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The New Educational Review

Use of Experiential Learning in Distance Learning and E-learning of Adults

Abstract

The evolution of theoretical learning concepts brings new stimuli to lifelong learning practice. One of the new theoretical bases appropriate for adult education is an experiential learning theory which analyses and evaluates educational projects and study materials for distance learning as well as e-learning educational programmes from the standpoint of potential learning effectiveness. At the same time, it can be a gnoseological theoretical basis of designing educational programmes for adults, either on a theoretical basis of distance learning, e-learning, or on the basis of their purposeful integration, which is becoming more and more frequent in andragogy. The study gives general tenets of andragogy, presents the main characteristics of experiential learning along with its two major developmental variants – Kolb's cycle and Jarvis´ revised model of the processes of learning. It defines the basic features of distance learning and e-learning, and formulates general stimuli how to apply experiential learning within these relatively integral educational technologies. In conclusion, it brings about information on practical use of theoretical approaches to teaching pedagogical subjects within educational programmes at universities.

Key words: *lifelong learning, distance learning, e-learning, experiential learning, experiential learning cycle, reflective learning,*

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Introduction

Andragogy is a subsystem of lifelong learning. It should accept the new views of individual learning in the course of life which underline, in particular, one's greater responsibility for one' s development in the society which creates adequate conditions.

The new educational technologies which are used in the processes of formal and non-formal learning of adults, e.g. distance learning or e-learning, after dramatic development connected with great expectations, have reached a new developmental stage in which the elements of novelty and curiosity are replaced by natural doubts about their capacity and effects in the development of participants in education.

One of the reasons is that technological aspects, in many cases, outweigh didactic ones and spreading these technologies into new educational areas and fields connected with completing various objectives is done more on the basis of imitating and copying than on the basis of respecting the knowledge of a particular educational theory. This study deals with questions how to use a theoretical model of experiential learning in distance learning and e-learning for adults, and brings about examples of this approach to teaching pedagogical subjects, which is being implemented by the author of this study.

1. Concept of lifelong learning and education of adults

Lifelong learning, which is one of the major educational concepts in the 21st century, is to provide people with possibilities to educate themselves within their capacity at various stages of development. This should be done in accordance with their interests, duties and needs. According to Longworth (2003, p. 11) "lifelong learning means what the two words express: lifelong, according to J.A. Comenius, means "from cradle to grave", and learning, which is one of the most frequent and misunderstood words, means doing things in a different way, creating an out-and-out focus on the need and demands of the learner; giving learners the tools and techniques with which they can learn according to their own learning styles and need. It is not teaching, not training, and not even education in its narrow sense. It has a much wider scope. It has a social, economic, political, personal, and, of course, educational meaning in its widest sense".

The Memorandum of the European Commission on Lifelong Learning (2000) clearly proves that education and its outcome play a crucial part in innovations, economic growth and welfare, competitiveness and life quality, which will be even more important in the future.

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Educational systems of member countries are to respect three main principles: learner-centred focus, equal opportunity and high quality and significance.

The document specifies three categories of purposeful learning activities: *formal learning* (provided by educational institutions with certificates and qualifications), *non-formal learning* (held in workplaces) and *informal learning* (which is part of everyday life and does not necessarily mean intentional learning).

In our view, it is possible to pursue learning activities within formal and non-formal learning by means of technologies of distance learning and e-learning.

As far as the Memorandum is concerned, two key ideas out of six can be regarded as stimulating for this contribution since they refer to the necessity of using ICT in andragogy.

1. Innovations in teaching and learning process – which means to develop efficient methods for lifelong learning to its full breadth and potential.
2. Bringing education closer to home – i.e. to offer opportunities of lifelong learning as near to learners as possible in their towns and villages, and at the same to make use of the methods based on ICT.

At its session in June 2002 the Council of Europe again dealt with lifelong learning and called for a radical reform in the field of education and professional training (Education and Professional Training 2010, 2004). It pointed out the need of providing every citizen with key skills which determine individual development and self-fulfilment along with the social and professional integration, and further education. It can be achieved above all in such a way that "teachers and educators should be supported in adapting pedagogical methods to situations which change their roles. And here, it is information and communication technologies which can play a positive role as to the development of innovative and effective pedagogical methods which make provision for individual needs of students" (ibid., p. 23). Undoubtedly, the above-mentioned distance learning and e-learning rank among these methods. In andragogy their application and expected impact are determined by respecting specific features of andragogy, which is usually codified in the form of tenets in andragogy.

2. Specific features and tenets in andragogy

Jarvis, Holford and Griffin (2003) researched into current educational changes and found out that there were twelve characteristic trends in many didactic variables. Apart from some others, the following are mentioned:

- from teacher-centred to student-centred
- from theoretical to practical

- from rote learning to reflective learning
- from face-to-face to distance learning

The theory of experiential learning is considered to be progressive and effective in andragogy as it corresponds to characteristic features of adult participants who enter the learning process. As Roger says (1986), every adult individual brings in a wide range of experience, knowledge and emotional investment. In addition, they usually approach the learning process with their aims set. They also come with certain expectations concerning the learning process itself as well as with their learning abilities, which might influence the quality of the outcome they are able to achieve. Besides, they are influenced by the particular social environment which modifies their educational requirements and needs. The specific learning objectives and programmes should take all this into consideration.

The tenets of andragogy express general requirements as to the efficient course of a didactic process, which are followed by a teaching lecturer, a learning participant in the training as well as by authors of educational programmes, texts and aids. They came into existence via generalizing the experience of educators of adults obtained in the process of adult teaching and management, or as the reflection of self-study processes. They are also based on applying the scientific knowledge of many disciplines, which create the foundations of the process of andragogy. Muzik (1998) defined nine tenets: 1) scientific quality 2) practice orientation 3) leisure-time orientation 4) topicality 5) didactic reduction 6) motivation and participation 7) segmentation of teaching process 8) individual approach 9) feedback and transfer.

From the perspective of this study, some of the tenets are more significant and so they will be covered in greater detail.

The tenet of practice orientation requires aiming at applying the knowledge to participants' practice of the project of instruction. It strongly recommends using practical examples to motivate participants, and in the course of teaching as well as in assessing participants it recommends practical applications of the studied theme.

The tenet of topicality requires responding to problems which appear at work, and a lack of knowledge and skills of participants. According to the tenet training is designed with regard to future requirements of work performance.

The tenet of didactic reduction recommends selecting the information to teach as to the target group (e.g. level, length of experience, age, work position, etc.). It also recommends focusing on major themes and leaving out less important ones, despite the fact that there is a danger of simplification and generalization.

The tenet of motivation and participation encourages the subjects of education to create a positive atmosphere in learning, e.g. via emphasizing the positive impact

of training on work performance (its quality, safety, efficiency, reward, etc.) and on the career ladder. It concentrates on using more motivating didactic methods and creating sufficient space for participants to take part in education.

The tenet of segmentation of teaching process focuses on forwarding in accordance with stages of acquiring the content of the curriculum and recommends segmenting the subject matter into steps.

The tenet of individual approach highlights respecting individual differences between participants of the course as to their prior knowledge, motivation, educational needs, learning styles and the like.

The tenet of feedback and transfer recommends continuous inner and outer feedback and participants gain knowledge and skills in the way which facilitates further learning and serves to a change in practice.

3. Theoretical basis of experiential learning and its development

Jarvis, Holford and Griffin (2003) consider this learning theory so specific that they detach it from behavioural, cognitive and social theories of learning. In other works, e.g. Bertrand (1998), experiential learning is treated as indirect educational strategy within the personalized learning theories.

The theory of experiential learning is the only one to have an emotional dimension, as for the above-mentioned. These days it is becoming a certain educational ideology which has a long history in education and is rooted in more traditions.

The strength of this learning approach is that experience is gained by the whole person, and not only by their mind and body. That means their cognitive, physical, emotional and spiritual aspects, i.e. knowledge, skills, abilities, values, beliefs, emotions and feelings.

The complexity of experience also consists in the fact that we can have direct experience from the outer world (primary), or mediated experience (secondary). And it does not matter whether it is a "real" world or "simulated" (artificial) one. Finally, our experience can be re-formed via our memory if we learn by recalling what has been stored in our memory. Thus, we can speak of several variants of experience (Jarvis, Holford and Griffin, 2003):

Primary experience. This is an experience by any, or all, of the sense of aspects of the social context within which the experience occurs.

Secondary experience. This is a mediated experience having little or nothing to do with the social context within which the experience occurs, such as a video presentation or even a theoretical discussion.

Actual experience. This is an experience that occurs at the present time.

Recalled experience. This is an experience of recalling memories of previous actual experiences.

Artificial experience. This is a created form of experience, highlighting some aspects of other real or actual experiences.

Every experience is in some sense "real" even though it may be indirect or mediated, so these terms are by no means mutually exclusive. As regards learning by means of distance learning or e-learning, it is very favourable that the types of experience can be compared or replaced.

The nature of experiential learning is aptly expressed by the underlying tenets thus:

- Experience is the foundation of, and stimulus for, learning.
- Learners actively construct their own experience.
- Learning is holistic.
- Learning is socially and culturally constructed.
- Learning is influenced by the socio-economic context within which it occurs.

These principles are considered to be typical of a progressive way of education, which is learner-centred aiming at the same time at the use of the prior experience of learners. Many authors regard using students' experience as the core of andragogy, which is proved by a lot of historical knowledge and sources.

3.1. Kolb's learning cycle

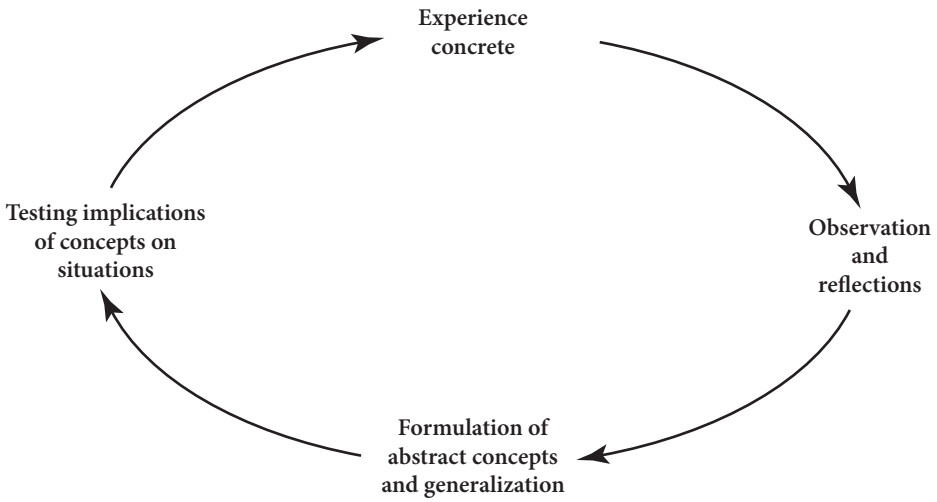
The discussion about the nature of experiential learning results from the similarity to the other contemporary theories of learning. Kolb and Fry published their learning experience and their experiential learning cycle became known as "Kolb's Learning Cycle". The authors state that education and development are reachable by means of an integrated process which is based on experience and consists of four stages.

1. **experience** – something happens to you,
2. **observations/reflections** - you are thinking about what has happened,
3. **conclusion** – you formulate a theory, or modify or enhance the existing one as a result of your experience and reflection,
4. **planning** – you plan some changes (or decide not to change anything) on the basis of your experience and thoughts aroused by the experience.

Thus, it is possible to say that we have "learned from experience". If we do not follow the process, the experience (also negative) is likely to repeat with similar consequences. This process can be seen as a cycle because after the stage of planning, there might be another experience.

Kolb and Fry state that the process of learning can start in any place of the cycle. It does not always have to be started up by some experience. What is essential is that the integration only occurs when recalled experience is within reach.

Figure 1: An experiential learning cycle (by Kolb, 1984)



The above learning model has three key points:

1. It sees education as a cyclic process with integrated stages which go one after another in a logical order, and every cycle leads to other new cycles. The implementing of one cycle creates data for another cycle: every end is a new beginning. This process could be better regarded as a spiral than a cycle.
2. Education is set into the context of everyday life and experience. It is not thought to be carried out only in explicit and formal educational or training events.
3. After this model, we can differentiate individuals according to the stages of the cycle they prefer while learning. These preferences are quite constant and reliable, but they can be changed with some effort in the course of time. While Kolb and Fry call these preferences "styles of education", another suitable term might be learning styles.

As learners prefer one phase of Kolb's cycle, they can be divided into four groups, which are in fact identical with specific learning styles (Rogers, 1986, Longworth, 2003, p. 24).

- *activists,* who like to learn by doing and favour active participation in the learning process,
- *reflectors*, who like to learn by watching others and to think about things before they act,
- *theorists,* who want to understand the theory and have a clear grasp of what it means before they act,

- *pragmatists,* who want practical tips and techniques from someone with experience before acting.

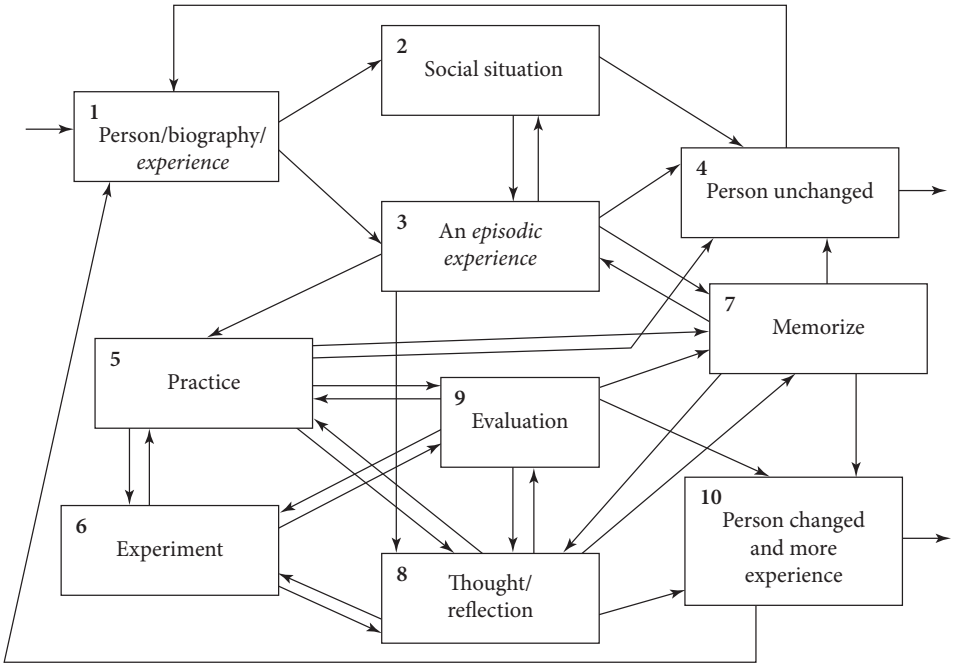
Educational programmes along with their tools – learning texts, programmes, aids – should respect differences in learning styles, e.g. by accepting learning activities in each step of the learning cycle when learners themselves select them, or it is obligatory for everybody.

3.2. Jarvis' revised model of the processes of learning

Jarvis revised the original model of experiential learning shown above since, in his view, Kolb and Fry do not distinguish enough between lifelong experience of an individual and episodic experience during formal and non-formal learning (Jarvis, Holford and Griffin, 2003). He created an interesting model of the processes of learning, which is very useful and elaborate.

The diagram illustrates how individuals enter a situation and construct their experience, so that all learning has a phenomenological basis. We may see that:

Figure 2: A revised model of the processes of learning (by Jarvis in Jarvis, Holford and Griffin, 2003)



- Individuals are in part their own biographies. This lifelong experience is different from past experiences.
- Individuals enter situations and these may either be self-chosen or provided for them by a teacher. The situations can be formal, non-formal and informal and are what is experienced in the first instance.
- Individuals as whole persons experience the situation.
- Experiences occur internally and are constructs.
- The experience individuals have may be either primary or secondary, either actual or recalled, either real or artificial.
- Learning is actually an internal process – one is cognitive and physical, but also emotional.

As a result of their constructed experience, individuals may or may not learn. Jarvis suggests a number of routes through this complex diagram indicating different types of learning. The easiest way to demonstrate these routes is by examining Figure 3, and then describing each type of learning.

Figure 3 A typology of learning (by Jarvis, 1995)

Category of response to experience	Type of learning/non-learning
Non-learning	Presumption
Non-learning or incidental self-learning	Non-consideration Rejection
Non reflective learning	Preconscious learning Skills learning Memorization
Reflective learning	Contemplation Reflective cognitive learning Action learning

By means of this model Jarvis describes potential didactic trajectories of learning techniques, many of which need not lead to the change of the person, i.e. they do not reach learning objectives (e.g. boxes 1→2→3→4), because learners assume that the world is not changing and therefore successful responses can be repeated effectively. Thus, the person is not learning at all.

If the learner follows the process 1→2→3→8→4 or 1→2→3→8→10, this learning can be called incidental self-learning (in fact, it is informal learning).

Processes 1→2→3→7→4 (non-intentional learning), 1→2→3→5→7→10 (skills learning), or 1→2→3→7→10 (memorization) refer all to non-reflective learning.

The last three responses to experience are called reflective learning. Contemplative learning, or contemplation is the learning that follows the trajectories 1→2→

3→8→9→7→10 (it brings in social experience) or 1→3→8→9→7→10 (individual experience). Contemplation is a way of thinking about experience and conclusions regardless of broader social reality.

The process via 1→2→3→5→6→8→9→7→10 can be called reflective cognitive learning, which is carried out in accordance with the theory to be tried in practice.

The process via 1→2→3→8→6→5→9→7→10 can be called action learning, which in responding to unique situations produces new skills and knowledge. Action learning is the final form of learning mentioned here. It involves not only learning a skill but also learning the concepts that underpin practice, so that the emphasis on practice has been dropped. This form of learning involves attitudes, emotions and so on.

In reflective learning, there may be internal loops within the processes involving boxes 5, 6, 8 and 9. This need not be a single loop, but can occur many times in the processes of learning. These three forms of learning are not always innovative and may involve retention of the status quo.

According to Jarvis, Holford a Griffin (2003) all forms of experiential learning can be behavioural, action-based, cognitive or social. All of these can also occur simultaneously, since experience itself has many dimensions. In other words, experiential learning is a much more comprehensive theory of learning and, not surprisingly, it has become something of a new orthodoxy.

The authors point out that when we are learning new subjects, we are usually taught the theory first, but theory is provided through secondary experience. Information is always transmitted to us through mediated experiences and, when, as a result of primary experiences, develops our own theories in practice.

The theory of experiential learning can be used in four cases: 1) in everyday life, 2) in didactic classroom learning, 3) in learner-centred classroom learning, 4) in training in workplaces.

As the study suggests, we look into the two situations of "school instruction".

In (didactic), i.e. teacher-centred education, "teachers sometimes ignore their students´ previous experiences and assume almost that they are empty vessels to be filled with information. It is worth recalling that the classroom context is the primary experiences and the information being provided is only secondary, but the learners also learn experientially and incidentally from the primary experiences as well as from the secondary ones. These incidental learning experiences can be cognitive, emotional, attitudinal, and so on. Most teachers plan only that the secondary experiences that they provide should be learnt. Since the secondary experiences are mediated, it is essential that learners assume a critical attitude to what they are taught" (Jarvis, Holford a Griffin, 2003, p. 66).

Student centred classroom learning can take a few forms:

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- all endeavour to use students' past, or recalled experiences,
- and provide primary and/or artificial experiences from which they may continue to learn.

For instance, in many forms of problem-based learning, the teacher selects an actual problem from "real life" and presents it in the artificial context of the classroom to be solved by the class.

In role play, the teacher or facilitator provides an actual primary experience in the artificial context of the classroom which relates to the type of experience that the role players may have in "real life".

In conclusion, we will mention two important deductions which are of significance for our further thoughts on using this theoretical basis in distance learning and e-learning.

1. Although experiential learning in all its forms has become a new orthodoxy, there are many situations when we have to learn from secondary or mediated experience. In these cases, we have to recognize that we are learning from other people's experiences and interpretations. These must be assessed critically before we accept them. But without learning from secondary experiences, the knowledge of the world would be greatly impoverished.
2. Human learning occurs when individuals, as whole persons (cognitive, physical, emotional and spiritual) are consciously aware of a situation and respond, or try to respond, meaningfully to what they experience and then seek to reproduce or transform it to integrate the outcomes into their own biographies. In this instance, biography is the totality of our experience, which is an integrated combination of cognitive, emotive and physical, and learning is the process through which individuals grow and develop.

4. Use of theory of experiential learning in distance learning and e-learning

Distance learning as quite a coherent technology of andragogy, and e-learning as a widely understood complex of ICT applications in processes of preparation, implementation and assessment of education or self-education, are successfully blended in the general sense as means/tools helping to attain objectives of educational programmes for adult participants. Either system came into existence relatively on its own, and as such can keep on working. The reason why we pay attention to their tenets and characteristics is that both of them represent learner-centred education, which was above implemented into significant signposts of changes in the processes of education.

4.1. Tenets and theories of distance learning

If we sum up the views of Zlamalova (2001), and Jochmann and Bockova (1995), we can formulate basic principles of distance learning. They are: a) individualization and flexibility, b) independence of study (educator and learner are remote from each other), c) multimediality, d) support for learners and specific organization of studies, e) openness. However openness is not a necessary feature of distance learning. And vice versa, open learning does not have to be distance learning. As to the collocations of open learning and distance learning, thus "open learning" according to Jarvis, Holford and Griffin (2003) means accessibility, flexibility and learner control over content and structure. The authors recommend accepting three organizing principles of distance education with regard to the works of Peters (1993), Moore (1993), and Holmberg (1995).

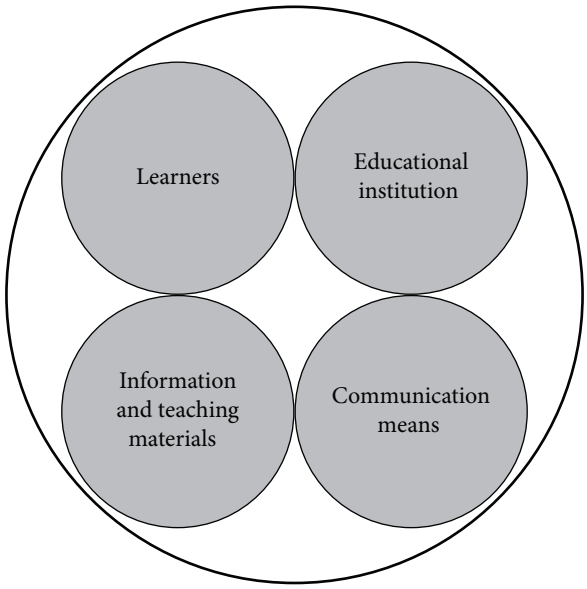
1. Peters´ account of the division of labour involved in delivering distance education, reflecting an "industrial" model.´
2. Moore's concept of independent learning and the autonomy of learners.
3. Holmberg's concept of guided didactic conversation.

At the same time, distance education in practice is connected with a high quality organizing system, educational communication between a tutor and a learner, and teaching materials which help to fulfil educational needs of students. Providers of distance education, whose roots can be traced back to the older technology of correspondence learning, after many years' experience have come to the conclusion that the principle of removing the teacher from the learner cannot be made absolute, so they incorporate some elements of face-to-face instruction into the system, so-called tutorials or residential schools, which is mainly of motivating and social significance. E.g. in the education system of Open University this covers only about 5% of the study time. Tutors or facilitators are not usually considered to be the basic elements of the distance learning system. Zlamalova (2001) places among them learners, educational institution, informations, and teaching materials and communication means (see Figure 4).

In connection with the concept of distance education as student-centred education, requirements on the higher quality of information and teaching materials are rising. Ignoring the category of information materials and other types of distance learning guides, we only look into teaching materials.

These are learning supports, study texts (readers, digests), audio-cassettes, video-cassettes, CD ROMs, references to other learning materials on web pages. This division is based on types of carriers of study information, which will get irrelevant in the future. Learning supports can be effectively placed on web pages and learners are given a licence by educational providers. Nevertheless for many reasons, printed learning supports still enjoy great popularity (possibility of glos-

Figure 4 System of distance learning



sary, response to given tasks, text accessibility, not sufficient size of the computer monitor – hardware producers are trying to solve the problem at the moment).

The theory of distance learning gradually formulates requirements on learning supports (Prucha, Mika, 1999, Jarvis, Holford, Griffin, 2003, Bednarikova, 2001). We give the overview from which we can see that theoretically at least, they accept the need to reflect real practice and integrate learning to learners' prior experience.

Requirements on a learning support (distance text):

1. They should be above all "self-instructional", i.e. provide learners with absolutely everything (motivation in particular), so that they can reach the goals set by the study programme (course, module). They should arouse interest and "draw" them into the problem.
2. They should be structured in such a way that they motivate and enable learners to study continuously and consistently, but they should also be adequately rich in content, clearly organized, attractive etc.
3. They should use text segmentation (dosing the content), well-organized graphic layout, using pictures, schemata, graphs, pictograms, various symbols and further visual elements.
4. The authors should clearly formulate the learning objectives of the text and give reasons for their approach to processing.

5. The texts should contain challenges to contemplate, to change views of various things, to acquire new experience, to express their own opinion, to resolve problems, thus to integrate the study content (rather at a theoretical level in many cases) to practical needs of learners.
6. The texts should be rich in examples showing the practical use of the knowledge and proving particular statements.
7. At the end of each chapter there should be a summary and required reading.
8. During the text or at the end, there are usually given tutor's marked assignments.

Items 5 and 6 might refer to applying the theory of experiential learning in the system of distance education.

4.2. Nature and function of e-learning

The essence of e-learning is to create a virtual learning environment by using various means of ICT. It is evident that e-learning, together with all the other functions it involves, will be major characteristics of the learning or information society (Jarvis, Holford, Griffin, 2003). E-learning includes a wide range of applications and processes such as WBT (Web Based Training), CBT (Computer Based Training), designing virtual classes or digital collaboration. It comprises delivery and transmission of the course content via the Internet or Intranet, satellite broadcasting, interactive TV programmes and educational CD ROM (Kveton, 2003).

E-learning can be used within a common learning process as its effective part. It can take many forms, e.g. using computers for controlling and evaluating experiments, learning skills with the help of a computer (e.g. writing on the computer), learning to become completely computer literate, learning a foreign language in a computer lab, computer-aided testing in instruction, etc.

On the other hand, e-learning can be a subsystem of distance learning. The development of ICT gradually enables us to design coherent learning management systems (LMS) at universities and in andragogy. These systems create such a learning environment for participants who register them, make courses accessible, provide them with study instructions, offer contacts with tutors and the other students create debate clubs, give self-tests, and fulfil further organizational, didactic and communicative functions.

Considering further possibilities to apply the theory of experiential learning to distance learning and e-learning, we think of one of the above key theses of this theory which emphasized that every experience is in some sense "real" even though it may be indirect or mediated, so these terms are by no means mutually exclusive. As regards learning by means of distance learning or e-learning, it is very favour-

able that the types of experience can be compared or replaced. Therefore, we do not regard as essential to distinguish the form of presentation of management and content information for learners (text, electronic or face-to-face), but we consider essential to what extent, if any, teaching texts or supports make use of learners' prior experience, or they make them gain new experiences.

4.3. Stimuli to apply the theory of experiential learning to distance learning and e-learning

4.3.1. Kolb's Learning Cycle and distance learning and e-Learning

There are two basic possibilities of using that cycle while designing e-learning educational programmes (apart from other things, applicable also in distance learning).

1. to use ICT to support individual stages of the learning cycle when learners can make a relatively independent decision, or
2. to create the whole educational programme whose stages are connected to each other to some extent leading the learner.

The first method could have the following variants and forms:

- 1st step – presentation of particular stimuli of the cycle such as video-sequences, animations, browsing (i.e. secondary experience or artificial experience),
- 2nd step – asking specific questions which would stimulate observing the situation and certain conditions, or offering some opportunities to look into the phenomenon in a slow or fast way, from another angle (front, back, lateral, internal) or another aspect (e.g. social, medical, ethical, economic, technical, legal etc.),
- 3rd step – offering specific theoretical constructs (principles, models, formulae, equations), which could explain the observed phenomenon bringing the experience,
- 4th step – offering possibilities to simulate testing the outcome, generalizing or theoretical conclusions under various circumstances. Each solution should contain feedback as well as recommendation to return to some of the previous steps of the experiential learning cycle, if necessary.

We assume that it is possible to draw particular ways of applying the above examples to various subjects, themes or content.

The second method can be a holistic educational programme which is designed in accordance with the four stages of the experiential learning cycle. The obligatory order for the learner is as follows:

- Particular situations, phenomena or ways of conduct are presented,

- Various views of the chosen phenomenon are offered (analyses according to the pre-stated criteria),
- Relevant theoretical conclusions are drawn in the form of generalization, laws, mathematical or logical formulae,
- Ways of applying theoretical conclusions to solving practical assignments or ways of testing their validity are shown.

Considering the previous knowledge about education of adults along with the current potential of ICT, we can expect these educational effects to be achieved:

- Some theories which are sometimes underestimated by adult learners are highlighted in solving practical tasks,
- Adult learners adopt methods which are suitable not only for formal and non-formal learning, but also for informal learning (they will learn how to make the most of their work and life experience, which has an impact on decision-making processes and work with information),
- Instruction will correspond more to the needs of adult participants.

4.3.2. Reflective learning in distance learning and e-learning

As far as the use of experiential learning in e-learning and distance learning is concerned, the above-mentioned (chapter 3.2) processes give reasons for potential unplanned, undesirable or insufficient results of learners. They are caused by omitting or developing insufficiently some of the steps of the described process. Apart from this, they also show the episodic experience of the learner however well mediated by means of ICT presentation (e.g. the Internet) does not have to or even cannot lead to the expected outcome. We try not to underestimate the importance of incidental learning, however more can be expected from experiential learning theory used in e-learning and distance learning.

All the three types of reflective learning offer a basis for designing e-learning educational programmes and learning supports for distance learning. They offer gnoseologically reasoned methods in andragogy in connection with the planned learning outcome.

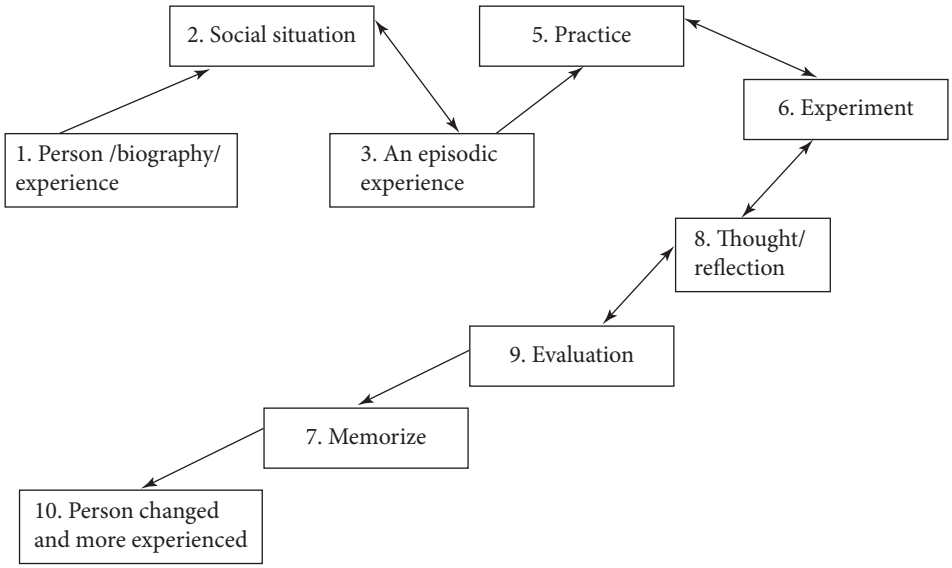
To illustrate this, we will give one example of reflective learning called reflective cognitive learning, which can be seen as the passage through elements 1→2→3→5→6→8→9→7→10. Graphically, this type of learning can be clarified in Picture 5

Two-way arrows show a possibility to make loops which might be repeated if necessary (elements 5. 6., 8., and 9.).

We will try to explain the above diagram verbally:

1. The learning process is entered by a person with particular personal experience (or none at all) in the specific area of knowledge or skills.

Figure 5 Diagram of reflective cognitive learning



2. The person gains information/persuasion on the relevance (usefulness, need) of a certain knowledge or skill basis.
3. He or she is given situations, or is led into them (or his or her memories of such situations are recalled), in which he or she is episodically persuaded of the importance of some knowledge or a skill (e.g. the way the knowledge helped in a specific situation).
4. The learner is asked to act, to start solving a problem. It can be solved by means of an attempt-error method, rational analysis, insight, or using prior experience. However, the solution does not have to be found or be satisfactory.
5. The learner is asked to search for a certain theory and try to verify its use under certain (individual) circumstances (e.g. management theory of leading people in a particular organization).
6. The individual is asked to register effects of their attempts and find factors (external and internal conditions) which influence applying the theory to practice.
7. The individual should evaluate the best solution.
8. The best solution should be repeated a few times to become fixed.
9. The individual gets changed and acquired some new experience (knowledge, skills) by learning in the given area.

We assume that learning according to this scheme will be used more in the face-to-face form of learning when both a teacher and students are present.

The author of this study has many years' experience as a tutor in distance education at Open University in the Czech Republic, which shows, however, that some quite coherent sequences from the selected type of reflective learning can be found in tasks for students in teaching supports, in tutor marked assignments, or in tasks for team exercises within the so-called Residential School. We will show you gradual possibilities of applying the theory of experiential learning to real educational practice via an example of the instruction of pedagogical and andragogical subjects at university.

5. Examples of experiential learning application in distance learning and e-learning in the instruction of pedagogical subjects at universities

Owing to the limited length of the study, this chapter only focuses on some examples of possibilities to use the questioned learning theory in distance learning courses of pedagogy, general didactics, and the theory of personality social development within the combined study form educating teachers. The combined form means that the study programme is done via face-to-face teaching and self-study, which is controlled by all the tools of distance education.

We will use the above model and the verbal description of reflective cognitive learning to give examples of assigning continuous tasks to be solved within a teaching support or as a tutor marked assignment.

1. The students of this programme can (but do not have to) work as teachers. There is a big age span among them and they left secondary schools in different years. These are the main parameters of the target group.
2. Examples of good or bad practice are given in the texts. Extracts from annual reports of the Czech School Inspection (analysed according to strong and weak points of school or instruction) are of great help, as well as those from inspection reports in particular schools. They contain both didactic and ethical problems (bullying, violence). Also, newspaper articles, though given in a journalistic way, have proved very useful because they appeal to teachers and educators a lot. Some situations are presented by means of video recording.
3. A teacher trainee is asked to recall how the discussed problem was being solved when he or she went to school (primary experience), how his or her teacher solved it (primary experience), or how the problem was solved by somebody else (secondary experience).

4. Students are invited to find a solution to a specific pedagogical situation (to take a didactic or educational measure). They might not be satisfied with the solution under current circumstances. We can offer them some evaluating criteria for this.
5. Students are asked to look up data for theoretically grounded or practically proved solution in literature or electronic information sources.
6. If it is possible, students are asked to use the proved solution in practice and follow its efficiency in particular educational conditions, in their own teaching process. They should change the way of solving unless it is proved feasible.
7. Within provided or empirically proved criteria, the students will evaluate the solution as well as their approach to solving the given problem (self-evaluation).
8. In practice students repeatedly use the successful solution to fix a certain programmed behaviour in standard situations (e.g. response to pupils' mistakes, asking questions, rapport with pupils, reaction to violence, solving conflicts among pupils etc.), and are made to evaluate the stability and sustainability of the accepted solution.
9. The individual gains their own experience, adopts new knowledge and skills. They also gain secondary experience from colleagues while discussing solutions to partial tasks and TMAs.

In conclusion, we give three examples illustrating the application of the theory of experiential learning in university distance education of pedagogical subjects.

A. Subject: School pedagogy

TMA: Current problems of teaching profession

Select a school or several teachers, and by means of a questionnaire or a directed interview do research into their views of the teaching profession in the current situation in the Czech Republic. Try to find out motivating and de-motivating factors for work in the teaching profession.

Suggest particular system measures: how to keep young people in schools, to raise the ratio of men, in particular, in basic schools, to enhance social prestige of the teaching profession.

B. Subject: General didactics

Continuous task in the text of the teaching support:

1. Prepare a didactic test based on the knowledge of typology of test items. It should contain at least 15 questions from your field which help you to find out in the course or at the end of the instruction whether pupils have understood the

content and adopted it sufficiently. To eliminate stereotype in formulating the items make three items at least out of the given amount as:

- typical closed items
- closed situational items, interpreting
- matching items
- ordering
- fill-in

Allocate the items various significance. Allocate learners the time to complete the test.

2. Give the test to your pupils at the earliest opportunity.

Discuss in your study group or along with the colleagues who teach the same subject as follows:

- whether your items appear valid in terms of educational objectives of the subject,
- whether you found out greater differences in the point gain of pupils, which could refer to greater difficulty of particular type of test items,
- how many questions you would select to test knowledge at the end of teaching a thematic whole,
- how you would specify the transfer of points score in the test into a grade.

C. Subject: Theory of education (Theory of personality-social development)

TMA: Upbringing in our family

Attempt at self-reflection on educational impact

In the theoretical part

a) Briefly describe key concepts of the theory and methodology of family education.
b) Analyze a selected work on family education. How high is the frequency of interest of pedagogy in problems of family education? What does family education look like in the mass media?

In the practical part

a) Analyze your educational objectives with regard to your children
b) Do you have an educational plan? How do you design it? Do you get your children involved in the plan?
c) Are the educational roles of parents, grandparents, siblings and children themselves defined and specified in your family?
d) Name methods you use in upbringing and say how successful they are.
e) Define results of your educational work in your family.

In conclusion

a) Summarize strengths and weaknesses of bringing up children in your family.
b) Suggest two or three measures to improve education in your family.

Conclusion

The theory of experiential learning is becoming a domineering theoretical basis for effective education of adults, which can be done in the system of distance learning using some elements of e-learning as well. It helps to design teaching supports as key means of distance learning, or complete educational programmes for WBT or CBT, which is facilitated by elaborating the proved models of several types of reflective learning. The study has chosen the type of reflective cognitive learning, which was transferred to the shape of feasible sequence of regulating and self-regulating steps, which might be used in andragogy. The example of pedagogical subjects teaching in the study programme for teachers shows partial and quite wide possibilities of the application of experiential learning in real educational conditions at universities. This approach enables many principles of andragogy to be completed in practical education for adults.

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