Teachers' training schemes and their preparation for secondary vocational education: Practices and concerns in Greece

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Abstract: The analysis conducted in this paper provides useful insights about training of vocational and technical teachers, both in terms of the theoretical framework surrounding the concept and how it's applied in Europe in general and Greece in specific. Taking the analysis of technical teachers' training into account, as well as its basic concepts and characteristics, it is clear that the central aim of the concept is to combine the need for teachers to acquire the necessary professional skills to practice their profession and be consistent with labour market and industrial standards at the same time. In order for these objectives to be achieved, vocational and technical teachers need to be subject to professionalization, which shall accompany throughout the whole duration of their professional career. These needs are summarized in that teachers must be characterized by discipline, acquisition of certain academic knowledge, and their combination with pedagogical studies. The case study of ASPETE's training program for vocational and technical teachers was very indicative of what these teachers actually need, in order to effectively practice their profession. Essentially, training programs must focus on the changing roles and tasks for vocational and technical teachers in modern years, as well as combine academic courses with real-life practice, so that prospective teachers are

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exposed to real teaching activities, long before they officially start building their professional career.

Keywords: vocational education, teachers' training, vocational education teachers

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1. INTRODUCTION

Teacher preparation curricula have come under scrutiny in recent years. There is growing concern among educators, parents and members of society, who would like to see higher quality preparation of teachers and training curriculum reforms become more widespread (Tzortzi, 2013). As a result, efforts are being undertaken in many countries, including Greece, to examine current preparation practices among teacher training institutions, looking for ways to improve and upgrade the manner in which prospective teachers are prepared. For example, the Education Research Center in Athens of Greece has publicly addressed the issue of quality teacher preparation in a previous report (Papagueli-Voulioris, 2009). This report challenges the practices for recruitment, preparation and retention of vocational teachers undertaken in recent years, given that these teachers belong to a category of teachers whose skills need to be specially developed, in order to be able to practice their profession effectively and efficiently.

The efforts to examine quality teacher preparation curricula have uncovered some concerns regarding academic and professional skills. In addition, teachers' educators have begun to recognize an ever-growing need to prepare teachers to serve students with multi-level abilities, diverse social and cultural backgrounds and those who are having other special educational needs as well, e.g., disadvantaged or dropout youth (Tzortzi, 2013). New demands and responsibilities have been thrust upon ill-prepared schools and teachers in meeting mainstreaming mandates. Whether or not prospective teachers will be able to meet the challenges of needs of technical and vocational education depends greatly upon the role and extent to which mainstreaming concepts were emphasized in their preservice curricula (Tzortzi, 2013).

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1.1 Statement of the Problem

Many educators are concerned about the lack of skills acquired by regular classroom teachers to meet the educational challenges of technical and vocational education. A needs assessment conducted by Putnam (2009, in Tzortzi, 2013) further stated that vocational teachers, in particular, feel secure in their occupational areas yet are apprehensive about working with students due to perceptions of limited training. Similar concerns have been expressed later on, within the Greek educational context (Tzortzi, 2013).

The Greek educational authorities recognize the significant role of teachers' training, which is to update the quality of education and educative system and to reinforce the effectiveness of teachers in a frame of personal and professional evolution, but there is a lack of systematic training and exercise of teachers in subjects that have relation with the daily school practice such as instructive, pedagogical and administrative matters. Some of the educational programs, realized in the framework of European Union, are provided occasionally, uncoordinated and unorganized, satisfying partially the educational needs of teachers (OLME, 2008).

Taking into consideration the reality of Greek educational system but also the working and social conditions of teachers' working environment, training of teachers in vocational education has to be an integral part of their professional evolution. Because of the lack of pedagogical knowledge that has been observed within the universities that provide teachers their scientific specialization, OLME (2008) proposes for teachers in vocational education to be provided with special programs of training for the candidate teachers in the subjects of pedagogy, psychology, sociology, teaching methodology, etc., with ultimate goal to provide to them a degree of a capable teacher. As another option, we may propose that the basic learning in the pedagogical education to

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be given in the classes of additional technical specialties, that are functioning in the universities, with the suitable conditions. Additionally, teachers in vocational education should perform a practice within industrial units, in order to develop and improve their technical skills (OLME, 2008).

2. BACKGROUND

Teachers and trainers in upper secondary vocational education are classified by the level of their previous education and/or training. Basically, there are three main categories: university graduates, non-university higher education graduates, and secondary education graduates. University graduates usually teach the theory of vocational subjects, graduates of non-university higher education teach both theory and practical subjects, and secondary education graduates work mainly as laboratory or workshop assistants and trainers. Lists are compiled for each category of teacher by their initial training level (mentioned previously), and teaching specialism (economics, electronics, nursing, etc.). In addition, positions on these lists also take account of certain social and educational criteria (Karmas, 2010):

- candidates who are themselves disabled or have a disabled father,
- candidates from large families (more than three siblings),
- candidates holding a Ph.D. qualification.

2.1 Technical and vocational teachers' training

The preparation of vocational and technical teachers has been a matter of serious concern, especially during the last decades. As Cooper (2009) states, it is good for teachers to have adequate knowledge on the matter they teach, but teaching in a professional manner is far more than that. Within the same context, Combs & Soper (2005) suggest that both good and bad teachers know what the characteristics of a good teacher are, and teachers belonging to both

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categories acknowledge the importance of training and initial preparation. Tzortzi (2013) identified three important elements that vocational and technical teachers' training shall contain, in order to be effective: knowledge in certain academic areas; knowledge of cultures and the society; knowledge of professional skills, competences, and practical teaching techniques.

Carlson (2002) points out that technically-trained teachers are strongly associated with students' increased performance. It is not that computers can ever substitute teachers; rather, teachers can use information technology to bring their students to the new era of learning. Of course, providing teachers with technical skills is not enough. Rather, modern teachers also need to develop their pedagogical skills, in order to improve teaching and learning in their classrooms. To put it further, Carlson (2002) suggests that in order for teachers to become more efficient and professional, they need to be involved in a lifelong process of continuous learning and personal development and preparedness.

Nowadays, technical teachers have multiple roles to play in different contexts. In the context of classroom, teachers are those that are presented as specialists in the field of their teaching (Kantonidou & Chatzarakis 2011). Within a school context, technical teachers have taken the role of managing learning and students' behaviour. As far as the context of their profession is concerned, technical teachers are members of a wider community, who share common values and professional ideas and objectives. Apart from the above, technical and vocational teachers are considered as qualified and well-educated professionals. Finally, teachers within the society are perceived as learning professionals, who have dedicated their lives in contributing to the continuous process of lifelong learning. These new and changing roles, compared to the traditional roles of teachers as they were perceived some decades ago, depend

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on the social and educational context in which they are examined and evaluated (Chappell & Johnston, 2003).

Within this context, the need for teachers' training in technical and professional issues has been apparent throughout the world. In a world characterized by intense competition in its marketplace, rapid advancements in technologies of any kind, changes in the job market and increasing levels of unemployment, initial and continuous educational preparation of professionals is probably more necessary than ever (Corben & Thomson, 2003). In order for education to be successfully distributed and promoted, the role of educators is of primary importance, given that it is their skills, competences, and knowledge that determine the effectiveness and efficiency of learners' personal development. Within the context of vocational and technical education, the only way that teachers can succeed in these professions is to have been adequately prepared for them (Grollmann, 2009).

Carlson (2002) defines *technical teacher training* (TTT) as the point of intersection between the skills that are demanded for academic professionals and the policies that national governments employ in order to help academic professionals acquire such skills. Especially in the case of technical and vocational teachers, TTT has come at the forefront of their training and initial preparation schemes. In fact, TTT is about rethinking of and reforming teachers' training schemes, in order to meet the modern educational challenges worldwide, in a way that teachers occupy the roles and accomplish the tasks that are defined by today' s educational reality (Masri, 2006).

2.2 Vocational teachers' training in Europe

The study of Evans (2008) has been very influential in identifying how major European countries responded towards the need for vocational teachers to be adequately prepared throughout their educational experience. After conducting

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a comprehensive research in nine European countries, Evans (2008) found out that teachers of vocational and technical schools have not been adequately trained to help their students towards the necessary knowledge and skills required for their professions. Within this context, Snoek et al. (2008) point out that a cost-effective way towards this direction would be to embody professional training in general education training schemes. The same researchers suggest that another approach would be to add training courses for the acquisition of technical teaching skills, which, however, is difficult to be implemented, given the lack of expertise teachers to bring such knowledge and the lack of additional time for students to further increase their workload. Snoek & Zogla (2009) suggest that no matter what the most appropriate approach is, the training of technical and vocational teachers shall change in nature and scope, trying to combine the acquisition of professional skills required and the acknowledgment of the need to be personally and socially committed to education.

Closely related to the above, the last decades have been a period of serious thought regarding the initial preparation and training schemes provided to teachers occupied in vocational and technical education. Although the European educational authorities have developed programs to enhance the development of the necessary skills and competences of such professionals, vocational and technical teachers are still confused with what it is anticipated from them, thereby reflecting the need for more coordinated efforts towards this direction (European Commission, 2005; 2007). Evetts (2006) puts it even further and states that educators claim for the need teachers to acquire more updated and upgraded knowledge to keep up with changing educational trends throughout Europe. In contrast to this statement, McKinsey (2007) points out that several educators and academic practitioners in major European countries

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- Greece being amongst them - resist to quite an important extent to the development of special preparation programs for vocational and technical teachers. According to the same research, though, the vast majority of educators in these countries agree with the need to narrow the gap between general education and professional preparation of academic practitioners and particularly technical and vocational teachers, who are perceived as belonging to a special category of teachers that definitely need certain professional qualifications.

2.3 Vocational teachers' training in Greece

Before analyzing the environment surrounding the education and training of technical and vocational Greek teachers, it would be first wise to briefly analyze the framework surrounding teachers' education in general. According to Paulissen (1995), teachers that enter a school for the first time are influenced by a number of factors, such as the extent to which they have access to information and resources, as well as the relationships they develop with their colleagues. OLME (2008) reported the results of a survey conducted by the General Secretariat for Research and Technology (GSRT) of Greece, which found that teacher preparation programs' main objective is to make teachers be able to start and develop a professional career, rather than just acquire a degree that will simply give them the authorization to teach. According to the same research, new teachers need to be supported by various teaching techniques, while it also identified a number of important elements of an effective preparation program, the most important of which being professional conduct, student discipline, and classroom management.

As far as educational programs for technical and vocational teachers are concerned, these mainly refer to occupational programs, such as business or industrial education, aiming at offering teachers the necessary skills to practice

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their teaching profession. Except for specific courses, these programs also offer general education (Kantonidou & Chatzarakis, 2005). Greece has not yet done enough towards vocational education. Despite the fact that national governments have tried to improve the quality and efficiency of preparation programs for teachers, vocational teachers do not seem to be very involved in such training mechanisms generally (Papagueli-Voulioυris, 2009).

Technical Universities and the School of Pedagogical and Technological Education (ASPETE) form the two educational institutes through which vocational teachers have the opportunity to get educated and start their professional career. Given that ASPETE is the only institute of Greece that offers pedagogical education, it is obvious that there are many vocational teachers that start their career without having acquired necessary pedagogical skills (OECD, 2005). More specifically, ASPETE offers a one-year educational course for pedagogical skills' acquisition, while a four-year degree in pedagogical education is also available for those teachers wishing to specialize in the particular domain. Within this context, it is almost obvious that most vocational teachers in Greece have attended one of the two courses in ASPETE, together with general education courses they have attended in the other tertiary institutes mentioned above. Thus, at least from a theoretical point of view, vocational teachers do not need any more educational assistance in practicing their profession (ASPETE, 2012).

All teachers' preparation programs are designed under the authority and control of the Greek Institute of Educational Policy, with the aim to design, monitor, control, and evaluate training programs for professional teachers. They identify the level at which vocational and technical teachers are competent enough to teach others effectively and appropriately (Eurydice, 2002). According to OECD (2005), all teachers that are selected to teach in public schools need to

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attend a number of education courses, which last for 100 hours and involve three basic stages:

- Didactical methodologies, educational administration and organization, teaching practices, evaluation methods;
- Practical exercises - Model teaching;
- Evaluation of processes - Re-planning, Effectiveness.

The general belief towards technical and vocational training of teachers in Greece is that emphasis must be placed not only in their initial education and training, but also in their ongoing development, so as to constantly develop their professional skills, as they go on with their career. Within this context, the initial training mentioned above shall be embodied in the basic technical and vocational education of teachers in the form of a higher educational degree, which will encompass both the essential degree level of study and the acquisition of those skills necessary for teachers to reach a higher professional status (John, 2004). The rational behind this proposition is that in any case teaching is a profession. As such, if vocational and technical teachers are excluded from the basic higher education programs, their profession is undermined, while they may also be subject to training and knowledge inefficiencies (Schleicher, 2006).

Within the context outlined above, a crucial aspect to take into consideration is the importance of the relationship between higher and teachers' education. Except for the fact that teachers are essential for bringing higher education to students, the quality and competence of teachers determines to a large extent the quality of high education students receive (Buchberger et al., 2007). Apart from that, it is also important to note that the attractiveness of initial teachers' training is determined by the extent to which potential teachers have access to

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it. A third function to consider is that technical and vocational teachers' education is essential for teachers to keep up with changing trends and challenges in learning, as well as dealing with new tasks. Within this context, the role of educational institutions is to help potential teachers acquire the necessary expertise knowledge and experience to perform their profession (Moon, 2010).

3. GOALS AND OBJECTIVES

All the above considerations seem to exist in Greece as well, with relevant bodies, namely researchers, academic professionals, and the associated authorities of the state agreeing in that vocational and technical teachers must have those professional and teaching skills that will allow them to teach within a rapidly changing academic, social, and technological environment. In agreement with UNESCO and ILO's goals and objectives of technical teaching training, the respective educational programs in Greece have the following objectives (UNESCO & ILO, 2009):

- to provide general preparation and knowledge for teachers to be able to teach;
- to help them develop high-quality teaching skills in practice, except for theoretical ones;
- to produce teachers that may stand in society as professional academics within a national context;
- to produce professionals who, except for teaching, will also be capable of actively participating in academic research.

Given the above framework and the associated goals and objectives, a clear necessity comes for analyzing which roles and tasks teachers must be able to perform in order to support their profession. In order for these roles and tasks

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to be accomplished, teachers need to acquire the necessary skills, and this acquisition in turn needs to be made through an appropriate model. The next section outlines the two basic models on which technical teacher training in Greece is structured.

3.1 The concurrent versus the consecutive model

Both the concurrent and the consecutive model of training in Greece involve disciplines about general and professional education. General education refers to that type of education whereby potential teachers acquire knowledge associated with teaching subjects (Hmelo-Silver, 2004). Professional education refers to the case whereby teachers acquire the necessary teaching and professional skills for practicing their teaching profession. What makes these two training models different is that the concurrent model embodies professional education in the third level, and actually integrates it with the general one. In contrast, the consecutive model perceives professional training as a separate educational function, thereby implying that it should offered at a second phase and once general education has been completed (Vähäsantanen & Eteläpelto, 2009).

Next to the above, according to the concurrent model, in order for students to be able to become teachers, they need to successfully complete upper secondary education, and be admitted in a higher (university or college) level. In this level, students have the opportunity to receive training through a 4-year higher education course and acquire a degree that will give them the opportunity to teach. Training under a consecutive model takes place after the completion of tertiary education and takes the form of a postgraduate professional training program, lasting for one year (Hellenic Ministry of Education and Religious Affairs, 2010).

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Despite the fact that little evidence exists regarding which of the two models is more preferred, there are still some advantages and disadvantages to be taken into consideration. As such, the state considers the concurrent model as more expensive than the consecutive one; however, it acknowledges that potential teachers shall find it more economic to follow training through this model. Another perceived drawback of the concurrent model is that it actually asks from potential teachers to teach long before they are ready to do so. Of course, this could also be considered as an advantage, given that students get trained for a long time and have the opportunity to exercise practical teaching requirements from the very beginning of their training course (Tzortzi, 2013). As far as the consecutive model is concerned, its short duration is always under question, in terms of the effectiveness of its short training schemes. No matter what model is followed, in the end graduates from both models are awarded the so-called *qualified teacher status* (QTS), which is the official certificate teachers must have, in order to be permitted to teach.

3.2 Qualification routes and curricula: The case of ASPETE

The School of Pedagogical and Technological Education (ASPETE) provides a very useful case study to show how the two different models mentioned above lead to the acquisition of QTS. ASPETE at the moment is the sole educational institute that provides training to technical and vocational teachers that wish to develop a professional career in secondary education. A very important function of ASPETE is that it has employed both the concurrent and the consecutive model of training, while its training program has been designed based on modern and updated educational needs and trends. Although ASPETE was established as an educational institute substituting SELETE, an institute of professional training for technical and vocational teachers that operated for more than 40 years, it did not copy the training programs and the educational

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degree of SELETE; rather, it designed them from the very beginning when it was founded in 2002 (CEDEFOP, 2004). This change was mainly underlined by the changing trends in education both within a national and an international context (ASPETE, 2012). In order to accomplish this task, ASPETE's assigned committees conducted excessive market research, also using data from other training programs being implemented in Greece and data from the Institute of Technological Education (ITE). The aim of this excessive research was to identify the new tasks and roles vocational and technical teachers were subject to, as well as find new ways in which prospective teachers could acquire a QTS (Eurydice, 2007).

The technological curricula of ASPETE (in Electrical, Electronic, Mechanical and Civil Engineering) have followed the concurrent model of training. With respect to the description of the model, as this was held in the previous section, students attending the various curricula get a degree after completing their studies. The degree ends with the completion and submission of a dissertation. In order to be able to teach, students also need to attend teaching practice sessions, while they also need to complete six months of practical teaching exercise in an educational institute, usually as assistants of professional teachers in the vocational and technical fields. In order to gain admission to this training program potential, teachers need to successfully finish secondary education and pass the national examinations for admission to tertiary education.

The General Department of Education of ASPETE, following the consecutive model of training, offer additional pedagogical training programs that last for two semesters, the successful completion of which leads to being awarded the so-called "Certificate of pedagogical and teaching competence", which gives the graduates the authorization to teach in vocational and technical schools. In

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order to gain admission to these programs, prospective teachers need to meet certain criteria, namely an acceptable grade of their diplomas, certified knowledge of foreign languages and teaching experience, while a postgraduate degree is always considered as an important additional asset. Given that numerous prospective vocational and technical teachers with adequate skills apply for these programs, it is clear that gain authorization to practice teaching profession in this way is not an easy thing to accomplish (CEDEFOP, 2010).

3.3 Curricular components and objectives

The findings of the research held by ASPETE's committees revealed serious functions of training of technical and vocational teachers that needed to be taken into serious consideration. These functions were summarized in the need to redefine the content of academic subjects and transform them into discipline-oriented ones, promote the connection between effective teaching and learning, as well as the need to insist on the continuous professional development of technical and vocational teachers and the establishment of an educational culture and environment to support this development. With respect to the above findings, ASPETE's committees proposed a number of changes, the most important of which being the need for a holistic approach towards teachers' training. More specifically, the most important change proposed was the reduction of existing different courses, as well as the reduction of boundaries among different professional subjects (Kantonidou & Chatzarakis, 2005). As such, educational subjects in ASPETE are grouped into four broad categories (ASPETE, 2012):

- general core subjects: mathematics, physics, chemistry, introduction to computing and language for specific purposes;

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- humanities and management subjects: technical legislation, economics and management, educational technology and environmental awareness;
- pedagogical subjects: subjects of modern pedagogy, general and developmental psychology, educational psychology, counselling psychology and guidance, philosophy and sociology of education, educational management, computer applications in education;
- subjects concerning engineering science, which vary according to different departments and disciplines.

The courses that are involved in the above categories are meant to establish and develop two types of educational cultures, namely engineering science and engineering pedagogy.

In order to create an educational environment that supports both general and professional learning, the concurrent model of ASPETE's curricula has combined theoretical lectures with practical seminars, laboratory tutorials and workshops in which professionals from the external academic and industrial world also participate on a frequent basis, so that the practical nature of training is enhanced. Assessment schemes also contribute to this end. More specifically, instead of its traditional form as a course component, assessment has been transformed into an integral part of teaching and learning. In fact, in order to indicate how students and teachers change and develop over time, ASPETE has employed a number of different assessment types, such as project assignments, oral presentations, mid-term and final examinations. Through these different assessment schemes, ASPETE has the opportunity to identify how teachers and courses' effectiveness are undermined and how they could be improved in the future (Kantonidou & Chatzarakis, 2005).

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Except for the theoretical and educational part, vocational and technical teachers must also be in line with the external educational and industrial world. In other words, teachers shall take the form of “reflective practitioners”, as the term has been developed by Schon (1990). Therefore, ASPETE has established practical training experience courses of six months, during which students have the opportunity to be engaged in real-life teaching activities, which essentially helps them improve their communicational, innovative thinking, and technical skills. Except for such practical courses, students also have the opportunity to practice in industrial companies, which offer their facilities for this very important educational purpose.

As it has been made clear so far, ASPETE has established a training program for technical and vocational teachers that combines theoretical knowledge with the acquisition of those skills necessary for teachers to identify and understand their role in and contribution to their profession. What is important to note is that the program outlined in this section gives the opportunity to teachers to acquire additional degrees that offer great specialization in technical subjects, apart from the necessary and traditional educational degree that gives them the opportunity to teach in a professional context. As such, the program enhances the accomplishment of the main objective of technical teacher training, which is the need for technical and vocational teachers to be involved in a lifelong and continuous development process, an objective that is met just be attending one more year of studies. Within this context, teachers, both existing and prospective ones, only need to study for one more year to acquire the necessary professional skills to keep up with changing trends in the rapidly changing educational environment surrounding them.

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4. CONCLUSIONS AND RECOMMENDATIONS

Gardner (1984) noted that the value of some reports is seen in the critical discussion they generate, which, in turn, formulates action or change. In the following recommendations, several suggested changes are offered in an effort to encourage and facilitate continual improvement in the technical and vocational teacher education programs in Greece.

The data, as well as the lack thereof, have indicated that no specific system is currently available to assess teacher acquisition of knowledge and/or skills upon program completion. A monitoring system should be developed in order to assess the necessary exit skills acquired by teacher candidates to work with students in technical and vocational education. One way to accomplish this task might be to require specific skill application questions on final examinations m various technical education and vocational education courses. Conducting periodic group seminars during student teaching would be an invaluable opportunity to monitor skill development and application of learning.

Extending the previous recommendation, the data also support the need for a course monitoring system as well. More specifically, policy implementation should encourage more substantive involvement in course planning and skill development rather than in simply meeting the intent of the Greek law. More decisive and cooperative planning of course content is needed in order to place greater emphasis on the direct instruction of observable teaching skills. At the preservice level, care should be taken to make course content more relevant to the technical and vocational education teacher. Course syllabi need to be periodically reviewed and revised to make certain vital skills are being included and that current research is being integrated into appropriate courses. Finally, in light of the realities surrounding current teacher education reforms, like those suggested by the National Commission for Excellence in Teacher Education, it

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appears that cramming in "more" material in an already overloaded system will only facilitate infusion of mediocrity. Infusion approaches can be made effective when material for vocational education is taught simultaneously with other regular teaching methods. Certainly, proposals to offer alternative, five-year teacher education programs look promising, and would ease current content restrictions and limitations facing programs today.

The technical and vocational education programs are encouraged to use and/or restructure simulated activities involving true-to-life classroom scenarios in an effort to allow teachers to experiment with role-playing among peers and to develop critical thinking skills requiring application of knowledge. These individual situations can be expanded further for faculty review and for developing instructional guidelines in meeting the School Code mandate.

In order to reduce the polarization felt by technical and vocational educators alike, channels for more regular and direct communication are extremely important. This dialogue most certainly is needed between the developers and implementers at the preservice level. Specifically, the Departments of Technical Education, Vocational Education and Professional Studies need to establish regular intervals of communication whereby they can coordinate their efforts in direct ways. Such efforts should facilitate involvement and also help to minimize duplication of efforts. In addition, actively seeking involvement from professionals in the public school would serve to strengthen communicative bonds. This could be accomplished in a number of ways. For example, teachers could benefit from sharing the personal expertise of both technical and vocational in-service teachers. Perhaps one way to arrange this might be to invite practitioners and/or cooperating teachers to visit ongoing methods classes throughout the semester (and prior to student teaching assignments). Open class discussions could serve invaluably as a forum for

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addressing realistic problems and brainstorming practical solutions. Another way might suggest cooperative projects between vocational education and technical education methods courses. Classes could exchange professors for one or two periods or maybe even attend joint classes, utilizing a team-teaching approach. In this way, more practical classroom simulations involving students of technical and vocational education could take place, and more relevant activities could be developed and integrated into the course objectives (e.g., individualizing lesson plans, modifying equipment or consulting with colleagues). Perhaps this mutual venture would foster greater communication and coordination models, not just among practitioners in the field but also among preservice secondary technical education and vocational education teachers. Regardless of method, the need for more interaction, cooperation and dialogue has been established.

According to Dunn & Dunn (1979), teachers are thought "to teach the way they were taught" (or more accurately, "teach the way they learned"). If this notion is generally true, vocational teacher educators should take heed and periodically re-evaluate their methods of presentation. If vocational education faculty does not believe in the collaboration and integration of learning at the preservice level, chances are likely that their students will not develop these commitments when they enter teaching. If faculty members serve as models to prospective teachers, then realizing the attitudinal approach they make toward students of technical education might be the most valuable and important lesson ever to be taught and absorbed by their undergraduate students. If a "separate but equal" message is conveyed, perhaps these candidates will deliver the same message when they are planning for or instructing students of technical education. As one teacher respondent noted (Tzortzi, 2013): "Maybe somewhere on down the line, those of us who have had some special education experience or training

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will pass that on to someone else if I would teach a methods class someday." Also, preservice vocational education faculty members may indeed benefit from having some direct, practical and field-based interaction themselves regarding students in vocational education. In this way, they will have the opportunity to learn, understand, and apply the knowledge ultimately being taught to prospective teacher candidates.

Data generated from interviews (Tzortzi, 2013) seemed to present two types of teacher attitudes. In one instance, one respondent was wondering "How is he/she (the student) going to be able to hack it in my class?" Another view approached this question quite differently, inquiring, "What do you want me to be able to do with him/her?" There are varying attitudes prevalent among regular educators today, which show a difference in the way they perceive their roles with students. Future research in this field should attempt to examine this matter more closely, perhaps through ongoing in-service efforts.

Clearly, it seemed quite appropriate to recommend that more relevant and practical experiences are needed in vocational teacher education programs. Aside from the experiences previously cited, preservice students sought more substantive and applicable skills, rather than descriptive, awareness level information. Respondents also sought more hands-on experiences, and case studies. If joint ventures were not feasible, then vocational education majors would appear to benefit from enrolling in an overview special education course, designed for vocational education majors, specifically, in order to directly address problems encountered in the vocational classroom or lab. This approach may warrant careful consideration as an alternative of its own.

In order to maintain an ongoing formative summary of the impact of the state mandate upon preservice teacher education programs, efforts should be taken to conduct studies utilizing large sample of teachers' training programs. More

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experimental approaches could be developed and monitored, and more specific measures of impact could be established. Other secondary teacher education programs (e.g., mathematics, social studies, science) could be examined simultaneously to identify additional ways of meeting certification requirements and to determine the effectiveness of these alternatives. More in-depth interviews could be conducted with Colleges of Education and other teacher educators to collect more specific data regarding teacher training programs and the certification mandate. These efforts would ensure the collection of critical information concerning approaches to national certification mandates, and more generalized perceptions of performance abilities, confidence levels, and adequacy of preparation.

As per the statements above, considerable data may also be obtained by conducting longitudinal studies, using populations throughout the preservice teacher education programs. Follow-up studies involving these students and other graduates could determine "success rates" among those who have pursued teaching careers. Future studies could target awareness levels among incoming preservice vocational education candidates, and continue to monitor the development of ability levels as they approach student teaching, program completion and graduation. From these efforts, researchers and teacher educators would be able to assess future needs and implement appropriate changes.

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