



Education and Culture DG

Lifelong Learning Programme

Evaluation toolkit on seniors education to improve their quality of life

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1. Executive Summary

The report aims to explore senior education models and theoretical basis for senior education. The report comprises senior education theory, principles and types of analysis, as a result of proposed seniors' education model.

Theoretical background given for the educational model of seniors, which includes Behaviorism, Cognitivism, Constructivism and Connectivism approaches.

2. Types and principles of Education for Seniors

Education is one of the social institutions that contributes significantly towards the construction and maintenance of social order (Ifeanacho in Anikpo & Atemie 2006, p. 82). Education has been defined as a process by which a young adult develop the abilities, attitudes and other forms of behavior which are of a positive value to the society in which he lives (Fafunwa, 1974, p. 17). According to Freire (1970, p. 25), education is a form of power—namely the ability of an individual to be critical of his context, which by implication enhances people's empowerment through increased awareness.¹

As Fordham (1993) relates, in 1967 at an international conference in Williamsburg USA, ideas were set out for what was to become a widely read analysis of the growing 'world educational crisis' (Coombs 1968). There was concern about unsuitable curricula; a realization that educational growth and economic growth were not necessarily in step, and that jobs did not emerge directly as a result of educational inputs. Many countries were finding it difficult (politically or economically) to pay for the expansion of formal education.

The conclusion was that formal educational systems had adapted too slowly to the socio-economic changes around them and that they were held back not only by their own conservatism, but also by the inertia of societies themselves. If we also accept that educational policy making tends to follow rather than lead other social trends, then it followed that change would have to come not merely from within formal schooling, but from the wider society and from other sectors within it. It was from this point of departure that planners and economists in the World Bank began to make a distinction between informal, non-formal and formal education. (Fordham 1993: 2)

Formal education: the hierarchically structured, chronologically graded 'education system', running from primary school through the university and including, in addition to general academic studies, a variety of specialized programmes and institutions for full-time technical and professional training.

Informal education: the truly lifelong process whereby every individual acquires attitudes, values, skills and knowledge from daily experience and the educative influences and resources in his or her environment - from family and neighbours, from work and play, from the market place, the library and the mass media.

¹ http://www.ijrsre.com/Vol,%201_1_-Egbezor%20&%20Okanezi.pdf

Non-formal education: any organised educational activity outside the established formal system - whether operating separately or as an important feature of some broader activity - that is intended to serve identifiable learning clienteles and learning objectives.

A Council of Europe "working group on non-formal education" has elaborated its own definition of **non-formal education** as a "planned programme of personal and social education designed to improve a range of skills and competencies, outside but supplementary to the formal educational curriculum. Participation is voluntary and the programmes are carried out by trained leaders in the voluntary and/or State sectors, and should be systematically monitored and evaluated, the experience might also be certificated. It is generally related to the employability and lifelong learning requirements of the individual person." <http://assembly.coe.int/documents/workingdocs/doc99/edoc8595.htm>

Continuum

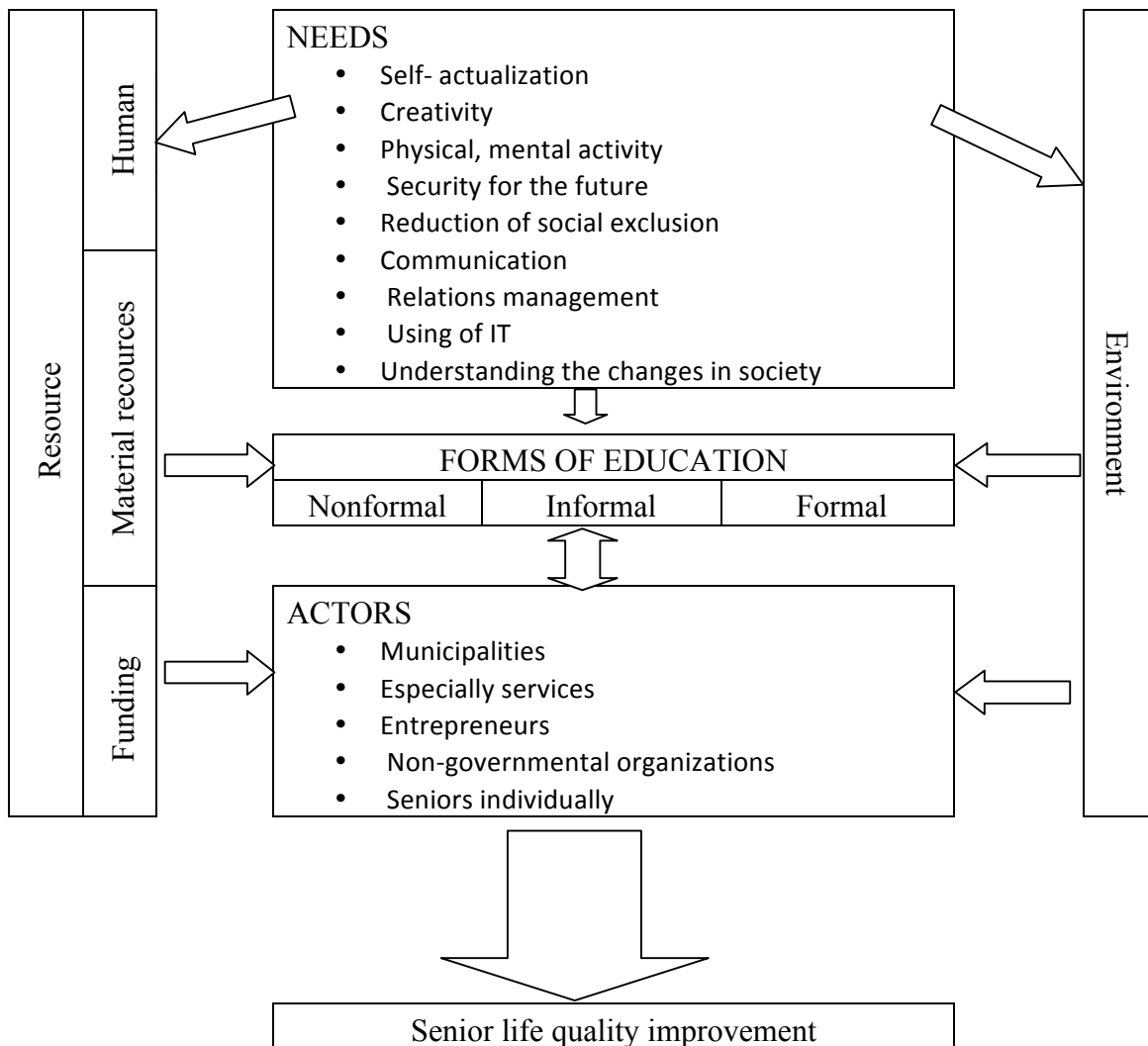
	Formal (F)	Nonformal (N)	Informal (I)
Teacher/Student dynamic	F Pre-established hierarchy	N Equal partnership among facilitators and participants	I Learning may take place individually, or can be shared within a group
Environment	F Classroom environment	N Learning setting is more casual and impromptu	I Learning may occur in any environment
Content	F Determined by teacher or other authority	N Participants actively identify learning needs and methods, guided by a facilitator	I Determined completely by participants who assess own needs and identify solutions
Teaching/Learning methods	F Lecture primary source of information delivery	N Primarily participatory techniques	I Completely participatory methods; participants assess and reflect on their own learning
Teaching/Evaluation tools	F Formal test or "proof of learning"	N Formal tests are supplemented with students' application of learning within the community	I Learning is practical and related to real needs; applied in the lives of people within the community

Adult Learning Principles

Adults:

- Expect to be treated with respect and recognition.
- Want practical solutions to real-life problems.
- Can reflect on and analyze individual experiences.
- Have different learning styles.
- Are motivated by the possibility of fulfilling personal needs and aspirations.
- Are capable of making their own decisions and taking charge of their own learning.

Educational model of seniors



3. Theoretical background for the educational models of seniors

As a consequence of globalization, continuous technological innovation, and demographic population shifts occurring worldwide, seniors have to be more intelligent about “lifelong learning” term. This presumably to remain sustainable in a changing world increasingly requiring multi-cultural competence and more frequent updating of our knowledge, skills, and attitudes.

There are three major paradigms that describe and ground pedagogical and andragogical learning theory and practice: behaviourism, cognitivism and constructivism.

For any educational institution interested to implement an educational program to senior citizens must be aware of some concepts that are related to this specific social group.

3.1. Behaviorism

Behaviorism is a worldview which saw learning as a straightforward process of response to incentives.

The learner is as a clean slate and behavior is shaped through positive reinforcement or negative reinforcement. Both positive reinforcement and negative reinforcement increase the probability that the antecedent behavior will happen again. Behaviorists assert that direct observation and feedback are determinant factors for modelling of learning process.

Behaviorist theory presents learning in short manageable blocks that build on previously learned behaviors. Kearsley (1994)² identified three fundamental principles common in behaviorist learning:

1. Positive reinforcement of the desired behavior will most likely prompt the same behavior.
2. Learning should be presented in small manageable blocks.
3. Stimulus generalization of learning can produce secondary conditioning.

Behaviorism states that learning is generally unknowable, that it is not possible to understand what goes on inside a person (the “black box theory”). Spillane (2002) states, “the behaviorist perspective, associated with B. F. Skinner, holds that the mind at work cannot be observed, tested, or understood; thus, behaviorists are concerned with actions (behavior) as the sites of knowing, teaching, and learning” (p. 380).³

Gredler (2005)⁴ expresses behaviourism as being comprised of several theories that make three assumptions about learning:

1. Observable behaviour is more important than understanding internal activities
2. Behaviour should be focused on simple elements: specific stimuli and responses
3. Learning is about behaviour change

² Kearsley, G. (1994). *Explorations in learning & instruction: The theory into practice database*. [Online]. Retrieved from <http://tip.psychology.org>.

³ Spillane, J. P. (2002). Local theories of teacher change: the pedagogy of district policies and programs [Electronic version]. *Teachers College Record*, 104(3), 377-420.

⁴ Gredler, M. E., (2005) *Learning and Instruction: Theory into Practice* – 5th Edition, Upper Saddle River, NJ, Pearson Education.

The goal of this learning method is to transform the learner's behavior to a "desired" behavior. The learner is rewarded often for exhibiting the desired behavior when they accomplish a learning block.

Behaviorist Theory maintains a focus on the change in observable behaviors as the manifestations of learning. The theory emphasizes changes in behaviors due to the influence and control of the external environment, rather than the internal thought process of the subject (Merriam & Caffarella, 1999).⁵

Behaviorism seems more appropriate to understanding how younger students can learn (e.g., cognitive and affective learning), but may be applicable to adult learning objectives as in the case of psychomotor skills development (Cross, 1981).⁶ Behavioral approach can effectively facilitate mastery of the content (knowing what) or when learning environment is time limited.

Behavioral tasks requiring a low degree of processing (e.g., basic paired associations, discriminations, rote memorization) seem to be facilitated by strategies most frequently associated with a behavioral outlook.

It could be argued that this theory tends to diminish the possibilities in human learning. In some circumstances, however, this method of learning is necessary; particularly when dealing with individuals with lower reasoning abilities or lower intelligence. While Behaviorist Theory was founded in the early decades of the twentieth century, there still exist many examples of support for the theory.

3.2. Cognitivism

Cognitivism is most often associated with Piaget (1952) was popularized as a response to Behaviorism. Cognitivists faulted Behaviorism for a difficulty in accounting for higher order thinking skills and a lack of focus on the mind in learning (Ertmer & Newby, 1993⁷).

Knowledge can be seen as schema or symbolic mental constructions. Learning is defined as change in a learner's schemata.

Cognitivists are concerned with how learners "how information is received, organized, stored, and retrieved by the mind" (Ertmer & Newby, 1993, p. 53). It is often associated with schema theory, information processing theory, and the "mind as computer" metaphor of cognition. It focuses on the promotion of mental processing; how learners think through problems. It endeavors to make learning meaningful to each learner for a particular context (Ertmer & Newby, 1993). The focus is on how learners interact with and process the world.

For Cognitivists, the learning environment is only part of the learning process. It is the most immediate, but it does not and cannot account for individual learners' interaction with the content and the connections that they build between existing concepts and new concepts. These interactions are iterative and accumulative resulting in increasingly complex understandings (Boudourides, 2003). Cognitivists would likely agree that, though there is a correct answer, no two people come to it in exactly the same way.

Tasks requiring an increased level of processing (e.g., classifications, rule or procedural executions) are primarily associated with strategies having a stronger cognitive emphasis (e.g., schematic organization, analogical reasoning, algorithmic problem solving).

⁵ Merriam, S. B., & Caffarella, R. S. (1999). *Learning in adulthood: A comprehensive guide*. (2nd ed.). San Francisco, CA: Jossey-Bass.

⁶ Cross, K.P. (1981). Adults as learners: Increasing participation and facilitating learning. San Francisco: Jossey-Bass

⁷ Ertmer, P., & Newby, T. J. (1993). Behaviorism, Cognitivism, Constructivism: Comparing critical features from an instructional design perspective. *Performance Improvement Quarterly*, 6(4), 50-71.

3.3. Constructivism

Constructivism promotes a more open-ended learning experience where the methods and results of learning are not easily measured and may not be the same for each learner.

Constructivism is a synthesis of multiple theories diffused into one form. It is the assimilation of both behaviorist and cognitive ideals. The “constructivist stance maintains that learning is a process of constructing meaning; it is how people make sense of their experience” (Merriam and Caffarella, 1999, p. 260). This is a combination effect of using a person’s cognitive abilities and insight to understand their environment. This coincides especially well with current adult learning theory. This concept is easily translated into a self-directed learning style, where the individual has the ability to take in all the information and the environment of a problem and learn.

Constructivist theory's (J. Bruner) main theme is that learning is a process in which the learner is able to build on present and previous information. The student is able to take information, create ideas and make choices by utilizing a thought process. The trainer should encourage the student to develop the skills to find out principles on their own.

Learning is more effective when new information is connected to and built upon a learner’s prior knowledge and real-life experiences.

In such an environment, the instructor becomes more of a facilitator and moderator and serves mainly to keep seniors focused as they share their views and perspectives and actively contribute to the subject matter being explored. A collaborative setting provides students with the greatest opportunity to (1) connect new information to their existing base of knowledge and real-life experiences, and (2) reconstruct and transform their prior knowledge and cognitive processes to enhance their understanding of the subject being explored.

Learners must construct their own schemas (Ahm, Brewer, & Mooney, 1992; Brower & Nurius, 1993; Dopkins, Pollatsek, & Nordlie, 1994) and solutions to problems by actively revising, restructuring, experimenting with, and placing the new information into their existing cognitive structures.

Information that is simply memorized and unrelated to the learner’s world view will be quickly forgotten.

Spigner–Littles and Anderson (1999) have founded that older learners thrive when learning activities are structured to:

- help them develop new skills;
- challenge their pre-conceived notions, attitudes, and beliefs ;
- help revise their world views;
- encourage and promote self-regulation in the learning process.

Most older learners have well-formed expectations and tend to approach their classes with commitment and a strong sense of personal responsibility. The inner motivation to develop a useful skill or new knowledge usually gives older students the impetus to structure activity so that their learning will be active and purposeful (Llewelyn & Dunnett, 1987).

The learning process among older learners is most effective when new information is connected to and builds upon prior knowledge and real-life experiences. Also older learners tend to be emotionally attached to the beliefs, knowledge, values, and world views that they have developed over a period of many years. Seniors are accustomed to exercising judgment in setting priorities and allocating their time. The instructor’s instructional responsibility is not simply to provide open-ended learning, but rather to develop a set of meaningful paths through the learning process. What seems most important to older learners is having instructors who can effectively assist students to develop knowledge-building skills and

capabilities that enable students to construct their own understanding of each concept and relate that understanding to real-life situations. As a result, they tend to seek more flexibility in the scheduling of and control over their learning experiences. Creative teaching strategies can offer the older learners greater opportunities to participate in the planning and pacing of their course work. (Spigner–Littles and Anderson, 1999)

3.4. Connectivism

Connectivism presented by Siemens (2005)⁸ is considered as a new view of conceptualising of the learning processes in the digital age. Connectivism is the integration of principles explored by chaos, network, and complexity and self-organization theories. In this view of learning, networks (neural, social, and technological) represent a distributed view of knowledge. In the brain, knowledge is distributed through connections between different regions of the brain and in the networks we form (social and technological) knowledge is distributed through connections between individuals, groups, and devices (Siemens, 2006⁹). It means that network connections between learners are not just sources of information, but the connections that make a part of their knowledgebase. This focus on connections between learners and information sources sets Connectivism apart from previous theories of learning.

Siemens defines the structure of a network as having a minimum of two elements: nodes and connections. Within the network, a node is any element (people, places, devices, etc.) that can be connected to any other element. (Siemens, 2005, p. 5)

Principles of connectivism (Siemens, 2004):

- Learning and knowledge rests in diversity of opinions.
- Learning is a process of connecting specialized nodes or information sources.
- Learning may reside in non-human appliances.
- Capacity to know more is more critical than what is currently known.
- Nurturing and maintaining connections is needed to facilitate continual learning.
- Ability to see connections between fields, ideas, and concepts is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
- Decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

Siemens (2004)¹⁰ points to the limitations of traditional learning theories (behaviorism, cognitivism, and constructivism) as they do not explain learning processes that occurs outside of people

⁸ Siemens, G. (2005). Connectivism: A learning theory for the digital age [Electronic Version]. *International Journal of Instructional Technology and Distance Learning*, 2. Retrieved January 7, 2007, from http://www.itdl.org/Journal/Jan_05/article01.htm

⁹ Siemens, G. (2006). Connectivism: Learning theory or pastime for the self-amused? [Electronic Version]. *elearnspace*, 1-43. Retrieved September 9, 2007, from http://www.elearnspace.org/Articles/connectivism_self-amused.htm

¹⁰ Siemens, G. (2004). Connectivism: A learning theory for the digital age. Retrieved from

(knowledge or information could be stored and manipulated by technology) and within organizations. Learning theories should be adjusted in a time as nowadays technology could realize many of the cognitive operations (retrieval and information storage) previously performed by learners. Learning is no longer a process that is entirely under the control of the individual, an internal, individualistic activity: it is also outside of ourselves, within other people, an organization or a database, and these external connections, which potentiate what we can learn, are more important than our current state of knowing .

In particular, the issue of whether connectivism has a theory status is under the discussion (Kerr, 2007,¹¹Kop & Hill, 2008¹²). There is an argument that theories can be complementary. It could be challenged for connectivism as there is no enlarging of existing principles of previous theories (Verhagen, 2006¹³). He argued that Connectivism is not a learning theory, but rather a view of 21st Century skill sets. Although Siemens recognizes the paradigm shift that is taking place in learning, its contributions do not merit its treatment as a new and free-standing theory (Kop & Hill, 2008). Connectivism made a big splash in the blogosphere after the publication of Siemens' article in 2004, but had a relatively small impact in scholarly publishing (Bell, 2011)¹⁴. He argues that connectivism makes its contribution mainly as a *phenomenon*, "a thing as it appears, rather than as a thing in itself".

Regardless of whether it is a theory or not there is acknowledgement that it is a fresh way of conceptualising learning in the digital age.¹⁵

None of the various pedagogical models stemming from different theories or paradigms is the most appropriate under all the circumstances and situations, but each enlarges our understanding of the learning process. Therefore, the educators have to know and understand the strengths and limitations of each learning theory to optimize their use in appropriate situations.

Seniors' development tasks:

- self-acceptance, awareness of own peculiarities and reorientation of the value system;
- evaluation of life, search of new socially significant activities;
- physical and mental activity appropriate to age, adaptation to health problems;
- personal communication with other people;
- acquisition of new types of recreation and hobbies;
- participation in various voluntary organization activities (Liegeniece, 2002, Fales, 1996, Knowles, 1980).

<http://www.elearnspace.org/Articles/connectivism.htm>.

¹¹ Kerr, B. (2007, February). A Challenge to Connectivism. Transcript of Keynote Speech, Online Connectivism Conference. University of Manitoba. Retrieved from

http://lrc.umanitoba.ca/wiki/index.php?title=Kerr_Presentation

¹² Kop, R. & Hill, A. (2008). Connectivism: Learning theory of the future or vestige of the past? *International Review of Research in Open and Distance Learning*, 9(3)

¹³ Verhagen, P. W. (2006). Connectivism: A new learning theory? Retrieved from

<http://elearning.surf.nl/e-learning/english/3793>

¹⁴ Bell, F. (2011). Connectivism: Its Place in Theory-Informed Research and Innovation in Technology-Enabled Learning. *International Review Of Research In Open And Distance Learning*, 12(3), 98-118.

¹⁵ Boitshwarelo, B. (2011). Proposing an Integrated Research Framework for Connectivism: Utilising Theoretical Synergies. *International Review Of Research In Open And Distance Learning*, 12(3), 161-179

The theoretical basis of development task achievement and training organization is built up on behaviorist, constructivist, cognitivist and connectivist cognitions.

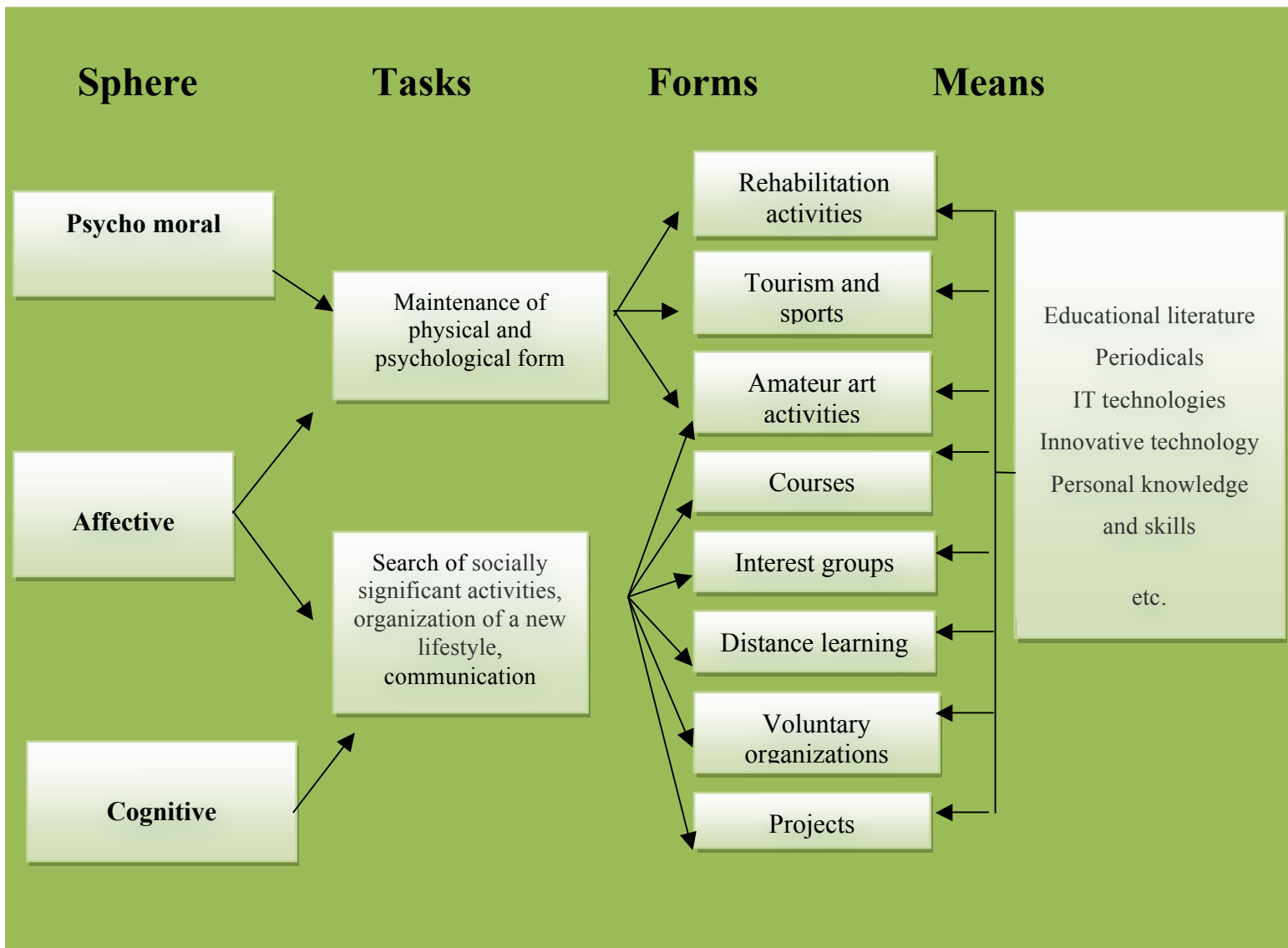
	Behaviorism	Cognitivism	Constructivisms	Connectivism
Description	May be applicable to adult learning objectives as in the case of psychomotor skills development Behavioral approach can effectively facilitate mastery of the content (knowing what) or when learning environment is time limited.	Learning is a dynamic process of individuals' creative communication that occurs by observing the activities of others, but the obtained experience and information influence person's sphere of activity.	In the result of experience and during the whole life a person forms his/her own individual world perception model (construct). There is importance of adaptation (new impressions supplement the existing structures, the new becomes a part of the old) and accommodation (inclusion of new information into existing cognitive schemes, its adaptation). It is important to allow learners the choice and autonomy to develop learning in their own way by giving them space to follow their own individual interests and understandings, and by recognizing that this process will be different for each learner.	A learning theory for the digital age. Learning is a process of connecting specialized nodes or information sources. Ability to see connections between fields, ideas, and concepts is a core skill. Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities. Decision-making is itself a learning process.
How learning occurs	Train responses using behavioral techniques Break complex behaviors into simple chains Reward performance	Build on learner's existing knowledge Ensure the learners understand what they have learned	Allow choice and autonomy to develop own style Allow learner follow own interests Combine new and old information Adapted for each learner	Distributed within a network, social, technologically enhanced, recognizing and interpreting patterns Ability to see connections between fields, ideas, and concepts is a core skill. Setting not based in the classroom or in proximity to the person, but a distance Informal learning is a key element to providing the flow of information in connected societies
Influencing factors	Nature of reward, punishment, stimuli	Existing schema, previous experiences	Engagement, participation, social, cultural	Diversity of network, strength of ties

In Senior Education Training the forms, methods and means are selected according to the sphere of development and related tasks.

Cognitive sphere refers mainly to information processing and knowledge acquisition process. Learning in the cognitive sphere means to acquire knowledge. Such kind of learning is based on the use of intellect.

Psychomotor sphere is the development of muscles and motor skills. Learning in psychomotor sphere means to get person's desired physical abilities.

Affective sphere is characterized by emotions, attitudes, value orientation and others related to changes in human behavior and formation of confidence.



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Change log

Name	Date	Description
Name of the person that did the modification	Date of the modification 20.12.2011 21.12.2011 02.03.2012 08.02.2012 20.02.2012	Short description of modifications done
Researcher: Velta Lubkina, Aivars Kaupuzs, Svetlana Usca		Discussion about the educational models Preparing the educational model after discussion Discussion about the theoretical background of educational models and preparing materials Discussion about senior education methodology and preparation materials
Technical: Gatis Lubkins		Technical preparation materials for EDUSEN webpage and web page of RHEI Technical collections of research materials



Education and Culture DG

Lifelong Learning Programme

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