

to nature and others, to any living creature. On the basis of the real facts students faced the revaluation of the abilities of nature and the place of a man. Moral interpretation of inextricable links with nature made all the participants feel responsibility for its preservation.

Educational field training in Nature Park "Bazhovskie mesta" has great potential and opportunities for educating a man cherishing nature of the native land.

Findings lead to understanding of the interdependence of man and all inhabitants of ecosystem. Man is a part of the complex system – the Nature. Such environmentally friendly world-view makes young people more responsible towards nature and any form of life.

Following these principles the course is

based on the concept that man and nature are interrelated elements of the Earth. Man acts primarily as a spiritual and moral being who is responsible for all further activities, attitude towards other people, animals and plants of his native land.

Prospects of further actions should be targeted at:

1. Expending quality and quantity of environmental studies.
2. Enhancing environmental training in educational systems.
3. Creating environmental brigades at the universities and schools with the view to the acting construction brigades. Particular attention should be paid to stimulation of environmental intelligence.
4. Forming a man with the "reverence" for life.

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Learning Factories: The Way to Create World Class Graduates Through Engineering Education

The Private High School of Engineering and Technologies Tunis, Tunisia
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The learning factory can be defined as a type of university – factory (or professional institution or company) that aims to produce better generations of students and make them more ready to market. This paper describes a model of learning factory made at Esprit School of Engineering, Tunis, Tunisia. This paper shows also the specifications of this experience as it is held at in an institution already facing major changes in its curriculum due to following active learning educational approach.

Key words: active learning, learning factory, educational programs modernization, education engineering, software engineering.

I. THE IDEA

Esprit School of Engineering follows the PBL approach: Project/Problem Based Learning in its courses for its different fields. The main aim of this adopting this student-centered education approach is to guarantee a better results of employability shaping a ready-to-market engineer profiles. The idea came to follow the Learning Factory model at several universities in the world to be the next step after the basic three years of Project Based Learning: Esprit learning factory saw the light in late 2014 to be a space where the student lives the transition from his university to the professional world. Esprit learning factory is acknowledged after analyzing the trending and similar experiences aiming to provide the best transitional environment for the graduate students with the supervision of IT companies and partners.

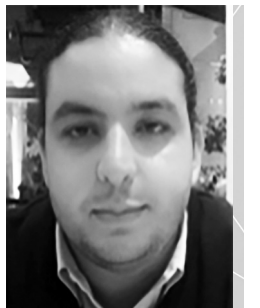
This paper will mainly present this educational experience as a new experience for the educational and professional field in Tunisia. It specifies this experience and the main basis with a first analysis of the industry and faculty needs and expectations.

II. THE CONTEXT

As the main objectives of a learning factory at Esprit are essentially about

shaping ready-to-market engineer profiles in relation with the main project about adopting the active learning pedagogic approach, the need of understanding the context of such an experience remains vital to determine the way of establishing a learning factory. It is essential to know about the needs from the viewpoint of the industry and of the faculty.

- The industry seeks to raise its profits by accelerating the integration of newly hired engineers. The industry seeks for the engineer who applies the fundamentals and integrates the industry to be a productive. In addition, the specific case of IT, implies to be adapted to the new markets and technologies as soon as it appears.
- □ The Faculty, in the other hand, is interested in the measurement of its quality of students, professors and its curriculum simultaneously to shape the perfect profile for national and international accreditation, and therefore distinction. Adopting an active learning pedagogic approach aims to make the faculty more and more active following a student-centered approach implying an active educative environment (updated



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courses, a multitude of scientific papers and conferences).

III. THE LEARNING FACTORY: A WAY TO GET TO THE MARKET BEFORE GRADUATION

Esprit learning factory is established in a whole building which is composed by companies and startups following a practice-based curriculum in order to integrate Esprit graduates into the professional world. The graduates are mentored by their professors in collaboration with the company. This creates an interactive environment in which the graduate student finds the instructor, the mentor and the team mates to help him face the difficulties of the professional world respecting a practice-based curriculum containing a balanced theoretical and practical knowledge.

In the faculty side, the learning factory is the place where the student meets the marketing and business mentors to know and understand the business side of his work. The student meets the appropriate mentors to know about the technical side of his tasks and so on. The mobilization of the teaching staff, makes the student more and more ready in the theoretical and analytical side to face what the factory project demands.

The Learning factory is a whole concept. It is a kind of bridge between the university and the professional world. In fact, the companies installed in it are selecting the students of Esprit, not only to hire them but also to give them the possibility to develop their end of year projects (CapStones) inside a working ecosystem. So the engineering students, during their last year of studies, will on the one hand get closer to the practical aspects of what they have learned in the academic environment and on the other hand, these future engineers will have the possibility to build their own professional network so they guarantee

their employability once graduated.

It is also important to mention that the active pedagogy that Esprit adopt in the learning process facilitates a lot the team work in these enterprises and also the communication with different agents dealing with them from conceiving the solution for the company to bringing the product or service to the market.

Here we can talk specifically about the advantage that these companies will win from choosing Esprit students to work for them on their prototypes or/& solutions. The big deal is especially the background already prepared that these students have thanks to the BPL (project Based Learning) method that has been installed in their way of resolving problems and designing solutions.

The learning factory becomes with all these valuable strengths of the future engineers a very suitable environment helping the university pin producing operational engineers ready to integrate the market.

VII. CONCLUSION

In this paper, we presented the experience of establishing the Esprit learning factory as a space in which the graduated student can get in touch with the professional world while maintaining a relationship with his educational ecosystem: the idea, the context and the desired impact.

The desired outcomes of the Tunisian model of the learning factory is mainly to continue being the distinction as an experience and to help providing new opportunities to students nationally and internationally. This distinction may present a model to shape a new economic model in Tunisia, a country recently out from a political transition and therefor, in need of a new type of resources to overcome the transition phase.

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