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Systemic Methodology for Developing Teachers Extracurricular Training

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Abstract

The present study aimed to develop a standardized system for detecting the training needs of teachers of the Western Attica Secondary Education Directorate (Greece), concerning the implementation of school extracurricular programmes. Their thematic areas include Health, Career, Environmental and Cultural Affairs Education. The school extracurricular programmes are annual, while the participation for both students and teachers is voluntary. They are conducted beyond the regular schedule of school activities, but they are considered extremely important in the overall educational affairs, because they implement the notion of "schools opened to society" and they are flexible enough to deal with contemporary issues that interest students, unlike the rigid standard curricula. Since the participating teachers are not always knowledgeable in the thematic areas of the programmes, it was deemed necessary by their educational leadership to conduct targeted trainings that meet their needs, as determined by them. Consequently, a detection system was developed, according to the systemic methodology, to ensure a holistic approach compatible to the contemporary on-going education trends.

Keywords

Systemic Methodology, Extracurricular Programmes, Teachers Training

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1. Introduction

The ongoing developments in the field of the sciences of education, such as the reforms in curricula, the introduction of ICT at school and the differentiation of the modern student needs, on one hand, but also the evolution speed of social policies and cultural structures, on the other, have modified the educational reality as a whole [1]. To help teachers deal with their difficult and demanding task successfully, continuous further education assistance is required, which will be organized and conducted according to their ascertained training needs.

Continuous training provides knowledge and skills to teachers for coping with the new functions and requirements of a rapidly evolving society [2]. To enable teachers to meet the new requirements and to be effective too, training and support is necessary from entering the profession until the end of their career. This training is a long and continuous process, linked to personal and professional development of teachers and should accompany them throughout the course of their career in education [3]. Thus, we face a reality: the necessity for the detection of training needs of teachers, hence the need for a systematic study of their educational preferences. This study will help in developing training strategies useful for the achievement of educational objectives, implemented exemplary in the herein case-study, through the implementation of extracurricular programmes for the Greek secondary education schools.

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2. Extracurricular Programmes

The *school extracurricular programmes* (SEP) are annual educational projects that are conducted for two hours per week after the normal working-hours of schools. The participation of students and teachers is voluntary. A group of students is interested in studying a topic, while a teacher act as a coordinator, along with one to four assistant teachers depending on the size of the group. The offered topics are classified in five thematic categories: Health Education (including the participation of the local Youth Counseling Station), Career Education, Environmental Education, Cultural Affairs Education and e-Twinning/Erasmus+ programmes. All but the last ones are regularly supervised by the respective Supervisor, who is a teacher that is appointed directly to the local educational directorate and usually has attended post-graduate studies in the respective thematic category.

Health Education, as defined by the relevant documents of the World Health Organization, aims to develop skills and critical thinking by adopting healthy attitudes and behaviors, both to improve the mental and physical health and also to upgrade the social and natural environment. Career Education is a process, which is designed to help students realize their talents and develop their skills, so that they can manage the aspects of their personal and professional development themselves. Environmental Education is an ongoing process, through which individuals and social groups should understand their environment and acquire the knowledge, values, skills, experience and also the will that allows them to act both individually and collectively to solve present and future environmental problems (UNESCO). Cultural Affairs Education is a creative process that aims to promote culture and the cultivation of aesthetics through research, study and artistic creativity.

The role of SEP Supervisors is crucial for the functioning of SEPs, because the participating teachers are not necessarily knowledgeable in the thematic categories. Hence, the SEP Supervisors provide overall support by suggesting topics and activities, organizing of the work-load, educational material and seminar training to the participating teachers and students.

3. Purpose of Study

The educational leadership (Director) and the SEP Supervisors of the Western Attica Secondary Education Directorate (WASED) believe in the significant pedagogic value of SEP. To ensure the quality of SEP, additional training is required for the teachers that voluntarily participate as coordinators in this educational activity. Identifying and assessing the relevant training needs for teachers is conducted annually, including: field survey forms, questionnaires and communication in various ways. It is imperative to take into account the different needs of gender and the needs of vulnerable social groups during the designing and implementation of SEP. Thus, SEP Supervisors provide motivation to improve and empower teachers with incentives to support their work. The motivation of teachers is directly related to the proper functioning and performance of schools and to achieving their goals. Hence, a need arises for the primary and secondary education authorities for a rational system of creating incentives for the teachers, to actively express their interest for continuous improvement and development.

Consequently, this study focuses on the designing of a standardized detection system for recording the training needs of teachers, using ICT to facilitate the teachers' participation and the processing of the questionnaires. This system was implemented and tested in the school region of WASED. The development process was designed according to systemic methodology, in order to ensure a holistic approach (see section 4. Systemic Methodology).

4. Related Works

Teachers' training is one of the 16 quality indicators for school education (EC, 2000 in [4]). Because of this significance, it concerns all the state agencies that exercise educational policy [5] [6], as the Pedagogical Institute of Greece [7], the Universities, the executives of education and other educational institutions [8] [9]. For effective planning and implementation of training programmes, the detection process of training needs is originally required. This term describes a "*systematic set of procedures, undertaken with the goal of prioritizing and making decisions for an organization's upgrading programme, which may involve organizational improvements, organizational restructuring, reallocation of resources, or simply the improvement of the efficiency of the organization and problem solving*" [10]. According to the above definition, the detection of needs is part of the general design of the educational organizations or the employment institutions, which has existed, and defines or redefines the training needs of the teaching staff. Namely, the overall objective of detecting the training needs is to serve in the most effective way the priorities being set at the beginning of each school year. Another more specific objective is to identify these skills and knowledge that can be improved or acquired through training (Gillet, 1973 in [10]). According to other definitions, it is described as the process of determining the distance between "what is it and what should it be" [11] to improve the quality of offered services.

During the investigation process of the training needs of teachers, it is required to record "*the preferences and opinions of teachers*" [12]. Anastasiadis [13] stresses the need for the active involvement of teachers in the planning process of their training programme, before the start of training. He exploited their experience, which is a prerequisite for effective planning (National Foundation for the Improvement of Education, 1996 in [13]). The training methods and techniques selected and the tools utilized depend on the training needs [14]. May & Fisher [15] propose a modern and effective needs analysis model, which can be applied to detect the training needs of teachers who work in the public schools. According to them, the skill proficiency detection is associated with the current needs and prioritizes the detection of existing gaps in skills and knowledge, in relation to their training. That key-issue is the specific problems, affecting the smooth functioning of the agency to be treated by training and the needs to be covered by it. Additional emphasis is put on the needs arising from organizational changes in the organization and in adapting to a new operating mode, a change of policy or the organization's philosophy. May & Fisher [15] take into account the needs arising from the gap between the skills of the staff and work efficiency. In conclusion, they focus on the objectives of education and skills desired level that the trainees have, to determine the difference between the actual and the ideal level of skills.

In Greek bibliography there is a large number of researches recorded for the detection of training needs in primary and secondary education, respectively [12] [16]. They resulted in conclusions about the process of teachers' training, by defining how to assess their training, their trainers, the desired topics of training, the aim of training, the type of training programme and the factors that facilitated their participation in training seminars. The conclusions also refer to the duration, the frequency, the pattern and the themes of education, being complemented by relevant proposals. The need for training teachers is imperative as an essential element of their professional development [17] [18] [19] [20], once characterized as professional right (Belbenoit, 1979 in [12]) to improve their professional practice, and therefore their educational task [21]. The more efficient and better planning of training is necessary for satisfying the detected needs and desires of teachers. In this respect, the application of systemic methodology is innovative for developing a relevant detection system.

5. Systemic Methodology

Systemic Methodology mainly concerns models and tools for studying complex systems, including the social ones [22]. The latter are adaptive systems that resist quantitative modelling [23], while they can also change their behaviour through the process of *feedback* [24]. These systems include the human learning processes [22]. The study of social systems is influenced by the works of Parsons [25] and Luhmann [26]. The relevant methodology provides a variety of conceptual tools, such as the *cognitive maps* [27] that depict a conceptual representation of a social environment as a model. Such a general model is the Organizational Method for Analyzing Systems (OMAS), presented below.

The systemic model of OMAS [28] is an evolution of similar earlier techniques (SADT, see: [29]; IDEFx, see: [30]), aiming at increasing the communicational abilities of the previous models, thus becoming compatible to similar models that describe the human communication process [31] [32]. This communicational enhancement is realized by OMAS in a 'natural' linguistic manner, by expressing the aspects of a system through the *journalist's questions* [33]:

- *Which* (denoting *Input/Resources*);
- *What* (denoting *Output/Results*);
- *Where* (denoting natural/virtual *spatial* aspects);
- *When* (denoting relative/absolute *temporal* aspects);
- *How* (denoting *Conditions*);
- *Why* (denoting *Cause/Goals*) and
- *Who* (denoting *Monitoring*).

It is also fully compatible to the *General Systems Model* (GSM, see: [34]) that is dictated by the operational looping quadruplet:

input > *process* > *output* > *feedback*.

OMAS-III is the last version [35] [36], being successfully used in a variety of applications, including: curricula designing for career guidance projects [37] and language teaching [38].

In the present study, OMAS-III has been used to form a check-list of aspects that should be taken into account for developing the detection system of teachers' training. These aspects are described next, along with the resulting guidelines:

- The *Feedback* aspect is traditionally presented last. Yet, teachers training had been conducted in the past for SEP, without an established standardized process that could detect teachers' needs and impressions for their training. The development of this detection system actually realizes such a necessary process.
- *Input*: the teachers, as the subjects of training, along with their features (e.g., gender, age, expertise, experience, etc.).

- *Output* (*What*): the preferred topics of training, according to the teachers' opinion.
- *Place*/*Time* (*Where*/*When*): the place and time aspects of training (preferred dates, week-days, hours, duration and frequency of training) that interfere and affect the normal functions of their schools and their after-work daily activities.
- *Conditions* (*How*): the functionality features of the training programme.
- *Cause* (*Why*): the reasons of attending a training programme.
- *Monitor* (*Who*): people who supervise the operation of the system. These are the Director and the SEP Supervisors of WASED.

The aspects/guidelines were initially utilized for the designing of the questionnaires that would detect the training needs of our teachers. At a later stage, OMAS-III will be also used for designing questionnaires that will record the opinion of teachers about the usefulness and the results of their training.

6. Application of Guidelines

This survey was conducted between October and November 2015 on a sample of 73 teachers working in every type of secondary schools of WASED (Daily Gymnasium, Daily General Lyceum, Evening High School, Vocational Lyceum, Laboratory Centre or special education schools). Teachers were selected by simple random sampling from those who had implemented extracurricular programmes as coordinators in the past. Considering that there are about 150-160 programmes implemented every year, this sample is approximately 50% of the usual coordinators. They were informed by the educational authorities for the purpose and process of investigation and the confidentiality of the process. Then, they anonymously answered an on-line structured questionnaire (*Input*), prepared for this purpose, aiming at ensuring the empirical validity of the procedure, since the attitudes of teachers were recorded as measurable characteristics [39]. At the same time, the existence of a small number of open-ended questions assisted the collection of qualitative research data in order to derive results that have the greatest possible validity and reliability. The questionnaire consisted of 12 closed questions (see Appendix), aiming at facilitating data collection in a short time [40]. The original version of this questionnaire had been validated by the Greek national organization of teachers training [2] and it was adapted to the present conditions through the guidelines of the proposed herein systemic methodology (OMAS-III).

In the introductory note preceding the questionnaire, necessary information were given about the anonymous nature of the survey, its purpose and the data collection process. In details, the questionnaire included closed multiple choice type questions, which covered the following aspects:

- personal data about their gender, age, years of civil service, marital status, expertise, knowledge of ICT and level of education (*Input*);
- topics that would potentially attend (*What*);
- place, preferred days and hours of training, duration and frequency of the training programme (*Where* / *When*);
- assessment of the characteristics of the training programmes (*How*);
- reasons for attending a training programme (*Why*).

For the analysis of the results (*What*), the statistical package for social sciences SPSS version 17 was used. At the present stage, the more important outcome of this research was the establishment and testing of the survey-designing and data-gathering processes. The analysis of the actual results is important for planning the training of teachers during the next school year but, by being localized, it is probably of minimal value to other educational districts or context. Thus, the gathered data are currently under consideration. Merely for informative purposes, they are briefly summarized as follows (% figures are rounded):

(i) The majority of teachers were women (67%), their average age was 45 y.o. with an average of 15 years of civil service and most of them married (72%). The larger group of expertise were philologists of Greek language and literature (20.5%), all of them having acceptable knowledge of ICT, while 34% of them were awarded a postgraduate degree (masters, doctorate).

(ii) The 19 most preferred among the 28 topics proposed for additional seminar training were the following:

- Conflict management in schools.
- Diversity management in schools.
- ICT in school activities;
- Human Rights;
- Internet;
- Photography;
- Decision making – Vocational/Career Education;
- Movies/Cinema;
- Self-awareness – Vocational/Career Education;
- Mediation and remedial justice groups;
- Intersexual Relationships - Gender Education;

- Racism;
- Human Rights;
- Literature;
- Theatre;
- History-Mythology;
- Folklore studies;
- Aesthetic Education and
- Drugs – Smoking – Alcohol (coping with addiction issues).

These topics cover indeed a wide range of the extracurricular programmes activities.

(iii) The place of conducting the seminar doesn't seem important. The vast majority of teachers preferred the training seminar to take place in one or two days (86% in overall: 31% in one day, 22% in two consecutive days and 33% in two non-consecutive days). The maximum preferred duration of training hours per day is two hours (36%) or three hours (37.5%). Finally, with respect to the frequency of the training programme, teachers mainly opted for periodically (56%) or at the beginning of the school year (25%).

(iv) Teachers mostly consider as important characteristics of the provided training: the content (93%) and the linking of theory to educational practice (96%). Other important characteristics are the clear training objectives (93%) and the scientific knowledge expertise of their trainers (94.5%). Conversely, features such as place/time and organizational integrity are valued as minimally or moderately important.

(v) Particularly important are the results related to the reasons why teachers choose to attend a training program. In particular, improving the quality of educational work and the acquisition of new knowledge and skills were valued as very important (92% and 93% respectively). Instead, characteristics like "having a good time" and the opportunity to change their daily routine were regarded as moderately, minimally or non significant to the majority of teachers (82%). It is considered as a very important feature for the 60% of the participating teachers to exchange views with their colleagues. Only 42.5% and 44% respectively think that esteem and usefulness for professional development are important features.

7. Discussion & Conclusions

Exploring the training needs of teachers, before starting a training program, is a very important and necessary process for its effectiveness [41]. Each training program is likely to be successful when the design of investigating the needs of learners determines the characteristics of the target population and plans the content of training [42].

Through the preliminary analysis of the research results, the characteristics of the target group are being studied, their preferences are ascertained and the needs and opinions of teachers, regarding their training for the implementation of SEP, will be taken into account for the configuration of targeted trainings and an effective support of them. Considering that training programmes were conducted in the past without a recorded peer assessment of their efficiency, questions No 3, 4, 6, 7, 8, 9 and 11 of the questionnaire (see Appendix) are also an indirect evaluation of the respective previous training practices by the participating coordinators. The information collected substantiates the necessity for teachers' training, to improve their educational work and acquire new knowledge and skills, as long as the content is interesting and a link between theory and educational practice does exist.

The direct target group of this survey was the SEP coordinators, being teachers that voluntary participate in SEP. Yet, the main concern of SEP Supervisors and WASED leadership is the indirect target group of beneficiaries: the students of the educational district. Every year, about 3000 students voluntarily participate in 150-160 SEP, being approximately 30% of the total school population of the district (five municipalities). Thus, the establishment of a standard survey methodology, using ICT, is regarded as extremely important by the local educational authorities. In this respect, the usage of systemic methodology is becoming a valuable tool that can be experimentally extended in other educational activities. Such an activity is the on-going training of teachers in their fields of expertise, which is though beyond the jurisdiction of the local educational authorities in the Greek educational system, thus remaining just a proposal for future consideration.

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Appendix

The questionnaire for recording the training needs of teachers in implementing extracurricular programmes.

1. How many extracurricular programmes have you implemented, either alone or in collaboration with another

colleague/s, in the last five years?

2. Which of the following topics would you choose to attend?
3. What days of training do you prefer?
4. What time do you prefer to start the training that you will attend?
5. If you want the training to take place on Saturday, what hours would you prefer?
6. How many hours of training in a day do you prefer?
7. About the total number of days of a training program, what would you choose: (a) one day; (b) two consecutive days; (c) two non-consecutive days; (d) three days; (e) else.
8. In which area do you prefer the training that you will attend to take place?
9. From your experience in training programs, evaluate how important do you consider each of the following training features: (a) content; (b) relation of theory to educational practice; (c) clarity of objectives; (d) scientific competence of trainers; (e) organizational excellence; (f) suitability of training place/location; (g) suitability of training time.
10. Why do you think you would attend a training program?
11. Regarding the preferred periodicity of a training program: (a) at the beginning of the school year; (b) whenever required; (c) frequently; (d) at the end of the school year; (e) else.
12. Personal data: (a) gender; (b) years of public service in education; (c) age; (d) marital status; (e) teaching expertise; (f) studies/degrees; (g) ICT skills.

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