Promoting Inclusion in Higher Education by Adopting the Theoretical Framework of Autopoiesis

Ioannis Kougias[1]
[1]Laboratory of Interdisciplinary Semantic Interconnected Symbiotic Education Environments (InterSy Lab)
Computer and Informatics Engineering Department
Technological Educational Institute of Western Greece, Greece
kougias@teimes.gr

Lambrini Seremeti[1,2]
[2]Faculty of Science and Technology
Hellenic Open University
lamprini.seremeti@gmail.com

Dimitris Kalogeras[1,3]
[3]Secondary School Counsellor of Eastern Greece, Greece
dkaloge@teimes.gr

Abstract
Inclusive education is a modern, worldwide common belief that everyone is entitled to have full and undistracted access to education. Internationally, the phrase "inclusion in education" is now conceptualized as a reform that welcomes, encourages and supports diversity amongst all learners and has gained much importance in recent years. In the context of higher education, diversity, which constitutes a reality, has a dual hypostatis. It can be a possible growing ground for innovation and creativity and, simultaneously, a considerable obstacle. Diverse groups, i.e. academic staff, researchers and students are rather the norm than the exception in nowadays higher education. The basic idea of proposing transformative pedagogical practices to promote meaningful social and academic interactions among heterogeneous groups is not to homogenize these diverse groups but to bridge the gap between them, in order to establish a coherent educational environment. The main goal of this article is to offer an overview of diversity in higher education, as well as the deeper meaning and the conceptualization of the term inclusion. It focuses on proposing the theory of autopoiesis as the foundations of promoting inclusional strategies adaptable to those students who differ in knowledge backgrounds, experiences and views, by acknowledging their possible learning difficulties, disabilities and/or special needs.

Keywords: Autopoiesis, inclusion, higher education, diversity

JEL classifications: I24, I23

Introduction

For the last thirty years, in Europe, there has been a common legal framework on non-discrimination, based on the treaty of Amsterdam (1997), article 13. This treaty states that disability, among others, is prohibited to be discriminated on, which resulted in a series of directives concerning the concept of equal opportunities and a policy

for equal treatment of every citizen, as well as the EU Action Plans developing education for all (Ebersold et al., 2011).

The concept of Inclusive Education is a contemporary worldwide common belief that all people have the right to be educated (Powell, 2012). Internationally, the term is increasingly conceptualized as a reform that welcomes, encourages and supports diversity amongst all learners and has gained much importance in recent years (UNESCO, 2009). It is a formal institution that aims to ensure equal access to educational environments and fair provision of knowledge for everyone and, although, there have recently been rapid developments in this sensitive issue of inclusion of people with learning difficulties and/or other disabilities, both at primary and at secondary school level, in the higher education sector there are still several obstacles and drawbacks, mainly due to the strict and rigid frame of operation and functioning of tertiary institutions. Among these obstacles we notice those of curricula, teaching staff and methodologies, researchers, administrative staff, facilities, timetables, as well as the ways tests and knowledge certifications that are currently offered by higher institutions leave little or no room at all for inclusion of the "different".

Despite the fact that, in every higher education institution, University or Technological Institute, in Greece, there have been some improvements in building facilities, to accommodate and facilitate access for people with special needs and, although, the government legislated a framework toward this, it has not yet been established to fully support students with disabilities throughout the duration of their studies. While in the other two levels of education, primary and secondary, good practices have been adopted, such as integration classes for children with learning difficulties and administrative support for disabled children, where qualified teaching staff encourage, educate and support these particular groups of pupils throughout their schooling, it is something that higher education is still lacking.

The concept of inclusion in higher education is of particular importance if we consider that, on one hand, the proportion of young people with learning difficulties is increasing and, on the other, that this is the level of education directly related to the production process, the country's economy and the society as a whole.

In this paper we aim at proposing a fare, democratic inclusive education policy, based on the dynamics of heterogeneity of learners and distinct knowledge reproduction for each individual. For this reason, once we form conceptually the term of inclusion and democratization within the educational system, an autopoietic educational model is proposed, which will be adaptable to the needs and specificities of people with learning difficulties and/or other disabilities and which will not negatively affect the existing educational system. The rest of the paper is organized as follows: in section 2, the conceptualization of inclusive education is presented, in section 3, inclusion in tertiary education is discussed, in section 4, the concept of autopoiesis is presented and how it works. An autopoietic inclusive educational policy, able to be implemented is given in section 5 and, finally, section 6 concludes the article.

Conceptualization of inclusive education

> We raise the flag for education as a universal human right no one must be denied access because of disability. This is a UNESCO priority, and we are acting across the world to break down barriers for people with disabilities, to empower them as agents of change. This means transforming schools and learning centres. It means adapting teaching practices to cater for all.
> This is why I urge all Governments and development partners, all teachers, parents and private sector providers, to remove the barriers to and in learning, to realize the full and equal participation of all persons with disabilities in society. This is our message for Global Action Week, to build inclusive knowledge societies, where no one is left out. (UNESCO, 2014, p.2)

It is evident, by the above message, that inclusive education and education for all with no discrimination, obstacles and barriers, for a large number of members of the society, let alone the people with disabilities and/or learning difficulties, is not yet a reality. After almost seventy years of the Universal Declaration of Human Rights (1948), Article 26, stating that "Everyone has the right to education", as studies show, more than one billion people around the world have some form of a moderate or severe disability and there are no accurate data indicating the true scale of the discrimination and social exclusion they are facing. This is even more the case when it comes to education-related data, as there is only little information regarding disabled people (UNESCO, 2015).

In most EU countries, Greece too, the situation concerning third level education for persons with disabilities has come a long way and went, up until today, from at least four stages, as depicted in figure 1 (Kearney, A., 2011).

In the first stage there was a total exclusion for all people with impairments, either for the severely hampered, or for those hampered to some extent. They were socially excluded and access to education, especially to third level, was thought of as a privilege not a right.

Then there was a stage of partial exclusion, i.e., separate, distinct groupings of disabled people were offered some chances to third level education access (Gartner and Lipsky, 1987).

In the third stage an integration of education was accomplished, in which these special members of the society were integrated within the system, but still as a separate group, being distinct from the rest of the students (Landrum and Kauffman, 1992).

Finally, attempts have been made, as those of UNESCO that constitute a bright example, for full inclusive education for all, as it can be seen in the last quarter of figure 1 and which our approach is aiming at contributing as well.

In short, figure 1 depicts the development path of the EU Directive concerning special education and, evidently, its last quarter is in progress constituting the main goal of every civilized government.

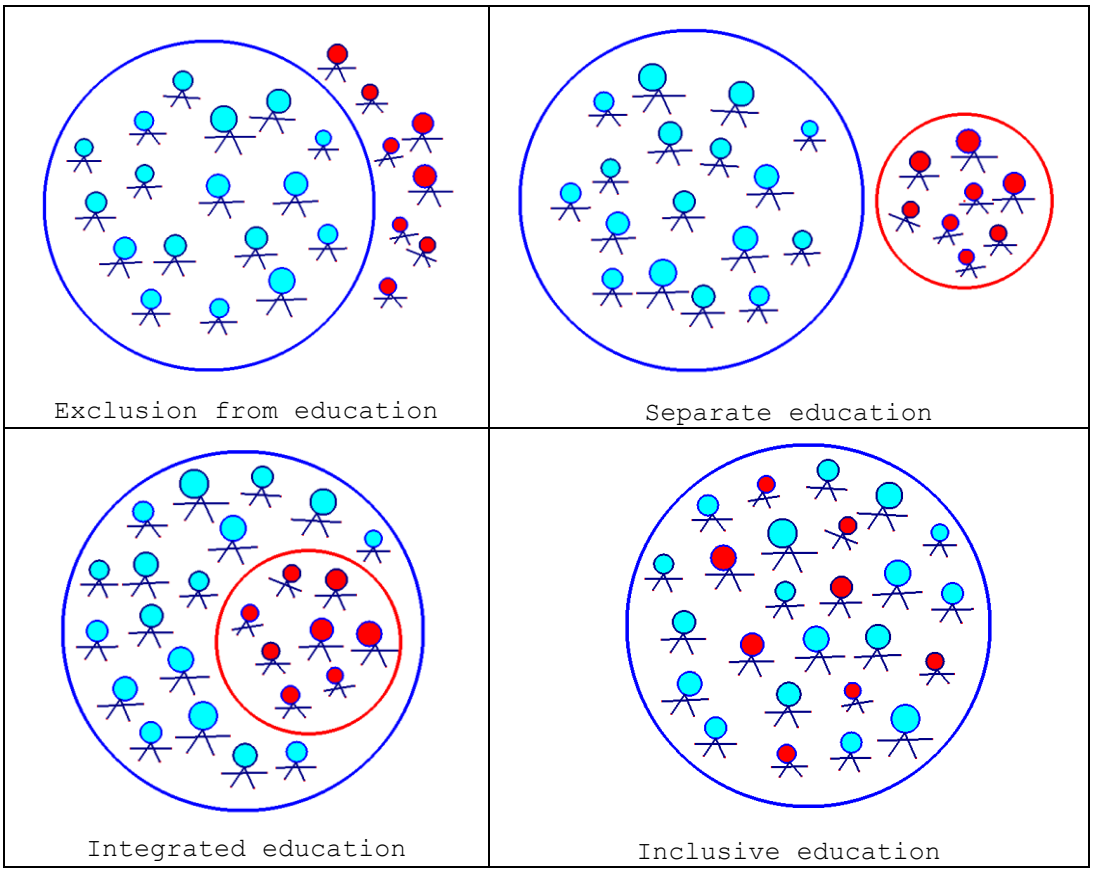

Figure 1: From total exclusion to inclusive education

This development initiative remains at a slow pace due to strict rules within the educational processes, known as "ius cogens", i.e. enforceable measures and/or restrictive principles that are applicable to all with no exception based on the learner's specificities, that is, applicable "erga omnes".

Inclusive in tertiary education

Inclusive education in the higher education sector, up until recently, was limited to the recognition of cultural diversity and only a few years ago new educational policies emphasized the ability of access to higher education for learners with disabilities (Bolt, 2004). More and more disabled and otherwise vulnerable people are entering higher education institutions worldwide, where more and better equipped support services are available for students with disabilities, new teaching approaches focus on additional and targeted support, taking into consideration the nature of all particular weaknesses and disabilities. However, the rhetoric of the support is not consistent with the reality of supply, (Barnes, 2007); at least this seems to be true within the Greek tertiary sector.

Regarding the Greek reality, despite the fact that from 1983 up until now, there have been significant efforts to reduce educational exclusion for people with impairments, the categorization and discrimination in awarding credits to them, as proved by the content of the laws and regulations related to access for persons with special needs in universities, is in contrast with the initial objective that

was to promote equal and fair opportunities to education for all. Apart from the policies for access and enrolment into higher education, there has not yet been formally institutionalized any learning support units for these people, toward the completion of their studies and their introduction to the social and economic development of the country.

When speaking of inclusion in higher education, the main fields of research to be considered are:

- Democracy in education: The learning environment and the learning content (mainstream curricula) today, in all levels of education, can be classified as one that is totally dependent on the teacher. He/she directs all learning processes and fully supported by the educational system creates a closed learning process, which can be authoritarian within the learning environment. In every sector of education, elementary, secondary and tertiary, there is no potential for the trainees to adapt even a single course to their education policy, or to be able to choose a training content outside the strictly mainstream curricula, or to structure their learning needs on a variety of research and learning environments

- adult education: Lifelong learning and adult education are learning fields which take into account the particular characteristics of adults, such as prior knowledge, experiences and expectations of each learning environment. The current educational process is almost equivalent to those of conventional universities and it creates inhibitions and raises many existential constraints on the development of a favourable educational environment. The artificial choice of studies in adult education is a semblance of democratic education since the structuring and the content are decided and selected by the governmental education bodies

- technological developments: The introduction of new technologies in every sector of education is radically and constructively changing the whole landscape, i.e., the way of teaching, studying, learning, evaluating and participating, while, simultaneously preparing users on how to be managed constructively and beyond the educational limitations. The interactions, specifically those of the individual with the PC, the trainer with the trainee, are immediate and greatly improve the learning process. Their use in the educational environments creates a multisensory, pluralistic and open to all space. In particular, for students with special needs due to a disability or learning difficulty, the information technology and the wider supporting technological equipment can be a valuable educational-helping tool for a constructive learning process

- the dynamics of heterogeneity: Within a human society, sharing and exchange of information leading to knowledge, are the building blocks for its development and prosperity. The involvement of the society is achieved today in a very competitive environment, where people coexist with machine-artificial intelligence. The space of action of all involved is composed of disparate autonomous and temporary natural, digital and imaginary objects. The basic requirements for the proper functioning of this area are: the knowledge that each element there (animate or inanimate) possesses for itself, the knowledge that each element has for the others that surround it and knowledge of how each element can communicate and

collaborate with the rest. Communication between physical entities, digital material and the mental model need tools of automatic interpretation and interaction.

Developments in these areas, combined with the particular traits of people with impairments, could give new impetus to education policies in higher education and make it possible to include this sensitive category of learners in a non offending manner, that is, an educational environment must be created within which diversity will not be visible.

Conceptualization of autopoiesis

Autopoiesis, as a concept was introduced in 1972, by biologists H. Maturana and F. Varela to define the self creation, self maintenance of living cells. It is derived from the Greek words "auto" (same) and "poiesis" (creation, production) and it refers to a self-creating and self-preserving "closed system", i.e. a living system having the ability to continuously re-produce and maintain itself. Thus an autopoietic system is not formed under the influence of the environment rather than the environment and the system co-formulate each other through interaction.

It has been widely used as a term and epistemology in evolutionary psychology, sociology, computer science and informatics and scientifically is classified into the field of systemic theory. It is the process by which an organism produces itself (Maturana and Varela, 1980). All living systems maintain their identity due to the fact that they maintain the relations between their elements. Furthermore, autopoietic systems are characterized by the intense presence of particular target.

A key element of the systemic theory, in which the concept of autopoiesis is included, is the autopoietic machine, which determines the organization and functioning of an autopoietic system. It is based on the idea that any system has a structure which is the basis of its behaviour, a behaviour that controls the functioning of the system, which in turn plays a key role in forming the structure of the system. In other words, it is an endless cycle, where the function, structure and behaviour of the system directly depend on one another (figure 2).

The key features of an autopoietic system are:

- Its autopoietic machine is a uniquely identified entity that constitutes a network of functions. These functions interact and are transformed in such a way that they continuously regenerate the network of functions that creates them
- its closeness, i.e., each autopoietic system is distinguished by its functional and organizational autonomy, for it does not allow an external system to intervene directly in its internal function. All that is obvious to an outside observer is the behaviour of the system
- the structural relevance, which means that the system is determined by its structure. In this way, the structure of the system determines the changes that will occur on it as a result of the influence of the environment and what are the effects of the environment "seen" by the system.

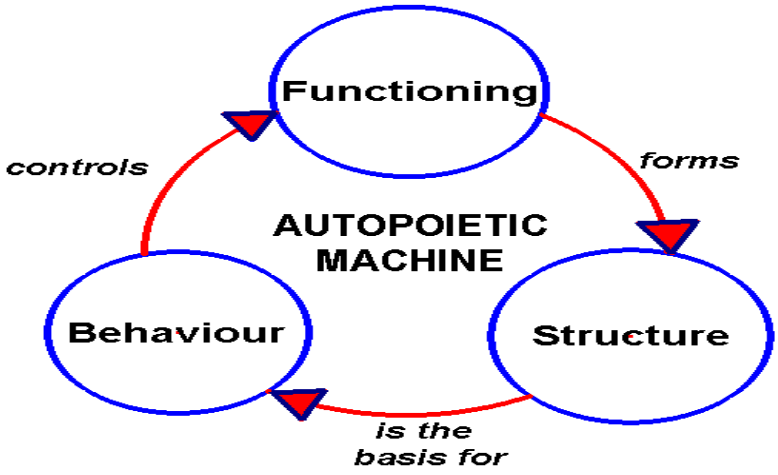

Figure 2: An autopoietic machine

Autopoietic inclusive educational policy

Autopoietic epistemology, as mentioned above, has been widely used in many fields. In Information and Knowledge Management in particular, where the definition of knowledge has always been a contentious issue, since it must be consistent, useful and true in order for the knowledge management to be effective. Even though most definitions meet with the first two criteria, none accurately address all three, including the true, biological nature of knowledge and this is where autopoiesis is helpful (Parboteeah, et al. 2009).

Since an inclusive education system requires effective management of knowledge in higher educational institutions, we believe that the theory of autopoiesis, as the basis for such a policy, can also be the appropriate one because it refers to a "closed" system, where the "conceptualization" is formed in relation to the environment, without the external factors being able to directly affect it. This theoretical framework is directly related to the specific situation of someone with learning difficulties and/or disabilities and who, in order to be able to survive socially and develop his/her psychomotor state should come into contact with other people, become a member of a community, but never be mentally exposed. He/she is "closed", reacts violently to any change, does not accept interference in his/her internal world, and expresses his/her feelings directly. In the learning field that person has his/her own ways and study pace, understanding and implementation.

In this context, to convert the education policy from integration to inclusion, intending to be distinguished from the rest, inclusion demands a deep restructuring, initially regarding the endorsement of the learning process in higher education. One has to lose the strict learning model that is being applied, entrenched by the typical curriculum and timetable of well defined subjects and adopt a more democratic method for selecting learning objects, ways of teaching and scheduling, without degrading the certification validity of an acquired academic degree.

The proposed theoretical approach for an autopoietic inclusive education policy does not intend to eliminate learning difficulties and/or disabilities, but to mobilize their internal energy and to

strengthen social engagement and involvement in those educational environments. It is based on the use of new technologies, which help in adapting subjects according to the particular states of each trainee, in the formation of an acceptable environment of diversity, in the evolution of the academic staff into mentors and supporters of the "new" learning process.

Therefore, we suggest the use of an autopoietic inclusive approach in higher education, where the main feature is the triplet "act-feel-think", in line with the autopoietic machine (figure 3).

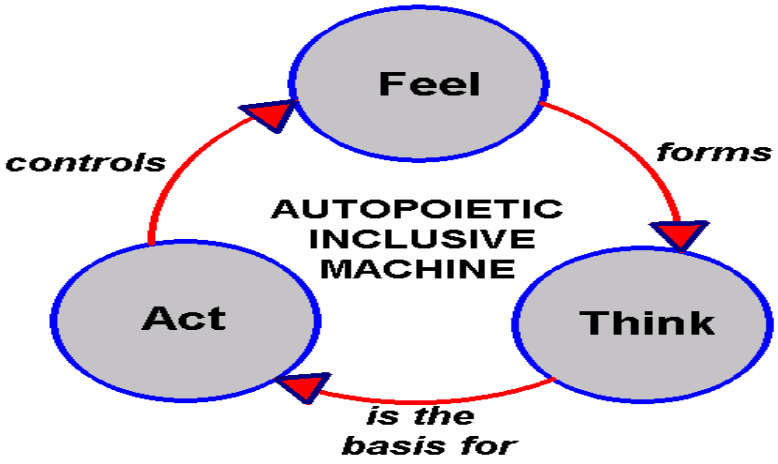

Figure 3: An autopoietic inclusive machine

Based on the concept of the inclusive autopoietic machine, one discovers the theoretical background on which each inclusive education policy should be based on. One ought to think exclusively every person with disabilities as a closed system, which, in order to function, it needs an interaction with the environment, without though this environment to be able to interfere in the functioning of the system and, moreover, without the behaviour of the system to change from the environmental interventions, but only to be visible from it.

The proposed autopoietic inclusive machine has all the features that are relevant with the notions of empathy and comorbidity, which are of basic importance in the improvement of special educational policies (Schwean and Saklofske, 1999).

Conclusion

Education and learning processes concern every human being throughout his/her life. There have been developed theories, regarding learning, that explore and define the matching among teacher, learner, learning materials and learning environments. Recently, various models of educational inclusion that support basic and general education structures have been established, especially for groups with permanent or long-lasting disadvantage. Even though this is true for primary and secondary education, it is not applicable in the higher education institutions due to particularities, such as their strict and rigid frame of operation and functioning, direct interaction with the labour market and their full autonomy regarding educational structure. This type of educational environments is self-regenerating and simulates an autopoietic process that resembles that of a biological creation.

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