INMATE´S E-LEARNING STYLES

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INMATE´S E-LEARNING STYLES

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Abstract

E-learning has been singled out as a means to promote lifelong learning, contributing to sustainable economic growth and social cohesion. This is sufficient reason for studying adult's learning process in an online environment, especially those who are in a vulnerable situation and in a process of digital exclusion. This paper focuses adult's learning styles in a Portuguese prison and its purpose is to analyse the inmates' approach to learning. The data were collected by the revised two-factor study process questionnaire (R-SPQ-2F) and by the Lifelong Learning Questionnaire (Kirby; Knapper; Lamon & Egnatoff, 2010) [1]. The VAK (Visual-Auditory-Kinesthetic) test was also applied in order to identify the main senses mobilized for learning and classifies them as visual, auditory or tactile / kinaesthetic (Miller, 2001) [2]. The results allow us to associate the deep approach to some characteristics of learners throughout their life, especially concerning the establishing of goals and the self-direction of learning, whereas the superficial approach is mainly associated with the adaptation of learning strategies. On the other hand, the VAK test indicated that the tactile/kinesthetic is the preferred one. Knowing the adult´s learning approach can contribute to pedagogical differentiation and increase participation in digital environments.

Keywords: E-learning, lifelong learning, adult education, learning styles.

1   INTRODUCTION

The Europe 2020 Strategy [3] aims to prepare the European economy for the coming decade, based on three key growth drivers: "smart, sustainable, and inclusive growth". To this end, it has defined guidelines, such as the Digital Agenda for Europe, the aim of which is to "chart a course to maximize the social and economic potential of ICT, most notably the Internet, a vital medium of economic and societal activity for: doing business, working, playing, communicating and expressing ourselves freely" [3] (p.4). Some of the main actions planned in this agenda include: propose literacy and competences as a priority for the European Social Fund regulation (2014-2020), develop tools to identify and recognize the competences of ICT practitioners and users, linked to the European Qualifications Framework and to EUROPASS; and develop a European Framework for ICT Professionalism to increase the competences and mobility of ICT practitioners across Europe.

To achieve the aims of the EU 2020 Strategy, the "Council of Ministers Resolution on a renewed agenda for adult learning" (p.1) [4] points to the importance of investing in adult learning "in formal, non-formal and informal learning activities developed after the initial phase of education and training is completed" to respond to the crisis and the challenge of aging populations. To justify the measure, the document states: "Adult learning provides a means of up-skilling or reskilling those affected by unemployment, restructuring and career transitions, as well as makes an important contribution to social inclusion, active citizenship and personal development" [4].

In light of this, it follows, therefore, that the European Union recognizes lifelong learning processes in the wider context of adult learning, since it enables the development of personal and professional skills and, among these, digital literacy skills, that fosters smart, sustainable and inclusive growth.

This paper presents a study developed in the context of an e-learning training occurred in a female prison in north Portugal, within the E-PRIS project [5]. The training took place in 2015 and aimed to develop ICT skills and strategies to increase future employability conditions. It also intended to impart knowledge about on how to be an effective online student to enhance their lifelong learning (LL) opportunities inside prison.

The goal of the E-PRIS project is to contribute to the full social reintegration of the inmate population by the creation of a model of integrated, structured intervention, susceptible of

replication or dissemination, and also by making believable an innovative strategy of social reintegration which aims:

- To contribute to the implementation of gender-equality policies that can help to decrease the risk factors associated with social and working place exclusion of the female inmates;

- To promote social and working place inclusion of the inmate population by the development of ICT- related abilities.

By electing as target of the project a part of the female population that by legal or penal reasons find themselves temporarily deprived of their freedom right defines for itself the encasing of this project in this line of action. Being, as they are, a vulnerable group and foreseeing difficulties in their social and professional reinsertion after their inmate experience, the project was made to offer an opportunity to overcome them, by fighting to improve the chances of these women getting not only jobs, but better and better ones at that, by fighting gender discrimination in job access and promoting equal opportunities, areas in which active policies (in narrow collaboration with other measures applied in social assistance and mother and father care in the context of the workers - employers inter-relations) have a very special role indeed.

1.1 E-learning in prison: learning throughout adult life

In academic literature there are various e-learning definitions, giving it different focuses and functions, such as: technology and process of physical separation between teacher and students [6]; learning process [7]; means of communication and relationship between human and technological factors [8]. In spite of all this diversity, e-learning may be considered to be a learning mediation process by a digital environment specifically designed to this effect. In order to make this possible, some European countries have developed online platforms to mediate distance learning (Germany and Austria -Elis, the UK -Virtual Campus and Norway - IFI – Internet for Inmates). As their use in prisons is concerned, there have been pilot programs which have been involving multinational partnerships for testing solutions and make recommendations for ITC resorting in these contexts.

In general, the experiences shared by those in charge of those projects stress out both the pedagogical and the technological aspects, including the necessary safety measures that must be applied. In spite of the advantages that may be attributed to resorting to e-learning in correctional facilities [9]– such as the possibility to develop digital skills, the online work, the boost of self-esteem – we should bear in mind its limitations, as well as the solutions it was necessary to find to overcome them. Lockitt [10] having studied projects of this type applied in prisons in Norway, Sweden and Germany, identified issues related with different aspects: technological (non-effective use, lack of resources), correctional facility (lack of leadership, procedures approval,...), training (curriculum, ...) and inmates (motivation, lack of confidence, fear of technology, ...).

1.2 Learning styles

Several authors in the area of Education, specifically those focused on Adult Education seek to understand the study processes and learning concepts of these students[11] [12], so it's important to know adult's learning styles and approaches.

Learning style is defined as the characteristics, strengths and preferences in the way how people receive and process information, that is a way of learning that enables individuals to learn best by attending to a given modality [13]. Learning Styles are important elements for teachers and teacher educators to consider for any learning environment. Research shows that students' motivation and performance improves when instruction is adapted to student learning preferences and styles. Learning with technology is a powerful way to use students' strengths to help them become better thinkers and more independent learners. Several learning styles theories have been proposed, in this study, the VAK and R-SPQ model were selected.

1.2.1 VAK

The Visual-Auditory-Kinesthetic Model, usually known as VAK Model, focuses on the modes or senses through which people take in and process information. The model is associated with accelerated learning and is based on the use of the three sensory channels. The channel that dominates the individual is what determines how the information is absorbed and how this individual learns best.

The visual learning style involves the use of things to be seen or observed, including photos, diagrams, demonstrations, exhibits, booklets, films, flip chart, etc.

The auditory learning style involves the transfer of information through listening: the spoken word or other sounds and noises.

The kinesthetic learning style involves physical experience - touching, feeling, exploring, learning by doing and experience "hands-on".

Research on three distinct learning styles of visual (V), aural (A), and kinesthetic (K) found that 29 percent of all students in elementary and secondary schools are visual learners, 34 percent learn through auditory means, and 37 percent learn best through kinesthetic/tactile modes [2]. According to Gallert & Martins-Pacheco[14], about 29% of students are visual learners, 23% are auditory learners, 34% are kinesthetic learners and 14% are mixed learners (learn using any of the three sensory channels). This can be considered genetic depending on what part of the brain is more responsive in each of three areas [15], or may be due to the way people are taught. Some students can submit a combination of two or sometimes three of the learning styles. The authors conducted preliminary tests with six students of Computer Course and Information Systems from different semesters, the Federal University of Santa Catarina (UFSC), and there have been a certain predominance of visual and kinesthetic styles.

1.2.2   R- SPQ

Biggs et al (2001) [11] present a systemic version of the students' approaches to learning, through the Presage-Process-Product (3P) model. Within this model, results may influence the approaches to tasks, and these may influence the context of education and the factors more directly related to students. The factors are related to prior knowledge, skills and approaches to learning. The educational context refers to the nature of the content being taught, the teaching methods and assessment and institutional climate. According to Biggs [11], the main differentiating factor of learning results is not the cognition ability but the using of different study processes depending on "approaches to learning". These approaches can be classified as superficial, deep and strategic or high-performance.

The superficial approach concerns an attitude based on the "minimum possible effort", that is, when faced with learning, the student is not interested in understanding it or developing it (…). This approach is, therefore, reproductive and marked by extrinsic motivation and fear of failure.

The deep approach is oriented by the intention of the student to face in depth the task or the content to be learned. For that, high level cognition abilities are used, such as syntheses, analyses, comparisons and confrontations, and even the cultural and cognitive repertoire is used, helping these students to achieve a transforming and creative level.

The strategic or high-performance approach is based on the intention of obtaining the maximum efficiency or the best classifications through the intrinsic motivations of the subject.

2   METHODOLOGY

It´s presented a qualitative, descriptive, transversal study, whose objectives are: (i) describe appropriation that inmates do the different forms of learning and studying; (ii) know the relationship of learning approaches with the tendency / inclination to engage in LLL activities and (iii) identify the privileged learning styles.

2.1   Sample

The sample consists of 6 female inmates of a prison in northern Portugal (I1, I2, I3, I4, I5, I6), that participate in a training pilot project on e-learning, aged between 21 and 42 years and educational level of the 3rd cycle of basic education Secondary School.

2.2   Instruments

In this study, the survey is split into three parts. The first part focuses on learning styles, which were evaluated by VAK, an instrument easy to administer.

The questionnaire consists of 45 items distributed equally among the styles of visual learning (V), auditory (A) and kinesthetic (K). The response categories the items are "yes," maybe "and" no. "

This tool, based on VAK (Visual-Auditory-Kinesthetic) model identifies the main directions mobilized for the purchase of learning and classifies them as visual, auditory or tactile / kinesthetic [11] (Miller 2001).

The VAK model provides a quick and easy reference for inventory and assessment of the preferred styles of learning, and, more importantly, the design of learning methods and experiences that match the preferences of the people.

Biggs, Kember and Leung [16], based on the model Presage-Process-Product (3P), have developed a more simplified version of the instrument Student Process Questionnaire for the understanding of study processes and approaches to learning, the Revised two-factor Study Process Questionnaire (R-SPQ-2F).

This instrument evaluates the relationship between student characteristics and education context, their approach to learning tasks and learning results. The approach to learning, according to the authors, can be superficial, deep or high-performance and involve different motivations and strategies. In this study, we use the Portuguese translation of the Brazilian-validated scale Revised two-factor Study Process Questionnaire (R-SPQ-2F, performed by Godoy)[17]. In this validation for the Portuguese language, the original scale was initially subject to translation and retro-translation processes. Its final version is constituted by 20 items, evaluated in a 5-point Likert-type scale, from "never" (1) to "always" (5), grouped in 4 sub-scales: deep motivation, deep strategy, superficial motivation and superficial strategy. There is a linear, positive and significant correlation between deep motivation and deep strategy and between superficial motivation and superficial strategy (moderate and low, respectively). Low linear, negative and statistically significant correlations are found between deep and superficial motivation and between deep and superficial strategy.

The values of internal consistency, evaluated by Cronbach's alpha, are compatible with those in the original scale, regarding deep approach ($\alpha=0.76$), and even superior regarding superficial learning ($\alpha=0.74$). The internal consistency and validity of criteria reveal the good psychometric qualities of the instrument. The same may be said about the construct validity, supported by the confirmatory factor analysis, performed according to the Structural Equation Model (SEM). Thus, the structure of the reviewed version shows two non-hierarchical factors, distinguishing the deep approach from the superficial approach, each of them comprised by ten items. The results of this validation meet the results of exploratory and confirmatory factor analysis carried out in other studies, namely in Spain [18] and reveal a very satisfactory adjustment in view of the original model. Given the above, it seemed suitable to use this instrument in the Portuguese language in order to evaluate the approaches to learning.

In the third part of the survey, in order to evaluate the inmates' involvement in LL activities, we used the 14 items included in the Lifelong Learning Questionnaire, by Kirby, Knapper, Lamon, & Egnatoff [1]. The items used are based on the lifelong characteristics of the learner, defined by Knapper and Cropley [19], namely the establishing of goals, the application of knowledge and skills, self-direction and evaluation, search for information and adaptation to learning strategies. According to the authors, the scale evaluates the tendency/inclination of adults to LL, which results from the combination of prematurely defined features and situational factors taking place at a later stage, making it necessary to focus on those features and situations and realize how they can be manipulated in a desirable sense. The items are evaluated in a 5-point Likert-type scale, from "I completely disagree" (-2) to "I completely agree" (+2).

2.3 Procedures

The inmates were asked to answer three questionnaires (VAK, R-SPQ-2F and LL), by learning platform Moodle. The task was optional, although it they were encouraged to participate. The anonymity and confidentiality of the individual results were guaranteed. The completion of the questionnaires was contextualized in the setting module to the Moodle platform, one of the project training modules E-PRIS [5]. The design and implementation of this module enabled the development of new methodologies and tools appropriate educational intervention in this population.

3 RESULTS

The results will be presented at the general level and individual level.

Table 1 presents the general results of the inmates' learning approach and style.

Table 1: Learning approach and style

	R-SPQ-2F*		VAK
	Deep approach	Superficial approach	
I1	4.00	1.80	KVA
I2	3.00	2.10	VK
I3	2.00	1.60	AK
I4	4.00	2.10	KV
I5	1.90	2.00	KA
I6	2.90	2.60	KA

* average value

As Table 1 shows, there is a tendency for deep learning. There is only one inmate with an approach slightly more superficial then deeper. That means that, according to Ramsden[20], their learning strategies have the following characteristics:

- − Focus is on "what is signified";
- − Relates previous knowledge to new knowledge;
- − Relates knowledge from different courses;
- − Relates theoretical ideas to everyday experience;
- − Relates and distinguishes evidence and argument;
- − Organises and structures content into coherent whole;
- − Emphasis is internal, from within the student.

As the VAK learning styles concern, the inmates, in general, favors a Kinesthetic style. That means that they prefer to learn via experience, by doing things.

Table 2 presents the general results of the lifelong learning questionnaire.

Table 2: Lifelong learning questionnaire*

I1	2.80	4.67	4.00	3.00	3.00	3.29
I2	2.60	4.00	4.00	4.00	2.67	3.07
I3	3.60	3.67	4.00	3.00	4.00	3.79
I4	3.00	1.00	1.00	3.00	2.33	2.14
I5	1.80	1.33	1.50	2.00	1.33	1.50
I6	3.20	3.33	3.00	2.00	2.67	2.93
	Goal setting	*Application of knowledge or skill*	*Self-direction and evaluation*	*Search for information*	*Adaptation to learning strategies*	*Total LLL*

* average value

As Table 2 shows, the inmates present a high predisposition to the LL, only 2 showed overall results lower than the average of the items. In order to better understand the results, we will present the individual results of each inmate/trainee.

Inmate 1

This inmate attains above average values with regard to the provision to LL. The same applies to the amounts related to the learner's characteristics throughout life, including the orientation objectives, application of knowledge and skills, self-direction and evaluation, information localization and adaptation of learning strategies.

With regard to approaches to learning, this inmate favors deep learning, deep motivation and deep strategy. She preferably uses the style of visual learning, but also refer in a balanced way the tactile visual style / kinesthetic and auditory.

Inmate 2

This inmate attains above average values with regard to the provision to LL. The same happens with the referents values the learner's characteristics throughout life, including the orientation objectives, application of knowledge and skills, self-direction and evaluation, information localization and adaptation of learning strategies.

With regard to approaches to learning, this inmate favors deep learning, deep motivation and deep strategy. Preferably uses the style of visual learning, followed by tactile/kinesthetic.

Inmate 3

Inmate 3 also got above average values with regard to the provision to LL. The same happens with the referents values the learner's characteristics throughout life, including the orientation objectives, application of knowledge and skills, self-direction and evaluation, information localization and adaptation of learning strategies.

With regard to approaches to learning, this inmate favors deep learning, deep motivation and deep strategy. She preferably uses the style of auditory learning, followed by tactile / kinesthetic.

Inmate 4

The I4 shows values below the mean with respect to the willingness to learn throughout life and, in particular, the dimensions of the application of knowledge and skills, self-direction and evaluation and adaptation of learning strategies.

With regard to approaches to learning, this inmate favors deep learning, deep motivation and deep strategy. She preferably uses the tactile / kinesthetic style of learning, followed by the visual style.

Inmate 5

The I5 presents below average values with respect to the willingness to LL and all learner dimensions throughout life, except for orientation purposes.

With regard to approaches to learning, this inmate favors superficial learning, superficial motivation and superficial strategy. She preferably uses the tactile/kinesthetic style, followed by auditory style.

Inmate 6

The I6 got above average values with regard to the provision to learn lifelong and all learner dimensions throughout life, except for the location dimension information. She emphasizes the profound learning, but shows a superficial motivation. She preferably uses the tactile / kinesthetic style, followed by auditory learning style.

In general, there is a tendency for deep learning. Most prisoners show a willingness to learn throughout life. These results show the need to be considered the different ways of learning in the training that integrates the prison routine.

Regarding the relationship of learning approaches with the tendency / inclination to engage in lifelong learning activities, we find that from the 5 inmates who favor deep learning, 3 of them are even more predisposed to learn throughout life. The inmate that favors superficial learning, superficial motivation and superficial strategy is also the one that shows less available to learn throughout life. This relationship seems to indicate a tendency towards the prisoners with greater predisposition to learn throughout life is also those that show a deep approach to learning.

The preferred learning style is tactile / kinesthetic, namely in the reclusive less willingness to learn throughout life. Only one of the inmates favors deep learning prefer this learning style.

4   CONCLUSIONS

The e-learning in prisons initiatives are consistent with the guidelines of the European Union of inclusion and smart and sustainable growth. In this sense, like other European countries, it was developed in Portugal an e-learning platform taking into account pedagogical and technical issues. From the pedagogical point of view, it is essential to take into account the characteristics of adults

learner. That is precisely the focus of this article that analyse the inmates' approach to learning, specifically styles and approaches to learning, as well as predisposition to the LL.

The results can't be generalizable, however, in this study, there is a tendency of inmates with greater predisposition to learn throughout life to show a deep approach to learning. There is preference of the tactile / kinesthetic learning style, this fact is in accordance with other studies [2][14]. It seems that, in this case, the prison context don't interfere with this preference.

In this sense, as Barros, Monteiro, Nejmedinne and Moreira [21] referred: "by promoting an environment conducive to learning, the teacher is able to gradually inspire this love and stimulate the autonomous processes of discovery, typical of a self-regulated learning" (p. 796). This enhance the need for resources to be made available in different formats (text, audio, visual and multimedia) and to propose activities and tasks with different possible answers, articulated and contextualized in a learning environment that takes into account the specificities and the differences between students. In short, knowing the adult's learning approach can contribute to pedagogical differentiation and increase participation in digital environments and LL activities.

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