Adjustment of the Andragogical Principles to Adults Learning Information and Communication Technologies - Case of the Educational Administration Cycle (Rabat)

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ABSTRACT

Knowles' andragogical principles aim to facilitate adult learning. However, they can't be considered as recipes, which are suitable for all adults, regardless of their particularities and those of their contexts. In this sense, Knowles designed the Model of Andragogy in Practice, which through the analysis of contextual factors (individual and situational differences & goals and objectives of learning) allows the adaptation of andragogical principles. The objective of this work is to verify if this adjustment of the principles is possible in the case of Moroccan adults learning Information and Communication Technologies as part of their training in the Educational Administration Cycle (at Rabat). The collection of data on the contextual factors was done through a questionnaire intended for trainees; and a reading grid to analysis two ministerial documents describing the purposes, goals, competencies, tools , supports… of training within the Cycle in general and the Information and Communication Technologies module in particular. In sum, it turned out that the adjustment of certain andragogical principles is possible and can be carried out directly by the trainer himself; while for other principles, adaptation goes far beyond the field of intervention of the trainer and needs the involvement of the administrative managers of the Cycle or even, as in the case of the principle of the motivation of adults, that of Moroccan Ministry of Education.

Key words: Adjustment of andragogical principles, Adult learner, Andragogy in Practice Model, Information and Communication Technologies.

1. INTRODUCTION

In the field of adult training, the application of pedagogy is a failure [12]. Therefore, the design and implementation of methods, specific for adults, become a priority for both practitioners and adult learning theorists. In this context, the American Malcolm Knowles proposed the Andragogy in Practice Model (APM) (figure 1). A model which consists, on the one hand, of six andragogical principles (essential for adult learning); and on the other hand, groups of factors (Individual and Situational differences; Goals and purposes of the learning in question) likely to influence the application of these principles in a very specific learning situation. The main objective of the APM is the adjustment of the andragogical principles, to a given learning situation, under the impact of groups of factors. From Knowles' point of view, this adjustment gives andragogy all its power which resides in its flexibility, a flexibility that the author describes as flexible learning potential [7]. In other words, APM makes andragogical principles suitable for all adult learning situations [7]. At the end of these affirmations, a set of questions arises: would this APM be applicable to Moroccan adults learning Information and Communication Technologies (ICT) as part of the Cycle of the Educational Administration (CAE) at Rabat? What adjustments need to be made to the six andragogical principles? Finally, how do we get there?

Finally, the objective of this work is to check the flexibility of the APM compared to adult Moroccan learners with their specificities as well as those of the context in which their learning takes place.

2. LITERATURE REVIEW

a- Knowles Andragogy and andragogical principles

Following the publication of his book in 1970: The Modern Practice of Adult Education: Andragogy versus Pedagogy, Knowles fully contributed to the notoriety of the concept of andragogy. He presents it as the art and science of helping adults learn and stresses that andragogy is for adults what pedagogy is for children. Consequently, the teaching of adults can't be done in the same way as that of children; because the learning processes on both sides are radically opposed [1]-[6]-[7]. Furthermore, the andragogy proposed by Knowles is practical in orientation [9]: it is based on six hypotheses (also called principles), formulated on the basis of the behaviors of adult learners and translated into a set of recommendations, at the level of planning, management and evaluation of learning. The six basic principles of andragogy are:

1. The need to know: the adult, before engaging in any learning process, he needs, first of all, to know what he will learn? Then why is he going to learn it? In other words, what this learning will bring him (in terms of

knowledge, skills, competencies, personal gain ...)? And finally, how will this learning be designed, implemented and evaluated?

2. <u>The self-concept</u>: adult has family, social and professional responsibilities ... which have given him an independent mentality in choices and decision-making. From then on, he sees himself as an autonomous person, perfectly capable of self-management and self-direction; and categorically refuses to impose any will on him.

3. <u>Prior experiences of the learner</u>: the adult has, in fact, accumulated experience, both personal and professional. It is his identity and asset him to face all the problems of life and even those of learning. In practice, his experience is an invaluable source of learning, which should be respected and reused.

4. <u>Readiness to learn</u>: adults is ready to learn, especially when the experiences he has learned will enable him to cope with everyday situations or to carry out "development tasks", tasks which allow him to develop and flourish, whether on a personal, professional or social level.

5. <u>Orientation to learning</u>: adult prefers that his experiences of learning are immediately reused and not deferred. Thus, he isn't at all interested in the theoretical aspect of the subjects covered, but focuses more on their practical contributions likely to help him in the resolution of problems encountered daily.

6. <u>Motivation to learn</u>: adult learner is generally motivated by internal rather than external factors. He is indeed impelled by the quest for recognition, appreciation, self-esteem, self-realization; the achievement of his own goals ... such motivation guarantees the quality and sustainability of acquisitions.

However, it seems wise to point out that a good number of practitioners have taken these hypotheses (or principles) as recipes, applicable to adult learners whatever the situation [2] [3] [14]. However, this is not the case for Knowles, who qualifies them as flexible hypotheses that can be modified according to the situation in which the learning takes place [7]. It is in this context that he proposes the Andragogy in Practice Model (APM).

b- The Andragogy in Practice Model

From Knowles' point of view, the usefulness of the APM (figure 1) lies in the fact that the planning of learning for the benefit of adults starts from andragogical principles (in the center); and also taking into account (through an analysis) the context in which this learning takes place (from the inside to the outside: Individual and Situational differences & Objectives and Purposes for learning). This analysis highlights the influence of the context on planned acquisitions, and therefore requires readjustments in level of principles so that they are suitable for particular adult learners in a particular learning situation [7].

More particularly, the process of analysis, leading to the readjustment of andragogical principles, begins first, with the identification and understanding of the characteristics of adult learners, that of the subject taught and that of the situation in which holds learning (Figure 2).

In a second step, this analysis focuses on the identification of the goals and purposes of planned learning and also and above all their effects on growth and development, both of the individual, the sponsoring institution of the formation or the society as a whole as specified in Figure 3.
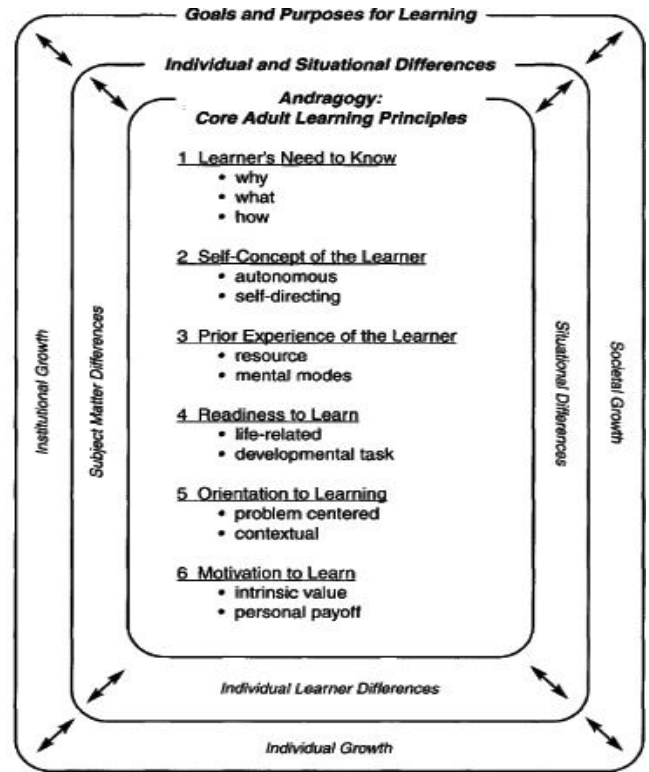

Figure 1: Andragogy in Practice Model [7]

Andragogical principles	Subject matter	Individual learner	Situation
Need to Know			
Self-concept			
Experience			
Readiness to learn			
Orientation to learning			
Motivation			

Figure 2: Analysis of Individual & Situational differences [7]

Andragogical principles	Individual	Institutional	Societal
Need to Know			
Self-concept			
Experience			
Readiness to learn			
Orientation to learning			
Motivation			

Figure 3: Analysis of Goals & Purposes for learning [7]

c- Presentation of the ICT Module

This presentation will be based on the description of the ICT module, designed and developed by the Ministry of National Education and Professional Training (MNEPT), in September 2014, and entitled: ICT in the service of school management.

In this module, the Moroccan legislator argues that the contemporary management of educational establishments inevitably involves the use of ICT; and specifies that the training will enable future pedagogical leaders to acquire the competencies to use the resources and services offered by ICT properly for the efficient management of a school establishment [10]. It is in this logic that learning objectives have been set:

- Develop the skills to use ICT in the management of the establishment;

- Use the national and regional systems of school administrative and pedagogical management: Know the features of the Massar project (a national system offering, among other things, electronic services for school management); and apply the data security measures of the establishment and Being able to generate statistics from data and represent them graphically.

- Familiarize yourself with office software (Word, Excel, PowerPoint, etc.);

- Communicate and share information with its environment;

- Organize and plan your activities [10].

3. METHODOLOGY

The objective of this study is the adaptation of the andragogical principles of Knowles to Moroccan adults learning ICT, as part of a course in Cycle of Educational Administration in Rabat. In this sense, it becomes necessary to collect information on these learners (characteristics, representations and expectations concerning the entire training, ICT ...) and also on the contextual factors likely to influence the learning of these adults (the subject taught; the learning situation: the trainer, the content, and the peers; the objectives and goals of this learning). The population concerned is made up of a class group of 31 adult trainees (3 women and 28 men).

The methodology used is mixed: quantitative and descriptive. It uses two information gathering instruments: the questionnaire and a reading grid for studying documents, setting and organizing learning throughout the training in general and the ICT module in particular.

The first instrument, made up of 20 items, is intended for trainee executives, questioning their profiles, their representations, their expectations and their behaviors in an ICT learning situation and thus offering a database useful for understanding their characteristics as adult Moroccan learners and their ways of conceiving training, ICT and the context in which learning takes place.

As for the second instrument, it will study two documents: the DDF (Dispositif de Formation), presenting the training engineering adopted within the framework of the CAE; and the booklet specific to the module: ICT in the service of school management. This reading of documents, will allow us to have all the data we need to explain or understand the phenomenon in question [7]. In our case, it will allow us, at first, to understand the goals and purposes of training in general and those of ICT in particular; then, secondly, to identify their impacts on the development and growth of the individual, the school and society as a whole. Finally, note that we used SPSS software to analyze and interpret the data collected.

4. RESULTS

1- Individual and situational differences

1-1 The adult learner

The 31 adults involved in this study have:
- An average age of 42 years (±5 years);
- A family responsibility: 90% of them are married with 2 children on average;
- An average teaching experience of 18 years (±6 years);
- University degrees (87% Bachelor; 10% Master and 3% Doctorate);
- 83% chose this training in order to improve their professional situation.

Regarding the ICT module:

- 58% think that the competencies acquired in this course will be reused in the management of educational establishments; while 42% don't see the practical usefulness of this module.

Regarding the question: What is your main concern in this training? 97% said it was the assignment at the end of the training. Indeed, once the training is completed, they want to work close to their families. They all agree that a good assignment inevitably requires obtaining an excellent general mark.

1-2 Subject matter

All the trainees (100%) recognize the important role of ICT in facilitating the management of educational establishments. Although the ICT was never programmed in their school or university courses, 88% of trainees consider that their level of ICT knowledge is acceptable, because they have already pursued an ICT training assignment (49%) or because they simply self-trained in ICT (39%).

However, it should be noted that their ICT knowledge is mainly limited to Word, Excel, PowerPoint (60%) and national software implemented by the Moroccan Ministry of Education (30%).

As for the content of the ICT module, 90% believe that it is related to the daily practice of a school director; while 10% believe it is purely theoretical with no apparent connection to this practice.

Finally, note that 80% declare that they have never had the opportunity to apply ICT acquisitions during practical training within educational establishments.

1-3   The situation

The learning situation is characterized by three determinants: the trainer, the training materials and the class group. As for the trainer, the trainees, without exception, affirm that his presence, in an ICT module, is essential. For 60%, the trainer facilitates the learning process; either because he masters the relational side (50%), or because he masters the subject (TCI) (45%).

As for the training materials, 61% of the respondents prefer that the course be in the form of practical work while 23% are more comfortable if the trainer prepares in advance a summary document on ICT.

Finally, the class group is characterized by heterogeneity in terms of academic specialty: 32% have a basic scientific training while 68% have a basic literary training, 62% of whom consider the content presented in the ICT module to be difficult. On the other hand, only 12% of trainees admit that one can learn from a peer who has a perfect command of ICT.

2-   Goals and Purposes for learning

In general, training within the CAE aims at the quality of the Moroccan education system through the performance of educational establishments [9]. For this reason, the training of future pedagogical directors is based on the concept of Professionalization. A concept that translates, among other things, a service rendered to society [9].

More specifically, the ICT module aims to computerize the management of national schools. The target competency is then the use of the resources and services offered by ICT for the efficient management of a school [9].

5. DISCUSSION

5-1 Need to know

Because of their teaching experiences, trainees are fully aware of the usefulness of ICT in the management of educational establishments (why they learn?); and also know the software and electronic services used in this management (the what?). What they don't know, however, is the way in which the ICT module will be taught (the how?). Therefore, it becomes wise for the trainer, at the start of the module, to answer this last question, by clarifying his andragogical approach as well as the training materials (presentations, a reference document ...) and evaluation (test, mini IT project ...) used throughout this module. Furthermore, he must be aware of the fact that one cannot impose one's will on adults. He is then called upon to involve them in this response, by listening to and taking into account their suggestions as far as possible.

5-2 Self-concept of the learner

Admittedly this principle is quite developed in these adults, in view of their ages, their professional experiences and their family and social responsibilities. But, in a situation of learning ICT, these same individuals manifest a mentality of dependence [9]. In fact, a few of them have undertaken a self-training ICT project, and many believe that the trainer is necessary during an ICT module; and consider it to be the primary source of knowledge in this module. Thus, it becomes difficult to bet, at least at the start, on self-directed learning. Therefore, the trainer can, in a first step, play the role of the knowledge holder. But thereafter, he is called upon to leave more place and autonomy to the trainees so that they regain their true mentality of independence and self-direction.

5-3 Prior experience of the learner

Adult trainees have rich personal and professional experience, but in ICT this is far from the case. At this level, the trainer's experience takes on its full value. Indeed, many trainees expect the trainer to be their first source of learning. For some, it is because he has experience in the field of ICT; for others, it is because he has interpersonal competencies. This double expectation (experience / relationship), largely coincides with the propositions of Faulx and Dance when they affirm that in training the expectation of the adult participants with regard to the trainer is twofold: peer \ expert [4]. Peer insofar as it respects their opinions, their experiences, their expectations… and expert because he has knowledge and competencies, which adult learners can benefit from. It is in this context that the trainer is called upon to consider his intervention in an ICT module.

5-4 Readiness to learn

This principle is well developed in these trainees. Indeed, their majority believes that the learning acquired in the framework of the ICT module will be reused in their future function, especially in the computerized management of educational establishments.

In addition, they admit that the content offered is practical, attached to the reality of Moroccan schools. Therefore, this principle does not require any adjustment on the part of the trainer.

5-5 Orientation to learn

The trainees concerned are pragmatic. They prefer, indeed, learning experiences emanating from problems, coming from the daily management of educational establishments. In order to reinforce such an orientation, the trainer will take care of the contextualization of the proposed learning, which will draw all its legitimacy from work situations.

In addition, trainees always try to apply, as soon as possible, their learning experiences in real situations; however this is far from being the case in practical internships; for interns the

directors of the establishments concerned by the internships don't master ICT or don't want to show them how they work or because of the poor connection to the internet ... In this sense, it becomes urgent, not on the part of the trainer, but on the part of the administrative managers of the EAC, to remedy such an anomaly; by designating establishments for the internship where the conditions of computerized management allow trainees to take full advantage of the learning acquired during the ICT module.

5-6 Motivation to learn

The trainees surveyed are highly motivated because they seek, through this training, to improve their professional situation. However, a feeling of insecurity hangs over their words. Indeed, obtaining an excellent grade, as a general average, is an obsession for almost all of them. Why? Quite simply, so that at the end of the training, work in an establishment near the home of their family. This external stimulator (the note) would be less energizing for the adult than we think, and the learning that results from it is not long-lasting but rather temporary [13].

In order to overcome this feeling of insecurity, it becomes necessary to rethink the evaluation, especially in its link with the assignment. However, such an operation goes far beyond the trainer and even the administrative managers of the EAC. It is, in fact, the responsibility of the Ministry of National Education. By doing so, the Ministry will fully contribute to the adjustment of the andragogical principle relating to the motivation of adult learners, at the commitment of adult trainees and, in general, the achievement of the training objectives.

In sum, the possible adjustments can be summarized as follows:

Andragogical principles	Adjustments
1- Need to Know	- Respond together to the question of how the module will be taught, while agreeing on the teaching support to be adopted throughout the ICT module.
2- Self-concept of the learner	- Initially, the trainer takes charge of the training, it is therefore the first source of learning and decisions; - As time goes on, he empowers learners and gives them more freedom and autonomy.
3- Prior experience of the learner	- The trainer will play a dual role: peer and expert; - The trainer is called upon to recognize the experience of trainees, although limited in ICT; - Favor experimental methods.
4- Readiness to learn	- This principle does not require any adjustment: Trainees manifest the predisposition to commit.
5- Orientation to learn	- Those responsible for the EAC are called upon to designate schools for the internship whose conditions allow the application of learning acquired within the framework of the ICT module.
6- Motivation to learn	- The Ministry is called upon to rethink the assessment score within this CAE, particularly in terms of its direct link with obtaining a job near the family home.

Figure 4: Adjustment of andragogical principles

6. CONCLUSION

By way of conclusion, we can affirm that the andragogical principles adapt to the situation of learning of Moroccan adults in EAC. An adaptation which, for certain principles, takes place at the level of the trainer and his field of intervention; while for others it exceeds him, and needs the effective involvement of the administrative managers of the cycle and even, as is the case with the principle of adult motivation, that of the Ministry of Education. Thus, the application of the APM to Moroccan trainees learning ICT requires collaboration between these different stakeholders; otherwise, it would be difficult to envisage talking about real and lasting acquisitions within this cycle.

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