

219 - THE INCREMENT OF LEARNING IN THE SUBJECT OF ELECTRONIC OF THE COURSE OF ELECTRICAL ENGINEERING THROUGH THE APPLICATION OF THE CONCEPTS OF THE ANDRAGOGY IN FACULTY OF ELECTRICAL ENGINEERING (FIT).

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INTRODUCTION

The high demand of the sector of new technologies and new materials in Brazil has taken many private organizations and governmental institutions to the search to put highly qualified Engineers in all the knowledge areas. The manufacture of Semiconductors and Integrated Circuits (CI) Dedicated is an emergent and strategical sector for Brazil (ABINEE, 2009). The worldwide changes economical or social changes modify the conceptual and structural paradigms and of values and define new behavior.

In front of such scenery, the Department of Human resources of Private companies or State, make effort to contract professionals with high degree of Abilities and Competency in its areas of knowledge. For many companies, this has been a basic requirement at the moment of the act of contract, therefore what if it waits it is to exceed the good performance of the professionals who already act in these organizations with new talent.

Independent of difficulties the Faculties of Electrical Engineering (IES) needs to be prepared to teaching high qualified professionals in order to attend the demand of the market. (KUAZAQUI, 2004).

Those that already are attending a course, ahead of the imposed difficulties to put inserted mainly social factors in the great urban centers; where the pupil divides its daily day or shares the time between studying in the IES and working, they finish having a lesser pertaining to school income and that if he will not be treated at the which had moment, he will be able to take the pupil the desmotivação, estresse to it and in some more chronic cases, the desistance of the university course.

Currently to place in the Curriculum or Summarizes that it is attending a course a College, many times are not synonymous a significant differential and so little of job guaranteed in the work market. Then, as the knowledge acquired in each semester of the course can be changed into a positive differential for graduating in order to guarantee the expectations and necessities of the market of sedento work to put qualified professionals? How to create motivacionais stimulators for advanced contents of technology, many exhausting times, that will be necessary to improve the Quality of Life of the Society and to take care of the requirements of a futures market?

This article aims in part to awake in the University teacher under the optics of the Andragogy the necessity of the paradigm change and ahead shows to the requirement of a readjustment of the education strategies learning of the current scene of technological development.

THE CONCEPT OF ANDRAGOGY

The concepts of the Andragogy (KNOWLES, 1970) had been created to put Malcolm Shepherd Knowles (1913-1997) and were considered in the USA the central figure in the Education of Adults in Century XX. Knowles if graduated Harvad in Philosophy and was President of Liberal Harvard Club, Secretary of the New England Model League of Nations and President of the Phillips Brooks House.

The concepts Mr. Knowles comes being used to put educators due to its practical aspect in the education and learning of the adults and in the academic study of the education of the adults. Currently the concepts of the Andragogy are considered a great technological revolution also in the Industry, therefore they take on managers to the Department of Manufacture and Production to the attainment of the organizational excellency (HEY, 2001).

The areas of success with the application of the Andragogy are diverse, as: in the long-distance Education (SCREMIN, 2001), in the Business administration (BASTOS, 2003), in the Nursing as form to speed up the whitewashing, in the learning of Foreign Languages (SZWARC, 2004) and in the acceleration of the learning of Computer science in adults (CASSETTARI, 2001).

COMPARISON BETWEEN STRATEGIES OF EDUCATION LEARNING

The main aspects related with the problem of education (BORDENAVE, p.15) are related with: the teacher; the Programs of Study; the methods, installations and materials of education; the pupils; the forms of evaluation of the learning; the institucional conditions that affect education.

As it forms to improve education is considered that the teacher must have beyond an integral vision of the problems that affect education, to have a vision of which abilities and abilities must be developed. Below we have a comparison between the model Pedagógico and Andragógico (GOECKS, 2003):

	Pedagogical Model	Andragogy Model
Experience	The experience of that it learns is considered of little utility. What it is important is the experience of the teacher	The adults are carrying of an experience distinguishes that them from the children and the young. In numerous situations of formation, they are the proper adults with its experience who constitute the resource richest for its proper learnings
Disposal to learn	The disposal to learn what the teacher teaches has as bedding internal criteria and objectives to the pertaining to school logic, that is, the purpose to get success and to progress in pertaining to school terms	The adults are made use to initiate a learning process since that they understand its utility better to confront real problems of its personal and professional life.
Orientation of the Learning	The learning is faced as a discovery process on one determined subject. This means that the logic centered in the contents is dominant, and not in the problems.	In the adults the learning is guided for the resolution of problems and tasks with that if they collate in its daily life (what it dissuades a logic centered in the contents)
Motivation	The motivation for the learning is basically result of external stimulations to the citizen, as it is the case of the pertaining to school classifications and the appreciations of the teacher.	The adults are sensible the stimulations of the external nature (notes, etc), but are the factors of internal order that motivate the adult for the learning (satisfaction, auto-esteem, quality of life, etc)

Moreover the teacher must understand the process of the learning; to know the pupil better as person and member of a community; to plan the lessons of sistêmica and integrated form; to teach the pupils to study and to learn; to know as to introduce innovations; to stimulate the active participation of the pupils; to improve the communication teacher pupil; to develop in the pupils the attitude and the ability of the research; to rationalize the evaluation; to create units of pedagogical support that help the teacher to produce its material of support; e pedagogical support to the pupil with access the basic, complementary bibliographies and the periodic ones.

III. DEVELOPMENT

In order to verify the sensitivity of the pupil to the andragógico method, the scale of Likert was elaborated a questionnaire using to be applied in 43 pupils of Electric Engineering attending a course sixth of ten semesters during 30 days. Divided in two groups, an only responsible teacher for the theoretical and practical lessons in the electronics laboratory the room was divided in two identified groups as T1 and T2. The theory lesson was developed for both groups while the laboratory lessons had received treatments in agreement follow:

48 hours elapse between the lesson of theory and practical lesson				
Laboratory - Practical Lesson				
Teacher	2 lesson of theory by week	Group T1 with 4 team	Pedagogical Model	1 activity by week
		Group T2 with 4 team	Andragogy Model Method	1 activity by week

As result, we observe a better performance for the pupils using the andragógico method during the theory lessons.

This better result for the Andragógico method is strengthened by Rodrigo Goeks :

"Some research affirms that adult students learn only 10% of what they hear, after 72 hours. However they are capable to remember 85% of what they hear, they come and they make, after same the 72 hours. It is not only enough, therefore, the involvement of the human being in the sphere of "thinking", through logical and rational stimulaton. The involvement in the sphere of "feeling" is necessary, providing interior and emotional stimulaton."

Identified the improvement chance, it will be considered a change in the Methodology and Procedure for the development of the Content Programático. They will be the 3 stages for the development of the work and collects of the data:

To increase the sample for other contents programarians;

To measure the performance through Evaluations directed for the Specific Objectives of Disciplina;

To compare the methods and to identify chances to improve the abilities and abilities of the pupil.

IV. CONCLUSION

It was observed that nor all the students of Electric Engineering of the sixth semester are accurately adult, but are next to this phase of its lives. Classic education can result, for many of them, in a retardation of the maturity, since it demands of the pupils one total dependence of the teachers and established resumes.

It was evident also that if a IES that does not lead in education account practical advanced, or that does not search synergy between areas as Pedagogia, Anthropology, and Social Psychology in the Education hardly will be enabled to identify the agents of changes that take in them to the limits of our paradigms.

Others will be forced to leave to adornecer its initiatives, some times marking of deep form its personalities because they had not received adequate stimulaton motivacionais. Many will remain dependents, will have difficulties to adapt themselves to the joined different conditions are of the IES, therefore the contents worked during the graduation, of the pedagogical point of view, had not been advanced the sufficient the point to make possible adequate the intellectual development.

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ABSTRACT

This paper intend to investigate and propose a revision of methodology for adult education to support Electronic in Electrical Engineer graduate at Faculdades Integradas Torricelli. The research is of the descriptive type and has as objective to collate the current pedagogical reality with the andragogic method, therefore being the pupil an adult individual, this would have to be coherent with the conditions pointed for the andragogical method as being necessary with respect to the success of the learning of the adults. A vision conservative indicates that and the methodology for use of the electronics laboratory restricts it anticipatedly the evidence of the theory showed in classroom. In contrast, based on board of abilities and skills are pointed in this paper that the topics of the content of program can be presented initially in the laboratory, and a time gotten the data for analysis, these will be used to put out and to awake the scientific questioning. Thus the observation and data gotten in the laboratory will be the base for the analyses, quarrels and better understood durin theory class because they reflect the common reality of the group. As a result is expected a better relation between education and learning with the same period of treatment of the program.

KEY WORDS: Electronic, Andragogy, Social Psychology.

L'ACCROISSEMENT DU PROCESSUS J'ENSEIGNE APPRENTISSAGE DE LA DICIPLINE ÉLECTRONIQUE DU COURS D'INGÉNIEUR ÉLECTRIQUE À TRAVERS L'APPLICATION DES CONCEPTS DE L'ANDRAGOGIE DANS L'ENSEIGNEMENT SUPÉRIEUR PRIVÉ (IES).

RÉSUMÉ

Cet article a comme intention enquêter et proposer une révision dans la méthodologie d'enseignement et un apprentissage pour la discipline de l'électronique dans les Facultés Intégrées Torricelli. La recherche est du type exploratoire et sur base d'entrevues et de discussions avec des professeurs et d'élèves il est confronté la réalité pédagogique actuelle et les présuppositions andragogiques. L'élève ici est considéré comme une personne adulte, ainsi il est cohérente avec les conditions indiquées par l'andragogie comme en étant nécessaire pour le succès de l'apprentissage des adultes. La discipline de l'électronique est divisée également dans leçon théorique et leçon avec pratique en laboratoire. Et une vision conservatrices suggère que la méthodologie pour utilisation du laboratoire de l'électronique se restreigne à la constatation de la théorie, exposée d'avance dans salle de leçon. Au contraire, cet article utilise comme base le tableau de compétences et les habilités et proposer que quelques sujets du contenu programmatique doivent être présentés initialement dans le laboratoire. Ainsi la réalité des élèves en conséquence du commentaire et de se rassemble des données dans le laboratoire seront la base pour l'étude dans la leçon de théorie. À travers cette synergie entre la leçon théorique et du laboratoire est attendu un meilleurs revenus entre l'enseignement et l'apprentissage pour la même période de traitement du contenu du programme.

LO INCREMENTO DEL PROCESO ENSEÑANZA APRENDIZADO DE LA MATERIA ELECTRÓNICA DEL CURSO DE INGENIERÍA ELÉCTRICA POR MEDIO DE LA APLICACIÓN DE LOS CONCEPTOS DE LA ANDRAGOGIA EN LA ENSEÑANZA SUPERIOR PRIVADO (IES).

RESUMEN

Este artículo tiene como propósito investigar y proponer una revisión en la metodología de enseñanza y aprendizaje para la materia de Electrónica en las Facultades Integradas Torricelli. La investigación es del tipo exploratoria y con base en entrevistas y discusiones con docentes y discentes es confrontado la realidad pedagógica actual y los presupuestos andragógicos. El alumno aquí es considerado como un individuo adulto, así él es coherente con las condiciones apuntadas por la andragogia cómo siendo necesarias para el éxito del aprendizaje de los adultos. La materia de Electrónica es dividida igualmente en aula teórica y aula con práctica en laboratorio. Y una visión conservadora sugiere que la metodología para empleo del laboratorio de electrónica se limita a la comprobación de la teoría, expuesta con antelación en sala de aula. Al contrario, este artículo usa como base el cuadro de competencias y habilidades y propone que algunos tópicos del contenido programático deban ser presentados inicialmente en el laboratorio. Así la realidad de los alumnos en consecuencia de la observación y de la recolecta de los datos en el laboratorio serán la base para el estudio en el aula de teoría. Por esta sinergia entre el aula teórica y de laboratorio es esperado un mejor rendimiento entre la enseñanza y el aprendizaje para el mismo periodo de tratamiento del contenido del programa

O INCREMENTO DO PROCESSO ENSINO APRENDIZADO DA DICIPLINA ELETRÔNICA DO CURSO DE ENGENHARIA ELÉTRICA ATRAVÉS DA APLICAÇÃO DOS CONCEITOS DA ANDRAGOGIA NO ENSINO SUPERIOR PRIVADO (IES).

RESUMO

Este artigo tem como propósito investigar e propor uma revisão na metodologia de ensino e aprendizado para a disciplina de Eletrônica nas Faculdades Integradas Torricelli. A pesquisa é do tipo exploratória e com base em entrevistas e discussões com docentes e discentes é confrontado a realidade pedagógica atual e os pressupostos andragógicos. O aluno aqui é considerado como um indivíduo adulto, assim ele é coerente com as condições apontadas pela andragogia como sendo necessárias para o sucesso do aprendizado dos adultos. A disciplina de Eletrônica é dividida igualmente em aula teórica e aula com prática em laboratório. E uma visão conservadora sugere que a metodologia para uso do laboratório de eletrônica restringe-se à comprovação da teoria, exposta antecipadamente em sala de aula. Ao contrário, este artigo usa como base o quadro de competências e habilidades e propoe que alguns tópicos do conteúdo programático devam ser apresentados inicialmente no laboratório. Assim a realidade dos alunos em consequencia da observação e da coleta dos dados no laboratório serão a base para o estudo na aula de teoria. Através desta sinergia entre a aula teórica e de laboratório é esperado um melhor rendimento entre o ensino e a aprendizagem para o mesmo período de tratamento do conteúdo do programa.

PALAVRAS-CHAVE: Eletrônica, Andragogia, Ensino Aprendizado.

PUBLICAÇÃO NO FIEP BULLETIN ON-LINE: <http://www.fiepbulletin.net/80/a1/219>