Chapter 8
Skills Development With Educational Software:
An E-Ecosystem Model

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ABSTRACT

This chapter, analyzing existing theories and eco-systems of learning and communication, capitalizes its components. Taking into account the digital reality that surrounds us and ultimately determines school, academic, professional, and social success, it is proposed an eco-system model for developing the competences of the learner according to the scholar curriculum through digital resources, on the example of using educational software, this being one of the many finished products of information and communication technology (ICT) that the actors of an educational process can now benefit.

INTRODUCTION

Digital educational resources appear to have some specific features that cannot be ignored for effective learning and communication. Understanding this is important to perceive the feasibility of educational software. Let us explore the affordability of educational software for competence development. There are some important things to remember:

- Knowledge of accurate data is not enough for the capacity of life-long learning;
- Rational application of knowledge is the indicator of the quality of learning;
- Skills to be formed and developed throughout the educational act must be traced and measurable;
- Teaching should be centered on educational objectives.
- Main roles of teacher are to mentor, guide, facilitate and/or to model effective didactic situations.

DOI: 10.4018/978-1-5225-7853-6.ch008

Taking into account the actual challenges and the interconnections of the above mentioned elements we set up the following specific objectives and the research design of the proposed chapter:

- To analyze the concept of competence in the context of a curricular framework (the order of ideas can be transposed into the process of studying any learning object);
- To examine the existing ecosystems-based theoretical models of learning and communication taking into account interconnections between learner and his/her environment (i.e. Family, house, school, society, etc. In a context of curriculum development / development);
- To describe the association between resources, tools and real/virtual environments, on the example of educational software
- To develop a model suitable for development of some curricular competences;
- To describe the specific features of the model for teaching.

BACKGROUND

There are many ecosystems-based models for human development and learning such as:

- Bronfenbrenner's Ecological Framework for Human Development
- Zhang and Maesako model
- Sugai, Maesako, Spirol and Nonaka's Spiral-based Ecosystem of Learner Development;
- Teacher Job-hunting Cooperative Network, 2008, etc.)

All these are social-ecological systems in which processes related to educational system carry out hierarchically and at different levels. Because in the meantime have been appeared new media and mechanisms of social interaction and, so, educational, it would be necessary to develop new methodologies that would make/ensure the interrelation between all actors of the educational process, such as teacher-pupil, pupil-teacher, pupil-pupil, etc. Therefore, the problem of the present research can be defined as one which consist in updating of TELCM (existing so far) in which, for aim reasons, the components of skills and ways (paths, methods, strategies, tools, etc.) for the training and development.

In order to solve the problem, it is arguing the importance of:

- New educational and digital technologies on learning path;
- Innovative techniques and methodologies in cutting-edge educational technologies;
- Importance of formal, non-formal and informal education convergence for life-long experience.

In turn, all these factors constitute elements of the ecosystems learning and communication models, that according to Bronfenbrenner's Theory, could be identified at the microsystem level (i.e. family, school, health services, church, peers) and partly at the exosystem level (i.e. mass media, neighbors etc.). Results of relationships between the given entities, in their potential, represent the mutual actions of/ between individuals, groups, organizations and their environments. Research shows that the complexity of human situations influences some cumulative events over time (McLaren & Hawe, 2005).