

**THEORETICAL AND PRACTICAL APPROACHES
TO NON-FORMAL EDUCATION**

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TO NON-FORMAL EDUCATION**

**Interdisciplinary Examinations
into Various Instructional Models**

Edited by

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and
Margareta M. Thomson, PHD**



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*Theoretical and Practical Approaches to Non-Formal Education:
Interdisciplinary Examinations into Various Instructional Models*

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Preface

The current volume compiles recent research describing theoretical and practical approaches to non-formal education and examines several unique views about learning and instructional modes. Non-formal education responds to the needs and interests of a large number of learners who want to be involved in enjoyable and resourceful activities.

In this collection of work, the contributing authors tackle the topic of non-formal education from a variety of disciplines, such as computer science, psychology, education, science education, literacy, music, art, and social studies by sharing original perspectives, and proposing novel educational approaches. The book chapters present insights into designing and carrying out non-formal education activities, operational management strategies related to non-formal education, activating and creating the well-being of participants in non-formal education activities, and implementing active learning.

The current volume appeals to a wide audience, including teachers, parents, students, and education specialists, as well as researchers and community members working with youth and children. Moreover, this volume appeals to an international audience, as the contributing authors are from various countries, including the USA, Indonesia, Italy, Romania, and Spain. The interdisciplinary and global perspectives presented in the current volume makes it not only valuable for the educational field, but unique, compared to similar publications in the field.

Introduction

Most often, learning is associated with formal education, specifically the work completed in school, and the view that the typical learning outcomes acquired in school, consisting of knowledge and skills, can lead to the development of general or professional abilities. Students' general and domain knowledge are usually formed and developed in formal settings, which ensure their subsequent integration into society. However, despite training for integration into various professions, the formal education system does not meet entirely all individuals' educational needs. Oftentimes, the individual has to find other sources of personal enlightenment, and non-formal education is one of these sources.

Non-formal education has been part of the international conversation on sustainable education since early 1970. It is often associated with concepts related to intermittent and lifelong learning and consists of engaging and motivating activities that offer a different approach to learning various skills and competencies, including building upon skills taught in schools. Via non-traditional education individuals are nurtured into acquiring not only specialized knowledge and skills, but are also guided into harmoniously developing transversal competences, such as communication, collaboration skills, critical-thinking, creativity and self-awareness. Key components of non-formal education are related to several aspects, such as relevance to the needs of disadvantaged individuals or groups, concern with specific categories of learners, a clearly defined purpose, and flexibility.

Non-formal education consists of any educational program organized by specialists outside the school system, which forms a bridge between the theoretical knowledge taught in school and the practical applications taking

place outside of school. This fresh approach to training and instruction, eliminates the stress of grades and ratings, required subjects, and mandatory homework. Rather, a non-formal approach to education is relying on the individual's desire to choose areas in which they are intrinsically motivated, seek personal and academic fulfillment and thus, become actively involved.

Non-formal education is not a replacement for, or alternative to traditional education, but a complementary source of activities that should be accessed by as many individuals as possible, particularly youth and children. These active learning activities enable students to advance their professional training, develop fundamental literacy skills for economically disadvantaged social groups, and engage in social networks helping them develop interpersonal relationships.

It is important to understand the organizational framework in which non-formal education activities take place, including the goals and activities that contribute to the individual development of each participant. It is recommended that non-formal education activities should be designed with a framework that allows individuals to make choices, provide an appropriate level of autonomy, competence and relatedness. Also, non-formal activities can be developed by specialists from various areas, thus appealing to learners through a sense of interdisciplinarity, flexibility, adaptability, and originality. The goal of non-formal education should be aligned with learners' interests, skills, and motivation for engaging.

Daniel Mara
Margareta M. Thomson

CHAPTER ONE

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Strategies for Designing and Implementing Non-Formal Educational Activities

Daniel Mara

1. Key principles in non-formal education

During the process of training and development of young students, various learning experiences occur such as, formal, non-formal, and informal learning. Recent international education policies pay special attention to lifelong learning and formulate policies to help promote student skills and learning outcomes associated with lifelong learning. In this regard, UNESCO, UNICEF, as well as the European Council, encourage all member states to promote equal opportunity and equity in education by recognizing the competences of young people acquired through both formal and non-formal education (Fennes & Otten, 2008; Yasunaga, 2014). It is important that education specialists and policymakers keep in mind that non-formal education represents an essential part of learning and supports lifelong learning processes. Following recommendations for the promotion and recognition of the training process for non-formal education of young people, the European member states for instance, are engaged in developing efficient standards in order to recognize the role of non-formal education in learning (Fennes & Otten, 2008).

Inclusive education should promote personal fulfilment, active citizenship, social inclusion, and employability. The necessary skills that enable people to become more informed, active, and responsible citizens are attained through lifelong learning. Young people, in particular, attend a variety of

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activities outside of formal educational, such as social and cultural youth activities, sports, and volunteering. Non-formal education activities take place outside the formal education curriculum, are voluntary, and are carefully designed and developed to promote participants' personal, social, and professional development. In Europe, most citizens have participated in formal education, often through a "vertical" relationship between students and teachers: the one who possesses and disseminates the knowledge (the teacher), and the one who receives them (the student). In contrast, non-formal education emphasizes "learning by doing." Learning happens through interaction between participants and the concrete situations they encounter. There are no instructors using a top-down teaching style from their desks; students, young people, and the educators (trainers) develop knowledge and skills together, in a "horizontal" relationship. The European Commission's White book for youth emphasizes that youth associations, social workers, and local authorities in many countries are involved in various youth activities.

2. Effective learning patterns in non-formal education

Learning is an important process that guides all forms of education, including formal, non-formal, and informal. It is a complex and dynamic phenomenon that has been the subject of various fields of research, including psychology, pedagogy, and biology. From a psychological perspective, learning is meant to change human behavior in a specific situation. At a basic, elementary level, learning is an immediate action or response to environmental and physical stimuli. At a more complex level, learning develops through "the symbolic representation" of long-term stimuli at different levels of conceptualization. Additionally, from a pedagogical point of view, learning is the human being's ability to acquire knowledge, skills, abilities, and competencies. From the same perspective, learning involves a set of activities designed and implemented by the teacher in order to facilitate changes in student behavior, capitalizing on their ability to acquire knowledge, skills and cognitive strategies.

In a broad sense, learning is the acquisition of a new behavior as a result of specific training. Learning aims at an adaptive change of the individual's behavior as a result of their interaction with the environment. Formal education occurs in specialized institutions designed for acquiring new information, knowledge, skills, and competencies by an individual. By contrast, the emphasis of non-formal educational activities is on participants'

personal, social, and professional development, as well as on the training and consolidation of skills and competencies (Bernat, 2003). We will present learning models that we consider important for successful non-formal education and highlight the beneficial aspects of each.

2.1. Experiential learning

Experiential learning, as defined by Kolb (1984), is a process in which knowledge is created by going through an experience and reflecting upon it. It has been shown that the learning process is more effective when it comes through personal experience, by engaging the individual in stimulating and enjoyable activities. Learning that takes place in an attractive and pleasant environment is intrinsically more motivating (Kolb, 1984).

2.1.1. The model of experiential learning

People learn from their own experiences and can easily understand new information if they can relate it to what they already know. David Kolb identified a cyclical model of learning in which subjective concrete experiences represent the basis for analysis and reflection (Figure 1). The resulting new knowledge is assimilated and integrated into abstract concepts that provides new learning opportunities, focusing on the active exploration of the environment.

Students' conscious and active involvement in various experiences is key to the learning process. Additionally, a teacher that facilitates the experience is important, though not essential to learning. In experiential learning, the student is involved in designing and developing learning activities and uses analytical skills to reflect on the activities. The student learns by acting, cooperating, and above all, from their own experience. In experiential

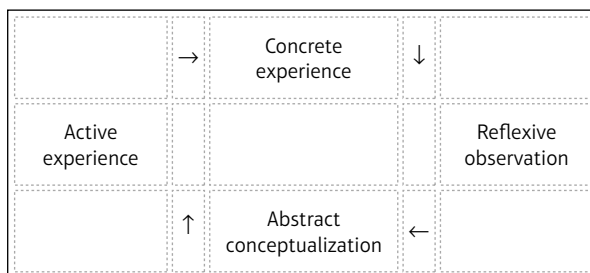


Figure 1: David Kolb's experiential learning model (ELM).

learning, the student becomes an active part of the process by acquiring knowledge, skills and competences, thus directly contributing to their personal development.

2.1.2. Experiential learning applications in non-formal education

Experiential learning is a suitable learning model for non-formal educational activities, given its emphasis on practical applications. One of the key reasons for students' participation in non-formal education programs is the opportunity to take part in practical activities, by applying what they have learned theoretically, gaining a rich experience in their field of interest, and being able to experience and perform various tasks. Practical activities stimulate students' participation, allowing for more cognitive, affective, and physical development.

In order to successfully apply this learning model for non-formal education activities, teachers must understand each stage of the model: concrete experience, reflexive observation, building the abstract concept, and active experimentation.

In the **concrete experience** stage, students are involved in a concrete activity, performing certain tasks, or actively observing various phenomena, procedures, and techniques. In order to provide real learning opportunities, students must find the experience relevant. The recommended training model should follow these steps: experiments, practical work, problem solving, examples, case studies, and simulations.

In the **reflexive observation** stage, students analyze the data obtained through experience. In non-formal education, participants reflexively observe how the activities they participated in, and information they acquired can influence their actions. The recommended training model should follow gradually these steps, like conversation, debate, interrogative training methods, and mutual teaching.

Building the abstract concepts involves understanding and interpretation among the events observed by the participants. They can compare new knowledge to pre-existing knowledge, integrating and deriving new meanings, providing proof of the transfer of knowledge, skills, and competences into new contexts, and thus effective learning. The training methods at this stage should follow strategies that develop critical thinking, including reading, individual study, modelling, computer-assisted training, and scheduled training.

During the **active experimentation stage**, the acquired knowledge is consolidated and applied through practice. Authentic learning occurs when students apply the new knowledge to new situations. Training at this stage should include, problem-solving, exercises, practical work, project method, laboratory experiments, and case studies.

2.2. Mediated learning

Mediated learning (see Figure 2) has its origins in Vygotsky's intelligence development theory and Feuerstein's mediated learning practice (Feuerstein et al., 1980). The adult (i.e., teacher, trainer, educator) provides declarative and procedural aid for the student, thereby mediating the student's learning context, and ultimately allowing for cognitive development that can only be achieved with the help and facilitation of the adult. If the student learns new skills, he will be able to transfer this learning to new, but similar, situations. Expanding this theory to the whole spectrum of learning, the child is taught *how* to learn, and even helped to develop metacognitive skills.

2.2.1. The model of mediated learning

Mediated learning occurs through intentional and active intervention by teachers for development and gradual attainment (Feuerstein et al., 1980).

The Feuerstein method operates under the assumption that intelligence is not a predetermined or stable factor, but a flexible, changeable, and evolving structure that can be developed. Thus, the role of the adult is critical, as they are responsible for selecting, controlling, reordering, and explaining educational stimuli. Over time, this "filtering" or mediating activity by the adult should diminish, as the student gains knowledge and autonomy. According to Feuerstein, an educator is prepared to assume his own role when he is convinced that individuals they are educating can change, are able to contribute to society and help others. With strong links to Piaget and Vygotsky's theories, Feuerstein is not only interested in analyzing the role of intelligence

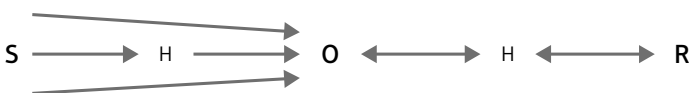


Figure 2: The mediated learning experience (MLE) model.

in learning, but also how intelligence as a human resource can be mediated, enriched, and improved.

Learning potential, cognitive modulation, and mediation are the foundations of Feuerstein's psychological theory. Learning potential is the set of latent behaviors that require some mediation to be transformed into manifestations. However, the human mind is not limited to latent potential; according to Feuerstein, individuals can be trained to develop abilities which otherwise could not exist. Cognitive modifiability refers to human beings' ability to change their own structure of cognitive functioning in order to adapt to situations. Modifiability is not a simple reflex response to external stimuli, but a response to internal changes from a series of voluntary and conscious acts that can and, in some cases must, be guided by someone from outside. Intentional and active intervention offered by the educator to the people with whom they interact mediates learning, allowing for development of their capacities, and gradual attainment of autonomy.

According to the theory of modifiability and mediation, the role of the educator is fundamental. The interaction among the environment-educator-child represents is the basis for most structural changes that occur in the human cognitive apparatus. The educator, or mediator must be able to identify, choose, and make accessible some of the stimuli that reach the subject. The educator will not interfere as a barrier between the subject and the outside world, their role is to identify the stimuli that need to be adapted to be optimally utilized, focusing on the relevant data, determining interest, attention, and awareness (Kopciowski, 2002).

2.2.2. Applications of mediated learning in non-formal education

The contexts of non-formal education activities can be very different, including cultural institutions, children's educational clubs, libraries, theatre, nature, sports grounds, excursions, and visits. Therefore, the presence of trainers or educators to serve as mediators is needed, in addition to serving as organizers, facilitators, or monitors in many situations. Mediation is required for various reasons, which may be anticipated or may occur unexpectedly. The varying cognitive, affective, and behavioral characteristics of each participant are the most important arguments for training educators to act as mediators.

The stimuli in non-formal education settings may vary widely in nature and complexity and are likely different from those encountered at school.

As such, educators need to select and adapt the conditions that will facilitate learning from these stimuli according to students' characteristics and needs. It is important for those involved in non-formal education to know, prepare, and implement activities for the students in order to ensure their satisfaction, engagement, and targeted learning outcomes.

2.3. Learning through play and exploration

Learning through play, cooperating and exploration is the best way for children to acquire various forms of knowledge, skills, and abilities by discovering and exploring the environment. Many specialists in the field of psychology support the very important role of play in education and learning. When playing children can implement their acquired skills, adapt to new social roles, try new and stimulating activities, and solve complex problems that they may not be able to solve otherwise. Learning through play and exploration integrates both cognitive and social skills by stimulating educational contexts and educator-provided support. All aspects of playing are important experience that trains the cognitive, affective, psychomotor and social component of children's personality.

Learning through play and exploration is a model of learning in itself, but also a way of learning that can be found in other educational paradigms. Through this model, both individually and with the guidance of an adult, the child learns via games to explore the environment. The exploratory and spontaneous context give children opportunities to implement their skills and capitalize on their existing potential, allowing them to adapt to new social roles, carry out new and stimulating activities, and solve various problems.

The model of learning through play and exploration follows the normal patterns of development of the pre-school and school-aged children, and contributes to the development of problem-solving, critical thinking, and socio-emotional skills. The pattern of learning through play and exploring integrates both cognitive and social skills, utilizing environments rich in stimuli and the support provided by the trainer.

The paradigm of learning through play and exploration is often used in non-formal education. First, this model is motivating for children, as learning takes place in a playful and less structured context. Students can acquire new knowledge, apply it in practice and develop skills and competencies that are particularly necessary for an active life. Given children's needs, abilities,

and their methods for investigation, playing and exploration are appropriate contexts to engage students in learning activities.

Using games with psycho-pedagogical potential and toys created by the students during non-formal education activities ensures the satisfaction of discovering new things and gaining new knowledge. The enjoyment from participating in fun, playful activities is an intrinsic motivation, a set of motives, needs, tendencies, interests, intentions, which help fulfil certain actions, deeds and attitudes. The game, as a form of non-formal education, offers the opportunity to approach various content and themes. Participating with pleasure in activities, manifesting the creative, constructive attitude, individual or group involvement in solving the problems encountered are very important aspects for a child.

2.4. Learning to develop critical thinking

Learning to develop critical thinking requires developing students' cognitive and metacognitive strategies. Critical thinking requires evaluating and testing possible solutions, choosing the appropriate one, and arguing against inappropriate ones in challenging or complex situations. It involves understanding a subject, reviewing data, and using logic (Dumitru, 2000).

The **Learning Model for Critical Thinking** has been created and implemented by researchers such as Charles Temple, Jeannie Steele, and Kurtis Meredith. This teaching-learning model emphasizes building meaning and comprises the following stages: evocation, producing the meaning, and reflection.

Evocation highlights students' prior knowledge, as well as the possible misunderstandings, misconceptions, and cognitive errors.

Producing the meaning is the stage in which learning takes place. A topic is analyzed from multiple perspectives, creating a connection between prior knowledge and what has been learned.

The reflection is the stage that goes beyond acquiring new knowledge, to critically analyzing and reflecting upon previous knowledge. The reflection stimulates new thinking, formulating questions and personal arguments, integration of new knowledge in the existing system, and self-reflection regarding how the activity was implemented.

During non-formal education activities, the development of critical thinking relies on interactions between and among the trainer and participants. Critical

thinking is expressed through the exchange of ideas, interactions with text (active and conscious reading), and active exposure of critical, constructive, and creative thinking, which is the expression of opinions based on personal values.

2.5. Social learning

Social learning involves the acquisition of knowledge and skills by interacting with people and environmental elements, including direct or indirect observation of behaviors their consequences. Social learning theory explains the processes through which a behavior, or sequence of behaviors, is acquired, initiated, and maintained. Social learning manifests in the ability to reproduce an observed behavior and is different from other forms of learning in that a behavior can be performed without any kind of reinforcement.

2.5.1. The model of social learning

The social learning model developed by Albert Bandura postulates that cognitive factors (i.e., mental, behavioral, and environmental), especially those related to human interaction, work together to determine a person's actions. Bandura's theory highlights the influence of people over others, and the importance of knowledge (e.g., the ability to know, to perceive and to think). In order to feel influenced by the consequences of their behavior, people need to recognize the link between a behavior and its consequences.

Observation is a quick and efficient way to acquire knowledge and skills that guide action. When presented with a new situation, people use their social experiences to determine their behavior. Still, once an action is taken, an individual may use its consequences for corrective purposes. According to Bandura, social behavior it is not innate, but learned from appropriate patterns. His theory asserts that if any change in behavior involves a cognitive change, to change cognitions we must act upon behavior. His research demonstrates that behavioral changes made by classical or operant conditioning are not just responses to stimuli, but they are cognitively mediated. Bandura believes that the acquisition of new behaviors takes place during interaction between the environment and the individual's personal characteristics. The behavior is influenced by the person's attitudes, beliefs, history of previous reinforcements, and environmental stimuli. Also, a behavior once produced can cause environmental changes, just as the aspects of personality can be influenced by the environment's action. Through his research, Bandura

draws attention to the fact that people often learn only by watching others, and so the individual codes the information about their behavior, and on later occasions uses this information as a guideline for their own actions without necessarily needing any reinforcement in order to produce the response.

2.5.2. Social learning applications in non-formal education

The social learning's goal is to assimilate existing behavioral patterns, new behavioral patterns, new forms and schemes of interpersonal interaction, and thereby new personality traits. Within the non-formal education activities, there are many social, cultural, and educational contexts in which social learning based on educational models can be produced. There is social learning focused on creating the experience of connecting with the reality, with the inter- psychological values and norms. Regarding the applicability of this learning model to the educational act, it goes from acquiring verbal behaviors to acquiring motor skills and social behaviors, and attitudes, by identifying itself with the appreciated adult.

3. Psychological principles applied to non-formal education

Based on multiple experiences carried out and observations made so far, general guidelines for organizing and carrying out non-formal education activities suggest:

1. Creating and offering a stimulating environment, composed of various materials and educational means, allowing students to engage with interest and passion;
2. The opportunity and possibility of choosing how to act allows students to get involved in more creative and innovative tasks;
3. Organizing learning experiences as play and exploration contributes to increasing motivation and student participation;
4. Encouraging learning through discovery helps activate the learning potential and increases students' self-esteem;
5. Diversity's appreciation and respect of individuality in learning workshops are essential features of an inclusive educational approach;
6. Assessment through reflection and transfer of activities developed contributes to cognitive and metacognitive development in students.

Below, each of these principles are presented in detail and accompanied by argumentative explanations.

3.1. The first principle aims at creating and providing a stimulating environment, composed of various support materials and educational means, which allows students to engage with interest and passion. The framework for organizing and carrying out non-formal education activities is made up of multiple didactic materials, equipment, reusable materials, installations, educational means, and technical methods of training. All these components are material resources that are particularly useful in exploration, valuation, and learning processes that each student should cover. There is a great chance that each student is attracted, interested and determined to choose activities or games in which they can be active participants. Teachers that monitor non-formal education activities can intervene and support students in their activities so that in times of unsafe or ineffective situations they can move on to solving next tasks, which eventually will lead to realizing the desired product or solving the problem. The stimuli acting on students in non-formal education activities can develop interest and passion for certain teaching resources or even for a field of activity (e.g., carpentry, electronics, computer science, gardening).

3.2. An important aspect of non-formal education is students' ability to choose how to act (i.e., individually/group, discovery/creative activities), allowing them to develop creative and innovative skills. Awareness of the fact that students can contribute to creating some objects, equipment, or new toys represent the source of some original ideas meant to involve them actively in their activities. By creating new materials, students directly contribute to the endowment of some spaces assigned for non-formal education activities, by increasing the diversity of current objects.

3.3. Organizing learning experiences in the form of play and exploration helps motivate children to participate. This significant principle of non-formal education emphasizes the importance of ludic character in everything that students perform and do. Playing is a dominant activity in childhood, but it is equally valuable at other ages and throughout life. It is very important to develop the playful side of the personality in order to be able to look at solutions with fantasy, creativity, and inventiveness.

The pleasure of participating in ludic activities is actually the existence of an intrinsic motivation, of a set of moves, needs, tendencies, interests, intentions, which support the realization of certain actions, deeds and attitudes. Within non-formal education, there are strong enough reasons for the students to act with pleasure, enthusiasm and conviction.