

Nonformal learning – a key concept for smart education

Roxana Andreea ANDREI,

National School of Political and Administrative Studies, Bucharest, Romania

roxana-andreea.andrei@drd.snsps.ro

Abstract

The Romanian schooling system needs to be reviewed in the context of sustainable development, considering the issue of general urbanization and urban growth. The concept of sustainable development and the concept of smart city are two synergic concepts that, if implemented by large metropolitan areas could be a recipe for general urban progress and wellbeing.

My objective for this paper is to argue that nonformal education, is a key sector for the implementation of Smart Education. I will answer the research question; “How digitalization in the nonformal education sector is the keypath to sustainable development”. Another objective is to prove that decentralization in education is a model that needs to be applied in the Bucharest schooling system, in order for competencies developed through nonformal education to be taken into account in formal school.

Prior concepts that present the importance of nonformal education are first, the European Nordic Model that explains the good practice of decentralized education. Also, this paper is presenting a different perspective starting from the paper I wrote and is published in the 7th Academos Conference Proceedings from 2020.

Moreover, my approach to the paper is built on the case study of Bucharest and the existence of a nonformal education institution that develops projects for children. My findings show that there is a need for policy improvement at the local level in order to facilitate more access to nonformal education through digitalization. The topic of the paper will be a contribution to the international non-formal education field because I am going to present practices that worked in Bucharest and could be taken into consideration at the European level. Moreover, I argue that nonformal education research is yet to be developed because there aren't studies regarding this field either at the regional, national, or international level, regarding the topic of smart education and quality education through nonformal practices.

Keywords: *Public Projects, Public Funds, Decentralization, Experiential Methods.*

1. Introduction

The Bucharest schooling system is an area that needs attention regarding its development, also by taking into account the general urban growth, which is subsumed by the concept of "smart development", which connects economic development with innovation, new technologies and especially people. A Smart City can only become truly „SMART” if its people(citizens and decidents) and also its institutions are understanding the concept and its needs, implement and apply it accordingly.

In order for citizens to better understand and apply and use newer technologies that sum up the concept of a Smart City, decidents and institutions need to develop educational policies that will help a better transition from a highly inefficient and difficult life to a more sustainable one. In this paper I am going to argue that nonformal education is a successful model for applying the SMART concepts and technology in the educational field.

The "intelligence" of a city is given by its community, both as a goal (urban development aims to increase the quality of life for all inhabitants), as well as resources - education and professional development, civic involvement and volunteering for the community.

The Smart City concept [1] aims at sustainable urban development through innovative solutions, through which traditional networks and services (eg: urban transport, water supply, waste disposal, lighting and heating of buildings, public administration - more interactive and responsive, etc.) are streamlined through the use of technologies digital and telecommunications, for the benefit of the inhabitants, through a sustainable economic development, by increasing the standard of living and the quality of life of the inhabitants.

In order to achieve the goals of building a Smart City or Smart Community, individuals must develop new skills, by learning and accepting the technological means that facilitate the construction of sustainable communities.

The guidelines encountered in the concept of Smart City (Smart Governance, Smart Economy, Smart Mobility, Smart People, Smart Living, Smart Education), will also be based on its citizens and their path and willingness for development. Some examples are found by using technological means to check the hours when public buses arrive near their house, using technological means to rent sustainable transport (eg: electric scooters), and so on.

Considering what I have mentioned, it is absolutely necessary to link education and learning to urban development regarding the concept of Smart City, the economy and the labor market, and to increase through education the degree of civil involvement in the urban environment, including creating greater opportunities for the harmonious relation between work and private life.

2. SMART education

In order to better understand the importance of experiential learning through non-formal education activities, I will make a brief mapping of the concept, as well as the exposure of some models of experiential education that I consider to be effective in Bucharest, ensuring the concept of education for all.

Firstly, although we could assume that nonformal education is a modern term, it was developed in 1970 under the name of nonformal education and has been the subject of several debates that we will address in the following. At the same time, the issue of its effectiveness or the need for non-formal education has been debated for many years, given the existence of formal education. To clarify this, it should be noted that non-formal education is not an opposite concept to formal education, nonformal education has been defined over time as a learning mechanism similar to that of formal education, but lacking constraints like formal forms of addressing, formal lectures and courses and so on [2].

Some authors point out that non-formal education offers more flexibility to beneficiaries, as they can participate in this “learning system” from all backgrounds and all age groups, bridging people with different backgrounds that want to develop together sets of skills in a common topic. So why is non-formal learning or experiential learning a necessity for society? I consider that this question will be answered in the following, being a question that has been debated since the nineteenth century [3].

The first applicability of nonformal education that we can see in history are closely related to the apprenticeship practiced since the nineteenth century by every child /young person who needed to learn a profession to serve them in the future [4]. Thus, a utility that we identify in terms of this classic model of nonformal education is the focus on structuring the skills that help the individual in the development of career/profession.

Moreover, nonformal education at that time can be geared towards learning practical skills that serve to the development of essential skills for economic and social requirements. Consequently, non-formal education supports the preservation of cultural identity.

At the same time, the authors say that non-formal learning through experiential practices supports the accumulation and retention of information to a greater extent than formal education. Thus, in order to develop the young generation and transmit information and culture through experiences (stories/games/art,etc.), non-formal education has more complex components than strictly the acquisition of practical skills, each being necessary.

A leading author who developed the concept of nonformal education before the 1970's is John Dewey, an American philosopher, psychologist, and pedagogue. He speaks in his writings about nonformal education as experiential education, explaining the ways in which education can be developed. Dewey can be considered a pioneer of non-formal education, first discussing in 1916 the principle of experiential education for the coagulation of democratic society. It provides insight into the relationship between experiential learning in the community and problem solving. He believes that experiential education contributes to the coagulation of the community through volunteering, while developing a civic sense in citizens. One perspective is that in order to coagulate democratic citizenship, it is to practice democratic principles through education [5]. At the same time, Dewey sees experiential education as the center of the community, forming whole generations to make it easier to solve problems in the community. In his view, experiential

education contributes to the intellectual and moral development of children and young people [6].

A definition of nonformal education is seen by authors Amanda Neill and Edward Taylor as *any organized, intentional and explicit effort to promote learning to improve the quality of life through the non-school environment* [7].

In their paper, non-formal education is seen as being in a continuous relationship with other forms of education:

from formal education>to non-formal education> to participatory education>to informal education.

Any educational program can be placed in this continuous relationship, determined by the degree of its fit in a certain category. At the same time, the authors talk about three specific features in order to better understand the educational categories mentioned above:

Flexibility (programs meet local needs)

Participation (decision making together - between trainers and beneficiaries)

Contextualization (degree of standardization).[8]

Nonformal education is characterized by flexibility and participation, but less standardized, but more receptive to the needs of the local community. Thus, the authors talk about nonformal education as an important factor focused on the needs of the community. At the same time, they argue the importance of experiential learning through nonformal education in educational centers, museums or in open spaces such as archeological sites. By its very nature, the concept of nonformal education reminds practicing trainers, that most of the learning process takes place outside of class hours. Learning is more effectively practiced in nonformal settings, such as museums or experiential learning centers [9]. It is important to note that these spaces facilitate learning for both children and students, as well as for adults.

Another concept of nonformal education is experiential outdoor education. According to author Craig Von Behren, *an effective space for students to better understand certain topics or lessons and to develop their attention to the environment* [10]. This way of implementing nonformal education activities through experiential outdoor learning also contributes to group cohesion.

Another misinterpretation of nonformal education is that it provides support only to people who can no longer be integrated into school or who have reached the optimal age for school, being called lifelong learning programs such as adult literacy. This misinterpretation has long conflicted with formal education and nonformal education. Lifelong learning or continuous improvement is a beneficial concept for every individual in society, regardless of the education obtained during the school years or the environment to which he belongs.

As mentioned earlier, a beneficial factor of nonformal education is that it is flexible and allows access to a diverse target group in activities that are carried out. At the same time, studies show that adult development is not yet considered a priority, which contributes to the stigmatization of individuals who want to take training courses, especially for teachers whose lifelong development is necessary to facilitate quality education for all. Although steps have been taken over time in

Bucharest to facilitate projects that stimulate lifelong learning and courses accredited by the Ministry of National Education, for teachers constant efforts being needed for all those involved in education.

An example is the need for specialized training courses for areas such as science, IT. To sum up, it refers to areas whose subjects are constantly innovating and require new perspectives of learning and teaching.

Another perspective for understanding nonformal education is that it does not conflict with formal education but works in partnership to facilitate all the skills a child needs for quality educational development.

More clearly, this model of implementing nonformal educational activities for the development new skills among citizens, cities could involve institutions that are decentralized from formal education and offer open access to activities and projects that involve the use of technology for developing skills in children and adults.

Another important point to take into account is that there has been a direct relationship between countries and communities with a tradition in terms of voluntary organizations and openness to nonformal education [11], which I generally refer to as Anglophone or Francophone countries. Thus, there are two structures for implementing nonformal education, either community-oriented, where the needs of a small group of beneficiaries are met, or goal-oriented, through which government organizations or local institutions build nonformal education programs to facilitate an objective or need. identified at the city level.

Given the fact that I have discussed the concept of nonformal education and previously presented some myths that have made nonformal education considered either ineffective or a competitor to formal education, but the reality is that developed countries use much more nonformal education than developing countries that do not receive the same formal education as developed countries.

A relevant example is that "*in the United States, millions of specialists such as doctors, dentists, engineers and other professionals rely on nonformal education to stay connected to new trends in the field or to learn new skills*" [12].

At the same time, we can observe the importance of improving or learning different skills from those in the classical education system through the behavior that companies have in relation to the young people they hire. They invest in training courses for young recruits to facilitate a broader understanding of the field in which they work.

However, through my research I have identified a common point and a key issue in nonformal education, namely the lack of a clear plan for cooperation with relevant actors of interest to the target group chosen by the institution that implements nonformal education projects. Thus, many actors involved in nonformal education fail to achieve the proposed objectives due to the lack of a clear structure. However, implementing a plan similar to the existing curriculum in the formal education would not be effective for non-formal education because by its volatile nature. Thus, it is more efficient to carry out a general project plan that includes objectives focused on the needs of the beneficiary. At the same time, the difference between formal and nonformal education is decentralization, which has proven to be much more effective through the Nordic model that I will analyze in the following.

The Nordic education model encompasses the education systems of Iceland, Denmark, Sweden, Finland and Norway. Although systems and curricula differ from country to country, a number of similarities have been identified that make them examples of good practice among countries on the European continent:

- A. Education for all is one of the educational principles applicable in the Nordic model. This means first and foremost facilitating access to quality education for all, as well as providing opportunities for all children and students to an inclusive education. This principle is achieved by providing free access to education as well as providing opportunities for all children, regardless of the environment to participate in the same education system.
- B. Experiential education is another principle applied in the Nordic educational model, with teachers combining formal education with nonformal education methods and techniques, to facilitate comprehensive learning built through experience and hands-on learning.
- C. Decentralization is another principle that is part of the Nordic education system. Through this system, each local administration can implement its own learning program and structure, being necessary to respect some general directions established at the country level. For this decentralized system to be successful, periodic tests have been implemented to verify the skills acquired by each student.

The decentralized system proved to be functional because it facilitated the flexibility of the education system and provided an opportunity for local authorities to establish programs in line with the needs of the community.

At the same time, decentralization was also favorable for skills acquired in a non-formal setting, with the administration being interested in the results of students in terms of tests measuring competencies and less in the circumstances under which skills were acquired (either formal or nonformal).

3. Organization's involvement in SMART education

It has already become a certainty that we cannot talk about economic, social or human development in the absence of quality education: education should no longer be seen as an "unproductive sector" but, on the contrary. Learning gaps cost the world's economies more than the economic crisis, and reducing these gaps would increase overall economic growth and at the same time shorten the recovery time after periods of crisis [13].

As a result, the development of education has become a priority target for sustainability not only at the national level, but also for the most important international organizations (the UN and UNESCO, OECD and the World Bank, the European Union and the Council of Europe being the most significant). In this part I will summarize the main priorities identified by the listed international bodies.

Quality education is one of the global goals for sustainable development, adopted at the 70th Session of the United Nations General Assembly (September 2015): "*ensuring an inclusive, equitable and equitable education. quality, as well as the promotion of lifelong learning opportunities for all*" [14].

The specific targets for education are as follows:

- Universal access to fair quality education in formal or nonformal settings
- Access to the opportunity for early educational development
- Access to vocational education and training for boys and girls as well as for disadvantaged groups
- Development of skills relevant to the job
- Equality and inclusion
- Developing primary / key competencies for everyone
- Developing education for sustainable development and for global citizenship.

In addition to these priority targets, three preferred ways of implementing them have been identified, all of which are relevant from the perspective of the shared responsibilities of local public authorities in the field of education:

- Efficient learning environment, building and/or renovating educational facilities, “friendly” to all children, regardless of gender and skills
- Direct financial aid (scholarships) - pigs for enrollment in dual education
- Carrying out projects of an educational nature that develop a whole range of skills that support educational development for all
- Qualified teachers - including through international cooperation programs.

The strategic targets and approaches set at the the United Nations level (and of the organizations part of this system - UNICEF, UNDP, etc.) are supported by international evaluations and diagnostic studies conducted by the Organization for Economic Co-operation and Development (OECD), IEA and the World Bank.

OECD - through the PISA programs [15] which assesses key reading, math and science skills for 15 year olds, and PIAAC on essential skills needed for adult life (reading and math, as well as, problem-solving in a high-tech environment) provides a comparative look at the development of these key competencies, for all participating education systems and, implicitly, system-wide development directions.

In the case of PISA, Romania is on one of the last places in the European Union, for all the sets of key competences assessed. In other words, the Romanian educational system does less than the schools in other countries from the EU, in order to overcome/compensate the barriers related to poverty, lack of education, ethnicity, etc.

This demonstrates the need for projects and programs that support quality education for all and the development of key competencies. According to the Nordic educational model, competencies can be acquired in both formal and nonformal contexts. This helped increase the PISA rankings in countries that implement the Nordic educational model.

Although the City of Bucharest does not have a decentralized education system like the Nordic system, I consider the Nordic Model as an example in terms of developing quality education and facilitating opportunities for all. Thus, considering the implementation of nonformal education projects to increase skills and increase PISA rankings as a step towards achieving the goal of sustainable development on quality education. Moreover, nonformal education, as presented earlier, is a key path to Smart education in terms of developing skills that help future and current generations to cope with rapid changes in the field of emergent technologies, but also as a tool for developing new skills using technology.

4. The case study of Bucharest

Continuing the paper I am going to present the case study of a decentralized institution in Bucharest that is part of the City Hall of Bucharest. I chose to present this case study firstly because it is a left initiative from an ideological perspective, most of this type of initiatives around Europe are from a right ideological perspective, carried out by local NGOs.

But, against this background, in Bucharest there is not a wide range of institutions, non-governmental organizations or private units dedicated to nonformal learning or to providing an inclusive quality education for all. The offer for nonformal education that facilitates equal opportunities for all, aiming to support students with activities that contribute to the personal, social and human development of students is carried out only by a few institutions and organizations.

The Center for Educational and Sports Projects Bucharest-PROEDUS, is a public institution that develops nonformal projects for children and youngsters from preschool to tertiary education.

Thus, there are three types of actors that support nonformal education through projects: Bucharest City Hall through its substructures, respectively through PROEDUS and other state institutions, Non-Governmental Organizations operating in small fields or with small groups of beneficiaries and Private Units such as clubs offering nonformal education services.

Thus, the offer of nonformal education that supports students through free projects and activities or that involves low costs for the beneficiary is an area that needs to be developed in order to meet European and UN recommendations on facilitating quality inclusive education for all.

PROEDUS is an institution that has been developing projects in the field of nonformal education since 2009 when it was founded through council decision of City Hall. Since then it developed many projects in different fields such as sports, language, arts, but in since pandemic of Sars-CoV-2 started, as many industries, it had to transfer its activity online. Thus, the pandemic started to become part of our lives, PROEDUS used more and more technology in order to develop new nonformal activities for its beneficiaries.

Prior to the pandemic situation, the approach to the previously identified problems related to the education system was quite simple, considering the usual strategies that could be solved in schools or in informal meetings. Thus, we can say that the standard approach in the realization of projects and programs that support education had more of a physical type of nature. More clearly, most of the meetings, at least during quarantine [16], took place remotely, using relatively recent methods and techniques. Given that at the time of writing this paper no studies have been published in Romania on the situation of adaptability of teachers and students to technological means in education, can still be analyzed some existing studies both nationally and internationally that predict an educational deficit with which we will face in the future if no action is taken on support and help teachers and students.

OECD conducted a study in September 2020 which outlined the situation of lost school days in several countries around the world. It is important to note that the sampling did not only show developing countries, but also showed the status of

the school around the globe. Interestingly, a high-tech country like Estonia could not keep up with online teaching, and Colombia being the country with the fewest missed hours according to the study [17].

At the same time, the analysis carried out by OECD warns of an educational deficit that will have a severe impact on the economy in the years to come. However, like the situation in Romania, most schools had an occasional physical school program, with most courses taking place online [18].

In order to address the educational shortage in pandemics or online schooling to prevent the spread of Sars-CoV-2 or other possible future epidemics, OECD proposes 2 scenarios. OECD acknowledge that there is a discrepancy between teachers mainly in the use of multimedia methods in their lessons, and propose that the most talented teachers take on a larger number of students during online learning. The second proposed option is for the teacher to observe the evolution of a student to understand a certain subject, conducting separate lessons and homework with each student in the class to determine the level. Other possible scenarios that could lead to a better use and understanding of technological means in classrooms (online and offline) refer to training teachers in a nonformal setting to use the computer and some other interactive programs on the computer in order to make interactive classes. This action has been implemented by PROEDUS in 2019 during a nonformal training camp for teachers [19]

Another example of good practice refers to the existence of e-Learning educational platforms (EdX; PBS Kids, Self Learning Hub, Time4Learning, etc.) that provide access to both the student and the teacher to perform simple lessons, having both an attractive and interactive character. These platforms help both teachers and students use nonformal techniques and technological means to prepare a class and help students better understand the curriculum.

As the study from OECD also mentions, students perform much better when lessons have integrated multimedia components and interactive activities in digital school. I reiterate that this proposal for the existence of educational platforms is a necessary factor in pandemic situations, but they can be taken further into classrooms to facilitate more relaxing classes for teachers and interactive for students.

Equally, an example of good practice is the educational platform www.hubproedus.ro which was implemented in 2020 to support students taking online courses. The platform was originally designed to support language course sessions, later becoming a support for students to learn through interactive digital lessons skills that are correlated to the curriculum.

Indeed, in the context of a pandemic, online schooling is the only solution, but later an alternative to online learning is the possibility for students and teachers or other category of people to carry out nonformal learning activities in dedicated spaces such as educational hubs, thematic museums or international learning centers. A well-known example is the Copernicus Science Center. Other examples of educational centers are: Technopolis, Science Museum, International Center for Life, etc. The same initiative has been identified in Bucharest by the Children's Museum, which initiated a learning space for students and children in the fields of science, astronomy, chemistry and physics, biology, geography and history, multimedia and technology, nutrition and health.

5. Conclusions

Concluding this paper I strongly believe that the pandemic showed much discrepancies in the field of education, but also opened new possibilities for learning.

Learning through technological means such as interactive Augmented Reality lessons, such as history classes presented by historical figures, and other multimedia facilitators set in nonformal educational centers could become in the next years a trend for developing skills through gamification. Other alternatives are nonformal robotics classes, nonformal online platforms and so on.

Thus, one suggestion I can make at this time for a post-pandemic world is to analyze the benefits of pandemic projects and programs and adapt them to a non-pandemic context. To be more specific, technological use was higher in education and especially by using nonformal techniques. This means that a mix between technology and nonformal activities in learning can provide a successful setting for learning new skills in a more interactive way.

To sum up, technology is here to stay and the initiatives at local level through City Halls could make Education Smart for its future generations.

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