority activities that essentially contribute to the increase of social reintegration opportunities for the inmates [19]. Training courses are held in prison establishments and are conducted in accordance with Law no. 275/2006 on execution of punishments and measures ordered by the court during the trial and the National Education Law no. 1 / 2011, under the terms established by the Protocol on the provision of schooling and qualifications of persons in the custody of the National Prison Administration.

The schooling and professionalization activity, held in schools situated inside prison establishments, is part of the special education system and is conducted in accordance with the provisions of Title II, Chapter II, Section 13, art. 55 of the National Education Law no.1/2011 [20]. Schools which function in prisons are subordinated to the Ministry of Education, Research, Youth and Sports, and are included in the network of schools of the national education system.

In prison the following levels of education are held:

- > primary education,
- secondary education which includes:
 - > gymnasium,
 - > arts and crafts school,

- > completion year;
- education program "A second chance"
- > high school

Also, the persons sentenced with a custodial sentence, may attend university, in the form of reduced frequency or distance learning within an accredited higher education institutions. Approval for prisoners to attend courses outside the prison is considered to be a very good solution because it offers the best chance for the probability of relapse to diminish, the possibilities for study offered are greater and at the same time, the prisoners are more likely to continue their studies after their release. Prisoners, who can carry out studies in schools, being fewer, are thus encouraged to consider themselves "students", which leads to strengthening the positive aspects of their personality, causing them to greater efforts to study and to be rehabilitate much faster.

To increase the chances of social reintegration of inmates, county agencies for employment, in collaboration with the prison establishments, provides the following services: information, counseling, mediation employment training for persons in detention [21]. Thus, the training activity is organized in collaboration and by its own training centers subordinated to the County Agencies Employment, with regional training centers for adults, subordinated to the National Agency for Employment and with the authorized training providers, with whom the county employment agencies sign contracts under the law.

In the prison establishments educational activities of short duration are organized, which have as main objectives [22]:

- discovering and encouraging talents,
- stimulating creativity and inventiveness,
- development and practice of practical skills.
- forming and training of artistic, literary, musical, arts and technical skills,
- developing social, communication and networking skills and abilities;

Short-term educational activities may include: activities of artistic expression and leisure activities as well as cultural and artistic activities, culture dissemination, among which we can mention:

- organizing occupational workshops: arts, painting, drawing, graphics, pottery, sculpture and manual labor: crafts, embroidery, tapestry, knitting, fabrics, garments, etc.
- executing materials and works for the decoration of educational spaces and holding chambers;
- establishment of music and dance educational groups, reading circles, literary and technical-applicative creations, literary circles, drama teams, etc.
- design and drafting of cultural and informational materials for prisoners magazine, newspapers, leaflets, local radio show, TV;

Cultural and artistic activities and of culture dissemination, held in prison or in the community may include:

- organizing exhibitions of fine art and photographs of detainees in prison or community environment, film screenings, performances, theatrical, musical folklore, prepared and presented by the prisoners;
- organizing artistic events with the occasion of religious holidays or significant events from the sociocultural perspective;
- promoting artistic creations, made by persons in custody of the prison system
- sustaining support themed trivia contests;
- organizing conferences to learn and internalize universal values;

The support and religious education activities are part of the efforts of social reintegration and are conducted both by the priest of the prison, and by legal representatives who belong to other recognized religions in the country, under the conditions specified in the regulations in force.

The activities of maintaining physical and mental tone are opened to all detainees, medically capable and how wish to participate in such actions. The administration of the prison has the responsibility to ensure conditions for the practice of games and sports activities, according to health status, ability, age and prisoners' options [23].

Each prison unit is required to organize a library for detainees. The library must include: printed publications, namely books, periodicals,

almanacs, atlases, flyers, etc., recording media, such as discs, audio and video tapes, etc., manuscripts, such as: works and journals made by inmates etc. The library must contain a sufficient number of books, taking into account the cultural and linguistic diversity of the prisoners. Also, the administration of the prison must provide, free newspapers and publications, according to the rules approved by the minister of justice. Also, through the care of the administration, the prisoners can buy, using their own money, books, newspapers, publications, periodicals, magazines, provided they have educational character and content.

The prison administration should provide the possibility of sufficient reception of radio and television programs, national and local. TV and radio equipment can be owned by the prison administration or by the detainee. In all prison units can function: a closed-circuit television studio and a radio station amplifier properly equipped for the transmission and retransmission of shows from national and local radio stations and even programs of their own.

PSYCHOSOCIAL ASSISTANCE ACTIVITIES IN THE ROMANIAN PRISON SYSTEM

Psychosocial assistance activities in the prison system represent specific intervention approaches, conducted by a psychologist and social worker, which are intended to provide qualified support for the psychological and social problems of inmates, during their penalty execution and prepare them for reintegration into family and community after release from prison. Psychosocial support approaches address both the general prison population, and especially the categories of vulnerable persons deprived of liberty, namely: children, youth, women as well as those with special needs, namely: detainees with mental disorders, with history of substance abuse, increased risk of suicide, with aggressive behavior, including sexual, sentenced for longterm imprisonment or even life, or the elderly, etc.. All psychosocial activities are customized depending on the specifics of each category mentioned [24].

The psychologists in the prison establishments have, within their competences, the following authorities and responsibilities:

ensure achievement of the psychological evaluation of persons deprived of liberty;

- > perform counseling and supportive therapy as well as crisis counseling;
- specific interventions for people with special needs and for the vulnerable ones:
- short therapies, focused on a particular issue of the prisoner;
- coordinate and carry out specific intervention programs, targeting vulnerable inmates and those with special needs;

The authority and the responsibility of social workers from the prison system depend mainly on the execution of the following specific tasks:

- conducting evaluations on the social needs of the persons deprived of liberty, in order to identify items of significance, which can substantiate the social assistance and individualization of their sentence;
- giving advice in order to maintain and improve the relations of the detainees with their family and the people around them;
- offering expert advice in the mediation of the relationship between the person deprived of liberty and social bodies, empowered to intervene in resolving its social problems;
- conducting, within multidisciplinary teams, specific intervention programs regarding the vulnerable prisoners and those with special needs;

The educational programs and those of psychosocial assistance held in prisons are designed to preserve and improve the psychosocial status of inmates, by satisfying their development and educational needs, and reducing the negative effects of detention on personality.

CONCLUSIONS

Social reintegration is the basic pillar of ensuring the transition between detention and reintegration into community life. The degree to which workers in the field of social reintegration are involved in the training-release-delivery cycle influences the success of the detainee's reintegration into society with minimal risk of relapse. It needs a new approach, oriented to a greater extent towards the prisoner, giving the

attention needed to the means necessary to achieve the activities.

We can say with the utmost certainty that the prospect of successful reintegration of those who have served a custodial sentence requires a new management approach like the type of case management for the entire period spent in custody, pending release, and even beyond this point. This includes the involvement with authority and responsibility of all interested factors, public institutions, non-governmental and private organizations as well as the inmates in the design, development and implementation of this new management approach.

Considering the scope of education activities and psychosocial support, which constitutes the social reintegration of persons deprived of liberty as well as the positive and negative aspects of the analysis of social reintegration activities in the Romanian prisons system to increase efficiency and effectiveness in this area, it is necessary to recognize and act more consistently in the following areas:

- enhance the qualified personnel, to increase the quality of their work with persons deprived of liberty;
- increasing the attractiveness of vocational training programs through their continuous adaptation to the needs of inmates and the external environment;
- standardizing the social reintegration field and defining some performance indicators as well as quality standards;
- ➤ identifying financial resources sufficient to conduct the educational activities specific to positively influence the quantity and quality of results;
- establishment of organizational structures that can deal with social rehabilitation post-execution;

Also, all staff working in the prison system should recognize that the multidisciplinary educational interventions are conditioned by communication, knowledge sharing and interactions between them and the different interested factors in order to provide opportunities for change of detainees in custody. Promoting public-private partnership for the purpose of social reintegration should be encouraged through the promotion of demonstration projects in cooperation with relevant institutions and joint

actions of the prison and local governments to increase community responsibility, to social reintegration of the ones liberated from detention.

To meet the specific needs of education, personal development and training of prisoners, during the execution of punishment and the social integration after the release from prison, joined works are needed regarding the development of standard procedures in prisons, based on equal treatment of detainees, and participation to the personal development plan in preparation for a free life, without committing crimes.

REFERENCES:

- [1] Ana Balan, Emilian Stanisor, Marinela Minca, *Penology*, Oscar Print Publishing, Bucharest, 2003
- [2] Ioan Băla, "Evolution of the enforcement system of the custodial sentences in Romanian law", Legal Publishing House, Bucharest, 2011
- [3] Braithwaite, J, *Crime, Shame and reintegration*, Cambridge University Press, 1997;
- [4] Cioclei, V., *Criminology manual*, All Beck Printing House, Bucharest, 2005;
- [5] Ioan Chiş, Dragoş Răzvan Niţă, *Executional penal law*, ANI Printing House, Bucharest, 2005;
- [6] Gh. Florian, Penitenciary dinamic. Reform of the internal structures, Oscar Print, Bucharest, 1999;
- [7] Gheorghe Florian, *Prison phenomenology*, Oscar Print, Bucharest, 2003;
- [8] Gheorghe Florian, *Prison psychology*, Oscar Print, Bucharest, 1996;
- [9] Graham W. Giles, *The administration of justice in the community. International standards and regulations*, Expert Press, Bucharest, 2001;
- [10] Lazăr Cîrjan, *Criminal policy. By pardoning we punish*, Communities security magazine, 2001;
- [11] Theodore Aurel Moldovan, "The work of convicted persons", "Official Gazette" Printing Bucharest, 1999
- [12] Moore, S., "Investigating Deviance", Collins Educational, Londra, 1998;
- [13] Newburn, T, "Youth Crime and Justice", în The Oxford Handbook Criminology, Clarendon Press, Oxford, 1997
- [14] Nicolae-Anghel Nicolae, *Law enforcement of criminal penalties*, Titu Maiorescu University Press, Bucharest, 2002; [15] Nistoreanu, G., Păun, C., *Criminology*, Europa Nova Press, Buchurest, 2000;
- [16] Raynor, P., *The Criminal Justice System*, in Beyond Offending Behavior, Arena, Anglia, 1996;
- [17] Rock, P., "Sociological Theories of Crime", în The Oxford Handbook Criminology, Clarendon Press, Oxford, 1997;
- [18] Walgrave, L., "Restaurative Justice for Juveniles", Leuven University Press, Belgia, 1998;
- [19] Young, J., "Zero Tolerance: Back to the Future", în Planning Safer Communities, Russel House Publishing, Dorset, Anglia, 1998
- [20]http://www.wseas.us/elibrary/conferences/2008/crete/ed ucation/education66.pdf

INTERNATIONAL JOURNAL OF EDUCATION AND INFORMATION TECHNOLOGIES Issue 4, Volume 5, 2011

[21]http://www.wseas.us/elibrary/conferences/2010/Buchare st/RIMA/RIMA-48.pdf
[22]http://www.wseas.us/elibrary/conferences/2008/crete/ed ucation/education48.pdf
MEDICAL-40.pdf

[23]http://www.wseas.us/elibrary/conferences/2010/Japan/E DU/EDU-59.pdf [24]http://www.wseas.us/elibrary/conferences/2010/Malta/MEDICAL/