

The conduct of laboratory courses in Secondary Technical - Vocational Education in Greece: Current situation - Proposals to upgrade the implementation of the laboratory exercises in the Vocational Schools

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Abstract *The Technical - Vocational Education (TVE) is the second pillar of secondary education in Greece, while is the main educational provider of Technical and Vocational Education. Until now it's trying to determine its exact role and to give it the substance and the prospect that it promised to Greek society. The offer of substantial practical experience, although is one of the primary purposes of the TVE, it seems that so far has failed to implement successfully.*

This paper will attempt, in the sense of upgrading the educational process to the Vocational Schools, to present a series of proposals, which are designed to optimize instruction of laboratory exercises for their students' trainees to gain substantial practical experience. The submission of these proposals hopes to contribute to efforts to promote the educational work of the TVE and the improvement of the level it deserves.

Keywords. Laboratory courses, Technical - Vocational Education, Vocational Schools.

1. Introduction

The establishment and operation of Technical - Vocational Education (TVE) in our country dictated by the need to develop and support the technological infrastructure, while providing the opportunity to acquire practical and theoretical technical - vocational skills to those who wanted something like this. The time course of public secondary TVE in Greece determined from regressions, haphazard planning, inefficiency, and indifference for its substantial support [1]. In this cloudy educational landscape for TVE, the offer of substantial training in the context of Curriculum, will contribute constructively to the effective presence of TVE to the educational needs of the community to provide substantial Technical - Vocational Education.

2. The current situation in secondary Technical - Vocational Education in Greece

The period after dictatorship meets the tee in an effort to determine its identity. Reform efforts in order to upgrade the quality of service from this training and its educational role generally, does not seem to have a positive effect.

During the transition, the very low participation rates in secondary TVE [Fragoudaki,1977:26] [2], along with the ever increasing demands of work, led to Law 576/1977, which established the Technical Vocational Schools (TEE) and Technical Vocational Faculties (TES). The Technical Vocational Schools, equivalent to General High Schools, and providing the opportunity in higher education and the opportunity to enter to the labour market, sought to reclaim the trust of the Greek people to them, though the entrenched attitudes of society in general education does not allow yet optimistic prospects for the TVE. Unfortunately, even the designs of the state for the purpose of operating the TVE are based on false grounds, because in the TVE's role was to address the overcrowding in the Gymnasiums also the massive accumulation of graduates at the entry to universities [Bouzakis, 2006:144][3]. Moreover, both the negative colouration of manual labour in connection with the spiritual in beliefs of Greek society and the lack of interest of the State for TEE about to inadequate logistics, to convenience and often asynchronous curricula, to lack of care the training of teachers, were negative factors for determining the route of TVE.

In 1985, by the Law 1566, next to the Technical Vocational Lyceum and to Technical Vocational Faculties are created the Uniform Multi-sector Schools (EPL), which are designed to integrate the General education with the Technical - Vocational training, linking theory to practice. But this was not crowned with success since the life of the EPL was brief.

In 1998, with the Law 2640, established the Technical Vocational Schools (TEE) in place of Technical Vocational Lyceum and the Technical Vocational Training Schools. The Explanatory Report of the law speaks - as the others earlier - for an enhanced and flexible Technical - Vocational education, which aims to provide appropriate qualifications for professional membership, but also for continuing education [4]. It is true that the Law 2640 sought a substantial integration effort of the practice of education - of students in real working environment, providing that: "... may be awarded contracts with public or private sector for laboratory exercises and practical application of skills for the pupils of Technical Vocational Schools [Article 5, paragraph 2]. This provision of the law about the possibility for the placement of the students of Technical Vocational Schools in businesses and organizations was presented in the next period of its publicity with great intensity, creating the feeling of those directly concerned in technical education major hopes of connecting with the labor market for the benefit of TVE's pupils in practical terms. Unfortunately, this call has become unworkable. Although the need for education of students of TVE in the real business environment continued to be stressed in any way, unfortunately, the activation of the above provision has never been settled to provide Technical - Professional Training in dual dimension, although the same law defines that the purpose of secondary Technical - Vocational Education is: " the combination of General Education with specialized technical and professional knowledge to employability in the labor market" (Article 1). In Ministerial Decision G2/6098/13 - 11-01 is referred: "The visits by students and train them in work environment is considered essential to the educational process and must be at regular intervals and well scheduled" (Article 14, paragraph 5). Furthermore, the Head of Department B' TVE of Ministry of Education, Mr. Lagos, speaking at the launch of the International Conference: "The Technical Vocational Education in Europe" [5] stressed that desire of the Ministry of Education is the Vocational Rehabilitation of students in TVE after practice and joining the labor market in the new enlarged area of Europe.

Unfortunately, the course attendance of pupils at the Technical Vocational Schools and the striking rates of student leaking from them came as a natural reaction of society to the

continuous depreciation of the state. It is significant that for the cohort of pupils for 2000 - 2001 the leak in the A' course of TEE was identified in 20.28%, while taking into account the corresponding course in B', then flashed off the leak even higher, at 28.81 %, where the same in general upper secondary schools is just 3.32% [Pedagogical Institute, 2007:147] [6].

The continued indifference of the Greek State to actively and effectively support the Technical - Vocational Education, creating negative reactions, which result in the conversion of Technical Vocational Schools in Vocational upper secondary schools (EPA.L.) and Vocational Training Schools (EPA.S.) by the Law 3475/2006. The reactions and objections to this new type of Technical - Vocational Education does not take long to appear [7], while the swift enactment of EPA.L and EPA.S in place of TVS created unfavourable reviews.

It is obvious that the attempt to be tied the practice of students of TVE with the labor market has not received the sustained attention of the state. This had a dual effect: on the one hand the disappointment of those who come to the Technical - Vocational Education, that has leading to dramatic reduction of students potential, in contrast to bright prospects and forecasts generated by the announcement of substantial interaction with the labor market [8]. On the other hand, this powerful weapon to all-round education and training of students of TVE to remain undeveloped, a negative event, not only those directly involved in it, but for the comprehensive benefit of society.

3. The necessity to connect the TVE to the labor market

The need to tie training to the labor market is the constant changes taking place in every business sector, a development that the labor market focuses on it with consistently. This fact makes the labor market call itself as the necessary and essential area of vocational experience and additional education and - the most importantly - training.

In this context, it seems imperative the need to find solutions - proposals that will be required to mitigate, to the extent they can, the irreplaceable vacuum created by the lack of practical experience in real working environment.

The catalytic role of education for a country's Technical Vocational development and for the

economic and vocational improvement of its people is evident because of the current social structures are determined largely by the rapid growth and development of technology in all areas. Under this perspective, the TVE is required and is able to contribute substantially in this direction, provided its role to be completely accepted by society and supported in all its dimensions from the state.

The delineation of the role of TVE in the Greek reality is determined by the needs that required meeting and by responding positively to the offer substantive responses to the request for Technical - Vocational education. In this context, the TVE does not seem to have managed to win the bet, having continued and continues to remain isolated from the real mission, if not managed so far to link creative theoretical training with practical, action that the binary system promises to implement successfully.

According to the binary system, the theory of Technical - Vocational Education is at the school, some of the practical application - practice in the school laboratory, and the substantial practical experience - education is at real working conditions, in a company. During the practical exercise the apprentices are paid, they are secured against employment risks and for the health and care. The State will ensure the necessary contracts with companies that will undertake to provide practical training to trainees, while law regulates relations and student - company.

The application of dual system in technical - vocational schools in our country do not apply even today, despite occasional official declarations and commitments by law to do so, and despite the positive educational outcomes that the system has led to the respective educational levels of other European countries such as Germany, Great Britain, Ireland, Denmark, the Netherlands [16]. In addition, the ratings employed in TEE in most cases not directly related to the relevant labor market needs. Result of this is the vast majority of graduates of TVE (to 80.4% for males and 64.1% for females) employed on an object which is not related to his specialty who studied at Technical - Vocational Education [9]. In addition, several studies have show that there is a gap between workers' skills and needs of the business, a gap that is mainly determined in terms of lack of skills of workers [17].

The student leak which the TEE showed during the time, despite initial promising

forecasts [8] is indicative of the reaction of Greek society on the above.

The decline in student potential of the Technical Vocational Schools is determined embossed on the relevant statistics, which show the relevant statistics which show the potential of the student records for the first class of the first course of TVE, whereby the total change in 1999 - when TVE established for the first time - until 2006 was 53.54% of the student population [10].

The needs for equipment of laboratories of EPA.L, which were inherited from dismantled of TEE [11], continue to hamper the operation of the Technical Vocational Education against the announcements about the: "create very modern and new laboratories" [10] appear to delay characteristics in the time of their implementation.

The financial support of the TVE, both in logistical infrastructure, also in implementing programs aimed towards the acquisition of practical experience of students is a necessary prerequisite to create a second - parallel - school network.

Systematic and planned effort to connect the tee to the labor market requires the adoption and implementation of appropriate measures. In this context the implementation of the various announcements will reinforce the position of the graduates of TEE in the labor market and the assessment of Greek society in this type of education.

The care of coordination of Technical - Vocational education with the labor market so that the first is not strongly deferred and detached from the current developments, is an integral necessity in the direction of the continuous modernization, but of course this does not mean that it's a suggestion which serves the labor market and training disposable workers.

4. The role and the functionality of the incentive in the educational process

The incentive is defined as anything that moves, push or drag the man into action. The incentives could push the person acting internally or externally. Thus, incentives regarded as the internal causes of behaviour (instincts, impulses, feelings, goals) and external causes such as the awards, the lures or respectively the scarecrow, and the repulsive sore [Kostaridou - Euclidis, 1995:17] [12].

The "theory of achieving" by Atkinson distinguishes all individuals by two learned

incentive about motivation to achieve success and that of avoiding failure. Especially the first, it appears that is what drives a person into a closer engagement with the work entrusted to him [Atkinson, 1957, 1964] [13-14]. Additionally, increasing the motivation of students leads to more systematic engagement with the subject of their teaching and better performance from their side [15].

5. Description of proposed teaching approach

The fact that each school is an independent small community with all those needs and functions of the corresponding real community is the occasion and the start of a series of proposals which, in the context of Curriculum, they hope to contribute to activate the practice of students of TVS in the school grounds, at actual conditions. This activation is a strong incentive for further learning and an involvement of students in all-round and comprehensive approach to the learning process related with their education.

Under the assumption that each school identified as a functional social cell with all those needs of a small autonomous society, a series of proposals can be implemented at school sites, activating the students of Technical - Vocational Education and involving them in creative activities that simulate those of the labor market.

The assumption of maintenance, repair, construction and installation on the premises and for the needs of the school, is a strong incentive and an important opportunity to enable students to gain professional experience through the implementation of laboratory practice. Thus, maintenance of central heating installation of the school building, also the installation of water species and the repair them can be very interesting practical items for apprentices on Central Heating Maintenance. for the needs of the school are strong incentives, also important opportunity activation for the students to have work experience in the implementation of laboratory practice. There are also many cases the school calls a plumber with the corresponding financial cost to repair a related damage. The maintenance and the repair of air conditioning equipment of the school, of the cooling equipment, also the installation new air conditioning units, falls within the scope of training of students in specialty on refrigeration plant and on air conditioning. In addition, many operations, construction and repairs at the school,

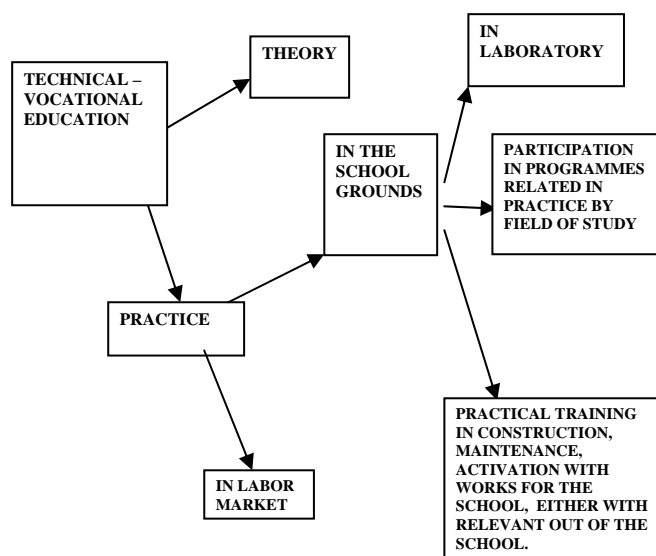
related to the practical exercises of the Department of Mechanical Engineering, and the subject of education specialty Mechanical and Construction (electric welding, oxygen welding, manufacture samples of various types of metal) can be achieved by trainees, of course, always under the direct supervision and technical advice - guidance of their teacher. Moreover, repairs of electrical faults, lamp's replacement, installing a new electrical supply, are ideal subject for the specialty of Electrical Industrial Sites and Buildings. Furthermore, And yet, the accounting requirements of the school may be undertaken by the relevant specialty of EPA.L. It wouldn't seems over the proposal to extend this training laboratory at neighbouring schools or municipal buildings from the City hosting this school (Hall, Cultural Center, etc.) or neighbouring municipalities, of course, after the necessary training relevant regulatory framework that governs such movements and actions outside the school laboratory space.

Additionally, the repair and maintenance of car of teachers of and motorcycles of students, to the extent that is technically feasible to do that in the school's laboratory, and of course under the supervision of persistent of their teacher, is an ideal practice for students of the Department of Vehicle under actual working conditions. The screening and the measurement of factors related to the smooth and economical operation of the engine and other mechanical and electrical parts for cars or motorcycles of teachers and students, also of citizens, who wish to check the condition of the truck, are also ideal opportunities for a practical approach to the corresponding laboratory object.

6. What are the benefits?

The active involvement for students under work environment conditions will provide for them an ideal opportunity to put into practice what is taught in theory and implement in the relevant laboratory, while the satisfaction that gain the students, seeing the construction, repair or maintenance conducted to function properly, it will be the incentive for them on their school experience in TVE. The degree of difficulty of carrying out some projects, will work positively to their approach from the students. It is also known that the interest in the performance of an activity increases with the difficulty of this activity.

Proposed chart for studies in Technical – Vocational Education



7. Enlargement of the proposals

The enlargement of these proposals in the school premises, also the wider local community to operate service businesses with apprentices as employees, of course under the limits of their laboratory experience, will probably seemed unrealistic in the current context of TVE, although its implementation would lead to multiple and multifaceted benefits to the student community of TVE and thus the whole local community. The framework that identifies the function of schools is prohibitive for such business in their area. But in Europe it is known that students perform at the school - and beyond - the actual functioning of enterprises in the teaching of entrepreneurship and effective interactive activation. Features such examples come from Finland, Hungary, Spain, Great Britain [15]. The operation of business premises of the school and their association with the local community, under the initiative and the substantial support of the educational community, will provide multiple integration efforts in the effective training of students of technical-vocational education, while the saving money to strengthen the infrastructure of educational workshops will be an important benefit.

Like any innovative attempt, this could not escape from the rule of dealing with possible reactions. But the detailed and systematic information to stakeholders in this effort, teachers, students, local community, will lay the solid foundations on which will build on the

success of these proposals. Moreover, in the present circumstances in Technical-Vocational Education, the success of this effort seems imperative.

8. Conclusions

The TEE offers a variety of disciplines - specialties, which they hope to fill skills and employment needs of society. This presence at a Training school of many professions in the process of learning, enables creative activation and also use them in the school on a practical level with extensions at factual situations whose outcomes will be twofold: On one hand, the effective practice of students of TVE and on the other hand saving money on school resources which will be used for medium and long term needs of the school, which was second priority due to lack of funds for implementation. Furthermore, the involvement of students in a subject that directly affects with their specialization is for them a real challenge, also a powerful incentive for learning. Moreover, it is known and continuously displayed in the eyes of teachers the fact that the application of learning objects in real working conditions is a challenge for apprentices and a high-grade learning tool in the arsenal of the teacher.

Certainly, the above proposals aren't a contrary proposal to the effective implementation of the dual system in the TVE, neither of course is a proposal for a permanent replacement.

However, in implementing a program for the students practice in real working environment conditions will be a valid option, not only until to implement the dual system in TVE, but also as a learning extension and an educational supplement too.

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