

The Importance of Knowledge Management in Secondary Vocational Education Organizations in Greece

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Abstract

In recent years, knowledge management has increased in popularity as a management tool, as well as a new research field. Most organizations realize that "knowledge" is a strategic resource that can provide them with a sustainable competitive advantage and help them to achieve long-term organizational goals. Based on this, organizations attempt to use knowledge management to promote innovation, to improve organizational efficiency also to accelerate the creation and exchange of knowledge. The purpose of this paper is to present the importance of knowledge management in Greek vocational education. Essentially, it will study and try to highlight the way Vocational High Schools (VHC), which are being secondary vocational education organizations, to attempt to manage knowledge in an effective way, also the knowledge management practices that can be useful in such an environment. The conclusions highlight the important elements of knowledge management in technical vocational education organizations.

Keywords: Knowledge, knowledge management, vocational education

Introduction

It is obvious that knowledge management is an element of increasing importance for all administrations regarding the challenges created by the knowledge economy (Satar, 2012· Zygouris & Valkanos, 2019). It is recognized as a valuable intangible asset and is fundamental to decision-making, business planning and strategy-making, the effective implementation of which leads to the success of organizations (Dei & van der Walt, 2020· Sha'ari & Kassim, 2018) .

In the majority of studies, they present specific factors, such as strategies, leadership, culture and technologies for the successful implementation of knowledge management programs (Akram, 2016). The evaluation of such factors is considered a strategic tool for all public organizations, including educators, in terms of effectively guiding the implementation of a knowledge management program. However, several inherent obstacles to the development of knowledge management are identified, these seem to be related to limited collaboration, of various technological problems, but also to trust issues (Miter-Hernández, Mora-Soto, López-Portillo & Lara-Alvarez, 2015).

In education, knowledge management tools and practices are seen as the framework, which supports people in its organizations to develop appropriate practices for gathering information and sharing what they know, this leading to actions that improve both services and the final results (Petrides & Nodine, 2003). Also in order for educational organizations as social institutions to be able to achieve their goals, there is a great need for substantial and effective knowledge management at all levels (Aquino & Araujo, 2013). Based on the above, vocational education as a form of formal education can apply the concepts, tools and techniques of knowledge management to solve its problems. In this context, this specific work, based on the overview of international literature and articles, studies the importance of knowledge management in the institutions of secondary vocational education (the so-called Vocational High Schools - VHC). The concepts of knowledge and knowledge management in organizations in general but more specifically at certain educational organizations are discussed. The opportunities and challenges arising from knowledge management in them

are also discussed. The paper concludes with some recommendations that, in the opinion of the authors, can contribute to the strengthening of knowledge management in these institutions.

I. Knowledge and knowledge management in organizations

According to Alavi, Kayworth and Leidner (2005), knowledge is any set of information possessed by humans and acquired either through experience or appropriate education (Awad & Ghaziri, 2013) or through perception, discovery, and learning (Akran, 2015). It is information, which is ready and can be used in the decision-making process and in subsequent actions (Chang & Lin, 2015).

Knowledge refers both to the theoretical knowledge that is necessary to understand a phenomenon, an object, a situation, an organization or a process, as well as the environmental knowledge, which is related to the context and therefore includes knowledge concerning systems, processes, infrastructure, strategies, organizational structure and culture. It also refers to procedural knowledge which describes how an action can be carried out (procedures, methods, etc.) (Jafari, Akhavan & Mortezaei, 2009).

The value of knowledge for modern organizations is undeniable. However, without proper management, it can be outgrown and useless (Karimi & Javanmard, 2014). The need therefore arises for organizations to plan and integrate a series of procedures in their daily life in order to be able to manage their knowledge (Muftahu & Jamil, 2021).

Knowledge management refers to the exploitation and development of the organization's cognitive resources, or otherwise its intellectual capital, with the main purpose of achieving its goals in the long term (Demir, Budur, Omer & Heshmati, 2021). It includes all the processes and/or activities of the organization related to the recognition, capture, transformation and communication of knowledge (Galgotia & Lakshmi, 2022). It consists of the ability to acquire knowledge through its own experiences and sources and to apply it judiciously for the fulfillment of its mission, while promoting an organizational culture that encourages knowledge development (Sirajuddin, Ahmad Zaki & Rose Alinda, 2005). Information and communication technologies can be an important facilitator, enabling these processes/activities (Muftahu & Jamil, 2021).

It is essentially a process that involves the organization's people, processes and technology, captures knowledge and delivers it to the right people at the right time (Basu & Sengupta, 2007; Nandev Dhamdhere, 2015).

The knowledge to be managed includes both explicit and documented knowledge which can be recorded, codified in a systematic, formal and structured form that is transmitted through symbols (writing, drawing, etc.) or embodied in a tangible form (machines, tools, etc.) and means, as well as the tacit, i.e. subjective knowledge of the organization that is embedded in the organizational culture and collective understanding which is achieved through experience, reflection or internalization (Mohajan, 2016). It is clear that managing the tacit knowledge that resides in the minds of the organization's human resources, as it is difficult to reproduce or share with others, is the biggest challenge for any organization (Cheng, 2015).

Knowledge "assets" are dynamic in nature, interacting and interdependent in order to create value (Moustaghfir, 2008). In other words, organizations must find ways to mobilize their knowledge in order to create value from it through its reuse (Rismita & Bunyamin, 2022).

II. Schools as learning organizations

Knowledge management requires systems that promote and facilitate knowledge sharing and organizational learning. Organizations that succeed in this area recognize knowledge as an asset and develop organizational rules that support both the creation and sharing of knowledge, maximizing its value (Galgotia & Lakshmi, 2022). By sharing knowledge all the experiences and expertise of their people can be preserved for future learning and the creation of new knowledge with the help of information and communication technology. In other words, knowledge sharing is as well as the mobilization, transfer and communication of knowledge and constitutes the activity through which knowledge is exchanged between individuals or members of a family, community or organization etc. (Nandev Dhamdhere, 2015; Ziviani, Amarante, França, Isnard & de Paula Ferreira, 2019).

Educational organizations are built and operate on their knowledge base, which is the core of their existence and operation (Bottrell & Manathunga, 2019). Knowledge management can improve their ability to acquire

and share information and knowledge, applying them to problem solving and promote their research and continuous development (Galgotia & Lakshmi, 2022). Knowledge management also has a significant impact on organizational sustainability (Demir, Budur, Omer & Heshmati, 2021).

In schools, knowledge management can facilitate the acquisition, sharing and application of teachers' knowledge so that they better manage and apply the tangible and intangible elements of their schools, especially their professional knowledge, experiences and skills (Zhao, 2010). By implementing systematic steps in the management of intellectual assets or knowledge, various information from individuals and school organizations themselves can lead to the creation of a competitive advantage and the maximization of added value and innovation, the acquisition of knowledge, the development and use this knowledge (Orenga-Roglá & Chalmeta, 2019).

Through these steps of knowledge management, it is possible for all students to "absorb" knowledge and insight about educational activities more easily, so that schools are able to sustain and carry out the process, which includes people, process and technology. However, the absorption of knowledge gained from schools is only 10%, as all the theories offered and studied are not included in the category of knowledge. On the contrary, most of them belong to the category of information (Gaspersz, 2019). This offering of knowledge and information from teachers teaching in educational institutions is adapted to the context of teaching materials accompanied by the application of theories suitable for use in education.

Additionally, in school settings learning has become more systematic and purposeful. Its planning, organization and execution are carried out in accordance with the framework of objectives that characterizes the pedagogical project. Choosing which techniques to use is not a simple process, as educators must seek and identify the learning channels of all individuals within the school organization. Educators must also consider the possibilities and limitations. A concern therefore arises for quality education, the expectations of which relate to how students are educated by competent and ethical professionals who are interested in providing good quality training to those under his/her responsibility (Tenorio-Junior, Periotto, Bernardelli & Urpia, 2021).

III. Vocational education in the greek reality

In the Greek context, as in many European countries, technical vocational education is mostly offered in the school structures of Vocational High Schools (VHS), day and night. Its goals, among others, are *"the provision of high-level general education"* and *"...integrated professional knowledge and skills for access to the labor market, strengthening the possibility of monitoring work developments, as well as the possibility of recruiting and assimilating new technological and professional knowledge, skills and abilities in framework of Lifelong Learning also the possibility of professional advancement through studies at a higher educational level"* (article 6 L.4186/2013). The students who graduate from VHS can join the labor market, continue their studies in relevant fields of higher education, continue their studies in IEK, from when they graduate they can obtain a level 5 qualification of the National Qualifications Framework and enter the Post-secondary Year - Apprenticeship Class obtaining a Specialty Degree 5, after completing certification procedures of their qualifications as provided by the National Organization for the Certification of Qualifications and Professional Guidance (Nektarios, Karkalagos, Plessa-Papadaki, Theodoridou & Hinopoulou, 2022).

It seems therefore that the education in VHS is different from "general" education, which primarily aims to prepare students for their entry into higher education. This, as in many other countries, has as a consequence a qualitative and not so substantial distinction between the two educational systems: in VHS usually students are pushed, who are not considered "good enough" to proceed to higher education (Georgakopoulos, 2022).

In Greece today, there are 408 VHS attended by 108.244 students. The children there receive a general education, but they are also trained in 35 different specialties, from "Technician of Information Technology" and "Silversmith" to "Captain of the Merchant Navy" and "Assistant Nurse" (Charalambopoulou, 2022). The cost of the education provided in these school units is generally higher than that of general education. The classes usually have fewer students, require more laboratories as well as the corresponding laboratory equipment for their implementation, but also specialized teachers (Georgakopoulos, 2022).

The recruitment of the educational staff of VHS is done with the same criteria and follows the same procedures as those of general education, without taking into account the different components of learning. This is understandable when it comes to the recruitment of teachers for general education courses in VHS. However, in specialty courses, especially in laboratory ones, teachers should have not only pedagogical knowledge but also relevant professional experience, so that they can pass on the skills and knowledge required for each profession and for the production process (Andersson & Köpsén, 2018).

"Workshops" are a teaching and learning activity for the acquisition of knowledge and skills in secondary vocational education units. In this case, students observe or manipulate learning objects individually or in groups, by reproducing work practices that have been demonstrated or simulated by educational experts in their field. Knowledge visualization can improve students' ability to understand the knowledge being conveyed and this is achieved through this form of education.

Given that knowledge and skills, due to the rapid developments in technology and the development of new production methods, are depreciated in a short period of time, a learning process, which is based exclusively on teachers (permanent and/or substitutes), who do not have an equivalent professional experience but only teach and who retire upon reaching the age of 67, cannot be a parameter of modern and competitive professional education. According to OECD estimates, within the next decade, 30% of teachers need to be replaced, as Nektarios et al. point out (2022), the teaching staff of vocational education is old, which is due to the fact that no recruitment has been carried out for a long time. More often, over time, subject teachers' knowledge may be considered outdated. Updating their knowledge and skills is therefore a pillar for the provision of quality professional education.

The performance of apprentices after vocational training is usually attributed to the effectiveness of the training. This implies the assumption that the development of the professional knowledge and competence of the trainees is significantly influenced by the professional education that was provided to them (Deutscher & Winther, 2018).

IV. Factors affecting the implementation of knowledge management

It is commonly accepted that teachers are the main resource of school units and the implementation of knowledge management, as they are a source of progress for schools (Torres, Ferraz & Santos-Rodrigues, 2018). Their expertise is typically incorporated into formal curricula, study guides, and required learning outcomes. In vocational education, the focus is broader. In addition to explicit management processes, there are numerous other, invisible, coordinating activities that support and create structures that favor the effective utilization of knowledge (Sysnummi & Laihonen, 2014).

Furthermore, as knowledge management and information technology cannot exist separately, the nature of work in the school workplace is becoming increasingly digitally based and multi-faceted in nature, and consequently, the skills required are becoming broader and more complex, with the synthesis of both technical and non-technical skills (Kim & Park, 2009).

The effective integration of information and communication technology (ICT) facilitates the extension and enhancement of vocational education by enhancing networking and knowledge-sharing opportunities while significantly reducing the mechanical delivery of educational material, thereby offering students personalized learning even after school hours (Wahab & Ali, 2022).

Despite numerous contributions, available and functional infrastructures, sophistication in technology continuous provision, and upgrading by schools, the full integration of ICT in the teaching-learning process is still a work in progress. The slow adoption of ICT by teachers reflects their effort to consider more systematically how best to integrate new technologies into their old teaching practices (Hayes, 2007). In fact, as Paryono and Quito (2010) point out, progress toward the full integration of ICT in education, especially in vocational education, requires additional commitment from teachers.

Their training and retraining are significant challenges for the integration of technology-based learning, as for most teachers ICT is refreshing in its possibilities and reduces the insecurity created by the speed of change. At this point, it is worth mentioning that although ICT is an important element of technical vocational education programs, face-to-face interaction between students and teachers is equally important (Saud, Shu'aibu, Yahaya & Yasin, 2011).

But the biggest challenge of knowledge management in schools, as Daraei and Navehebrahim (2021) point out, is not information technology, but leadership awareness. Knowledge management requires conscious leadership and participative management. Managers in vocational education have a range of roles to play, from developing and supporting teachers to engaging other stakeholders, but also improving the quality of vocational education provided, which can be achieved through technological and pedagogical innovation. De Tienne, Dyer, Hoopes, and Harris (2004), in their study state that the way organizations approach and deal with knowledge management processes and practices is significantly influenced by management. If knowledge does not permeate all levels of the organization, starting at the top, it is unlikely that the knowledge management program implemented will be effective.

Principals are also responsible for supporting teachers in their teaching responsibilities and managing pedagogical innovations but must ensure that the diverse student body attending their schools has access to high-quality teaching-learning that develops the skills needed. Their effectiveness has a significant impact on student performance and teachers' working conditions (Ruiz-Valenzuela, Terrier & Van Effenterre, 2017). Principals need to be strategic being management focused and have a good understanding of the professional education landscape considering factors that could affect it. They must also encourage more innovative approaches to pedagogical, organizational, and institutional issues, while keeping abreast of new emerging technology that could improve the effectiveness of vocational education provision (Daraei & Navehebrahim, 2021).

In addition, the existence of a creative culture is a key factor for knowledge management because it plays an important role in overcoming human barriers related to the creation, transfer, and exchange of knowledge (De Tienne et al., 2004). If a school wishes to implement knowledge management it must first change the perceptions and culture attitudes of its people. Communication and interaction between its people are required in order to realize the benefits of knowledge management. A culture of willingness to share knowledge and trust each other is very important. It is also necessary for schools to pay attention to knowledge management as a main map for a better understanding of solutions related to the improvement of knowledge activities (Daraei & Navehebrahim, 2021)

The implementation of knowledge management in a school unit can have results both at the individual and at the organizational level. Knowledge management can help each teacher individually in the learning process (speed and efficiency) and learn from others. It can also enable them to gain experience and knowledge to improve their practice helping them to be rewarded based on their participation in knowledge activities. At the organizational level, teamwork and synergy are encouraged as innovation is created to solve educational problems. Participation in knowledge activities leads to dynamic decision-making which can cause the optimal use of time and other organizational resources (Daraei & Navehebrahim, 2021). Related research also states that knowledge management can be applied to evaluate changes in learning and test system effectiveness and teachers' and school effectiveness (Deutscher & Winther, 2018).

Conclusions

Knowledge management is a relatively new tool for creating and transferring knowledge. Vocational education organizations have significant opportunities to implement knowledge management practices to support every part of their mission.

Vocational education teachers need a combination of pedagogical skills, professional knowledge, and experience and need to keep these up to date to reflect changing skills needs in the labor market leading to evolving teaching and learning environments (OECD, 2021).

Teachers of this type of education can use online teaching tools to develop knowledge management processes (Biasutti & EL-Deghaidy, 2012) and meet the needs of their students. A strong commitment can help them develop knowledge management systems also sustainable innovation within and between schools (Hogan & Gopinathan, 2008).

To put knowledge management into practice, it is important to first understand how teachers think. Most educators recognize that knowledge management can help them improve their practice, but it requires support from a variety of sources, including people, organizational learning culture, information technology, and school administration (Chu, Wang & Yuen, 2011). Also, the establishment of a mechanism for

evaluating the performance of the applications and the development of knowledge is considered equally important for the improvement of their professional development.

The topic of this paper is undoubtedly an interesting and important topic, as knowledge management would enhance the teaching and learning processes in vocational education. However, more work is needed. There is a need to study the problems of vocational education based on real case studies, to explore knowledge management tools and techniques in more detail, and to evaluate the results from these studies.

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