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Research Article

REQUIREMENTS OF SCHOOL ENVIRONMENTAL PROJECTS IMPLEMENTATION: WEAK POINTS OF INITIAL DESIGN

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ABSTRACT

The research aimed to highlight the requirements of school environmental projects implementation and focus on the weak points of initial design. The sub queries of the research question are about the target population, the required infrastructure (premises, equipment), the human resources, identification of sources of knowledge, the schedule of implementation phases and the budget. The research method was case study and content analysis of the archival material of School Projects of Environmental Education (SPEEs) in Gymnasiums of Heraklion prefecture, Crete, Greece by the use of criteria based on the principles of Environmental Education and Education for the Sustainable Development guided by UNESCO and European Commission.

In all studied SPEEs identified, in general, the required conditions for the implementation, not detailed recorded in Application Forms, but it is obvious from the Final Reports that it happens in the planning phase and in the process of project implementation, depending on the arising needs.

The particular detailed and demanding Application Form of the project allows better analysis of project content, of the target group's expectations, evaluation and feedback methods of the educational process. The existing needs to be improved and enhanced further.

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INTRODUCTION

Younger generations are the custodians of the future, as well as the need for better quality and access to Education, beyond the primary level that's why we ought to promote Sustainable Development (SD) awareness among youth, by promoting programs for formal and non-formal Education, in accordance with the goals of the United Nations Decade of Education for Sustainable Development (Rio+20, 2012; UN, 2002).

The projects of Education for the Sustainable Development (ESD) require overall understanding of the studied subject, the interdependence of biotic and abiotic factors on natural ecosystems, local communities and broader interactions between ecological and social structures, mechanisms and their relations, the scientific and technologic impact to life, its functions and evolution. All cultures and civilizations can contribute to SD in order to conserve the natural and cultural diversity (Rio+20, 2012).

The North American Association for Environmental Education (NAAEE) recently released a new 'meta-framework' that can be used to assess environmental literacy in different places and with different populations and intended as a guide for

developers of large-scale national and international assessments of environmental literacy who wish to answer the question to what degree do targeted populations have the knowledge, skills, dispositions, and behaviors to competently make decisions and act on local, regional, national, and global environmental issues (Paden, 2012).

Significant effect on the implementation of EE in Greek schools offered Aegean University with expertise produced and promoted in practice with the support of SPEEs in the period 2003-2006. The school year 2005-2006, which is referred to this research is the last year of funding SPEEs by Aegean University, so was appropriate for at least direct, evidence of influence.

According to Circular 119 236 / C7 / 24/9/2010 of the Greek Ministry of Education, Heads of EE of Primary and Secondary Education also, School Activities, have supporting, guiding and training role in the implementation of SPEEs. They, also, organize training programs for teachers who materialize SPEEs in issues of literature, methodology and dissemination of information and knowledge related to EE. Teachers who apply SPEEs need feedback from their works also similar works in the same or else schools. Distributed questionnaires offer

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evaluation and assessment of methodologies, materials and processes, data for the organization of the next one, notifications and proposals for the improvement of the offered EE in schools (Goufas&Vassiliou, 2011). While contemporary business and social practices engage people in collaborative efforts to solve complex problems and create and share new ideas, traditional instructional and assessment practices require students and teachers to work individually as they recall facts or perform simple procedures in response to pre-formulated problems within the narrow boundaries of school subjects (Griffin et al, 2012). Because pedagogical science has objects the educational context and the relationship between form and knowledge content, has to take also into consideration the social practices that permeate the above link and proportionate theoretical-practical creation of education about issues of ESD (Nikoloudis, 2013).

SPEEs materialized, voluntary, beyond the school curriculum and timetable in Greek Schools of Secondary Education, last 5-8 months with at least 2 hours teaching inside or outside the school. Teachers offer their compulsory and voluntary educational work in a context of relative autonomy, as their choices result from the arrangements that make in front of contradictions and dilemmas they face daily. Despite their differences, or rather with all of their differences, they form a social category of workers with specific contribution to the reproductive function of Education (Mavrogiorgos, 2005). According to Johnston (2009), it must be acknowledged that teachers are extremely busy people with gruelling demands on their time. But saying that they don't have the time to integrate environmental learning into their teaching is like saying we don't have time to light the fire because we're too busy trying to keep warm. Day by day demands and claims for teachers are increased significantly, and, in order to offer comfortably more effective education, they have to design better their didactic interventions.

This research aimed to highlight the requirements of SPEEs' implementation and focus on the weak points of initial design. The sub queries of the research question are about the target population, the required infrastructure (premises, equipment), the human resources, identification of sources of knowledge, the schedule of implementation phases and the budget.

METHOD

In fact, the research questions are also the evaluation objects of SPEEs as each SPEE is a general object of evaluation. The specific factors that make it up are the specific evaluation objects such eg students, teachers, support materials, infrastructure, services, human resources, spaces etc (Dimitropoulos, 1996). This research aims to analyze the basics elements of SPEEs' design relating to the determination of the demanding conditions for implementation.

The research method was case study and content analysis of the archival material of SPEEs (Bird, 1990; Cohen &Manion, 1994; Iosifidis, 2003). The research sample consisted of archival material of the submitted SPEEs to the Secondary Education of Heraklion during the school year 2005-2006, consisting of 22 Application Forms (AFs) with corresponding 22 Final Reports (FRs), in printed and electronic form, and texts written by some of the teachers participated to the projects. School year 2005-2006 was the last year (of three total) of funding SPEEs by Aegean University so it was appropriate for at least direct evidence of its influence. All SPEEs had materialized by Gymnasiums, because the number of SPEEs implemented by the Lyceums was small and cannot provide valid conclusions. Eight (8) of these programs had been evaluated and had been approved for funding by Aegean University (Group A) they had resubmitted with the specific plan (SYP-A) as required the specifications put Aegean University. Thereafter, an additional group (B) of 14 selected projects from the total number of 42, those had first in line submitted to the Secretariat. For archiving had not followed specific rule. In the sample there are represented small and large schools of rural and urban areas of Heraklion prefecture. All the AFs of the programs had the same pattern (title, method, activities, evaluation, schedule, budget, names of participating students and teachers), conforming to the SPEEs template of Greek Ministry of Education. The FRs of the studied archival material hadn't a template, they constituted by texts, songs, music, photos, videos but they were more detailed than the AFs as for the activities, the framework and the followed process of SPEEs' implementation.

Table 1 Tool for Assessment of School Environmental Projects Implementation Requirements

Implementation Requirements of school Environmental Projects	A. Target Population	1. Selection criteria for the Target Population 5.3.2. 2. Synthesis of the Target Population 5.3.1 3. Educative needs and motives of the Target Population 5.3.4. 4. Availability of learners 9.1.3.
	B. Required Infrastructure (Premises, Equipment)	1. Investigation of required premises 9.2. 2. Recording of available infrastructure 5.4.2. 3. Recording of required equipment 9.3.
	C. Human Resources	1. Ensuring the necessary scientific and administrative support 9.4. 2. Ensuring qualified teaching staff 9.4.1. and 9.5.2. 3. Exploitation of external collaborators 9.4.2. 4. Previous experience in educational programs 9.5.3
	D. Identification Of Sources Of Knowledge 9.5.	1. Ensuring access to knowledge sources 9.5.1.
	E. Schedule Of Implementation Phases	1. Estimation of the project duration 9.6. 2. Work timetable 9.6.1.
	F. The Budget	1. Ensuring adequate financing 5.4.1. 2. Preparing the Budget of required expenses for acquisition of additional equipment 9.1.1. 3. Preparing the Budget of required expenses for fees 9.1.2.

Afs submitted for approval to the Office of Environmental Education in the beginning of the school year and FRs for proof at the end of the school year.

For triangulation, the used multiple sources of data collection (AFs, FRs, texts of teachers assessment of the projects, other surveys) combined in qualitative and quantitative analysis (Bell, 1997; Vergidis, 2000; Iosifidis, 2003). Triangulation helps to overcome methodological limitations problems, achieves the junction of information collected, and is particularly useful in the case study. Recommended especially in content analysis because it enhances the reliability and validity of the conclusions (Cohen & Manion, 1994; Bell, 1997).

The research criteria (Table 1) based on the aims and objectives of the of EE and ESD projects (UNESCO, 2004; Zygouri, 2005; Flogaiti, 2006; UNECE, 2006; Aegean University/sppe, 2004; NTU, 2006; PI, 2007; Circular Ministry of Education, 2007) in order to answer the sub queries of the research question: A. Target Population, B. Required Infrastructure (Premises, Equipment), C. Human Resources, D. Identification of Sources of Knowledge, E. Schedule of Implementation Phases, F. the Budget.

The content of paper and electronic data examined in a structured manner, to which were sought specific categories of information. Became discourse analysis with recording unit the word and phrase. It was preferred not to be coded by using the recording unit to general categories of meanings of some electronic classifying software, firstly because not the same recording unit used for the classification of all types data and because, as reported by Markoff, Shapiro, & Weitman (in Kyriazis, 1999), not ensured the variety and diversity of meanings that can be drawn and distinguished from such projects. Characteristic sentences were isolated to answer the research questions or evidentiary of the criteria and the most indicative of them are given in the Results section.

The rating of the criteria was based on whether there was or was not, and to what degree, the quality, relevance and completeness of the criterion response. It checked if each criterion was referring clearly in the documents or if some phrases attributed the meaning. The scoring criteria was 0-4 in five-point scale, based on the contents of the archive data. 0: no evidence to satisfy the criterion. 1: limited, weak satisfaction, 2: moderate, 3: substantial, strong satisfaction, 4: the design and implementation of the program took into consideration the demanding implementation conditions.

It is worth noting that the zero scoring is because there wasn't evidence for the criterion satisfaction.

It does not mean that, in the design and implementation of the project, these criteria were not met in reality, just not recorded sufficient evidence to lead to a higher rating.

Then, data was structured, categorized and classified to pursue analysis by criterion of each research question. Statistical analysis became with the Microsoft Excel and Statistical Package for Social Science (SPSS). Ratings of criteria's is presented in the Table1. Each cell of the table contains the % relative frequencies (above) and frequencies (below) for grades 0,1,2,3,4 taken by SPEEs. SYP-A and SYP-B compared with the p-values of the non-parametric test Wilcoxon & Mann Whitney. Wherever the p-value is < 0.05, there is statistically significant difference.

RESULTS

In all studied SPEEs identified, in general, the required conditions for the implementation, not detailed recorded in SYPs-B as happens in SYPs-A, but it is obvious from the FRs that it happens in the planning phase and in the process of project implementation, depending on the arising needs.

Table 2 shows the results of the research question about the determination of the demanding conditions for the implementation of SPEEs, as for ensuring the necessary administrative and scientific support research sub questions A and B. It is presented the number of projects and their relative frequency (% ratio in the sample) receiving the corresponding score by the investigating criteria.

Target Population

In studied SPEEs doesn't take place analysis of the Target Population concerning the synthesis, needs and motives. A possible explanation is that teachers know their students from the teaching courses, so they know about their needs on EE and else, therefore do not make preliminary research determining students' educational needs and expectations.

Selection criteria for the Target Population

Not mentioned the way selection of students participating in ET and SPEE. In the FRs of group A was detected little, non-evaluable data for this is not presented separately in the results.

Table 2 Assay conditions for SPEE implementation-Scores Table of SPEEs, regarding (A) the Ensuring the necessary administrative and scientific support and (B) the Listing of knowledge sources. Presented the % Relevant Frequencies and Frequencies (in parentheses) of SPEEs in the grading scale 0-4

Investigation of conditions for SPEE implementation	Υποερώτημα /Κριτήριο	Kind of document Grading scale	SYP-A (N=8)					SYP-B Group A (N=8)/Group B (N=14)					FRs (N=22)									
			0	1	2	3	4	0	1	2	3	4	0	1	2	3	4					
			A Ensuring the necessary administrative and scientific support			0,0	0,0	0,0	12,5	87,5	0,0	42,9	0,0	0,0	12,5	21,4	37,5	7,1	50,0	28,6	0,0	0,0
B Listing of knowledge sources	2	0	0	0	1	7	0	6	0	0	1	3	3	1	4	4	0	0	12	0	10	
	1	0,0	12,5	37,5	0,0	50,0	0,0	71,4	12,5	7,1	50,0	0,0	25,0	0,0	12,5	21,4	68,2	0,0	9,1	0,0	22,7	
	2	0,0	0,0	0,0	0,0	100,0	0,0	0,0	0,0	0,0	0,0	0,0	100,0	78,6	0,0	21,4	0,0	0,0	4,5	72,7	22,7	
			0	0	0	0	8	0	0	0	0	0	8	11	0	3	0	0	1	16	5	

Synthesis of the Target Population

No data retrieved from the archival material concerning the synthesis of the Target Population of each SPEE.

Educative needs and motives of the Target Population

In SPEEs, there were no investigation of individual and collective educative needs and motivation of the target population, according to the pyramid Maslow's social needs, esteem needs, cognitive, sensory and self-realization needs). Only in one SPEE, in SYP-A of the A-3 project becomes "determination of the level awareness students have for the game, over the time, in the natural environment and the effects of the cultural environment of Archanes. B. Detection of particular student's inclinations and skills in order to taken into account of the division of labors (students as painters, actors, lyricists...)".

Availability of learners

Regarding the availability of learners to contribute to the implementation of the project, did not become any investigation in SPEEs. In any case, participating teachers, students and external collaborators contribute in many ways to the materialization of the project activities and outcomes production, for example with their transportations outside school, by providing material and work according to the project topics, and others. Thus, this criterion taken into account overall for all SPEEs

Required Infrastructure (Premises, Equipment)

Only in SYPs-A of SPEEs, were recorded the existing and demanding infrastructure, more specifically required resources of equipment and scientific support for the implementation of the projects. There was special field in the Aegean University template of AF in contrast to the AF of Greek Ministry of Education, which had not such field.

Investigation of required premises

In SYPs-B there is not recordings of the available premises for the project implementation in contrast to SYPs-A where asked some references to the planning use of premises. Exception was the AF of B-2 project where is written that "became topographic diagram of the courtyard" to meet the project's needs because the subject was the changes in the school yard. Perhaps it happens because it is assumed that the school premises and equipment, which are about the same for all schools, are always available to all materialized projects.

Also, there were not any references of required premises and means of the visiting Centers of EE and any other places and facilities of external collaborators that used in the educational activities, as SPEEs mainly, from their nature, offer outdoor education.

Recording of available infrastructure

Recording of the required equipment is an essential component of the correct and complete plan of SPEEs. It is needed to be controlled the available PCs, internet access, access to libraries, the adequacy, quality and usability and appropriateness of tools and means.

In SYPs-B there is not recordings of the available material and technical infrastructure (technology infrastructure, programs

for technological modernization, software, hardware, etc.) in contrast to SYPs-A where becomes detailed description in special field of the school equipment that will be used, educational means will be created to support the educational process etc). In SYPs-A there are numerous reports of the available infrastructure to implement the projects, but, because there were no comparative data SYPs-B, did not analyzed the relevant data. In SYPs-B and FRs does not sought investigation of available infrastructure to implement the program. However done indirectly by way, even though not mentioned, by the recording materials have to get in the budget submit to both types of SPEEs.

Recording of required equipment

There were many, but sporadic and fragmentary reports in SYPs-A about the equipment to be used, but not the efficiency, usability and quality. In SYP-B of B-2 project is referred "phytochrome, wood, tools, plants, flower pots..." and in the SYP-B of B-4 project "searching material from libraries, internet, Centers of EE...". An important parameter, which is recorded in the responses of teachers who implement SPEEs in Secondary Education of Lassithi prefecture of Crete, both in the obstacles and the desired assistance, is the infrastructure of schools (Drakonaki, 2006).

Human Resources

Teachers nowhere in SYPs mentioned investigation of availability of the required educative staff for the implementation of the planning SPEE, but implicitly, even if not stated, by recording the teachers of PT, in both types of SPEEs. The same applies to the external collaborators of the project sought to universities, local authorities, organizations, scientists, and rarely elders and other locals.

Ensuring the necessary scientific and administrative support

Only in SYPs-A, in three different fields, not in SYPs-B, asked to record the required scientific support for the project implementation.

In cooperation signed a relevant document by external partners, accompanying SYP-A which refers the subject of the cooperation. Administrative Support is not referred to both type of SYPs because teachers of PT undertake it in collaboration with the Directorate of school. Networks of EE, which have local, regional, national, international scope, significantly support SPEEs providing specific teaching material. The most of them are coordinated by the Centers of EE which have main purpose to offer educational programs to the ETs which visit them, also training seminars for teachers and locals, because they have also LLL function.

In the implementation of SPEEs also significantly contribute the different specialties of PT's teachers, which serves the interdisciplinary of the project development. In archival material refers variety of partnerships, for example in SYP-B of B-4 SPEE are written "Centers of EE of Drapetsonas, Archanes, Vamos, Institute of Marine Biology of Crete, and Natural History Museum ... invitation for lecture by a specific scientist on the issue of water contamination".

Ensuring qualified teaching staff

It is not recorded communication and collaboration of PT's teachers with their colleagues from the same or other schools. Availability of teaching staff, by the part of the school, ensured in a special meeting where all teachers informed about some students and teachers' interest to materialize the project during the school year, so anybody can show interest in participating in the project and to be responsible for implementation. For this meeting is drafted a special document which undersigned by all, which submitted together with the AF to the Office of EE of Secondary Education Administration. In this way, SPPE's materialization becomes hypothesis of the whole school community. Also, in both types of AF are written the names of participating to the project teachers. The criterion of ensuring qualified teaching staff was taken into account overall for all SPEEs. However, the question is whether teachers who design and implement SPEEs are specially and well trained for this (Athanasakis, 2005 Kalathaki M, 2005).

In all SYP-A and most of SYP-B (78.6%, N = 11) there is good provision for qualified personnel to assist the project implementation, even it is not mentioned a research on the availability of scientific personnel. It is assumed from the activities, partnerships and visits made, so the relevant discussions and agreements should be preceded. After all bodies, scientists and organizations not usually refuse any cooperation requested by ETs. Indicative listed persons and bodies collaborators of some SPEEs: A5-SYP-B- "Geotechnical Chamber of Heraklion," B-5- SYP-B- "Museum of Natural History, Department of Agriculture, Hunting club of Heraklion, Friends Group of Cretan tracer", B-11-SYP-B- "IEK Gouves, Gouves Cultural Association, Department of Floriculture & Crop Technological Educational Institute of Heraklion, the Forest Service, B-13- SYP-B-ATEI, National Meteorological Service, Natural History Museum, National Organization of Tourism, Center of EE of Archanes".

Exploitation of external collaborators

Innovation of SPEEs is that they aim to bring renewals and enrichment of educational practices, seek the school's openness to society through cooperation with a variety of social partners" (Ioannidou *et al*, 2005). In all SYP-A and more SYP-B (72.7%, N=16), there is even a small, provision for external collaborators to strengthen the project. They are local authorities, associations, municipal authorities and elders as in A-3-SYP-B- "young's contact with elderly residents to record the game, over time, through personal experiences". At SYPs-A sought detail lists of persons and bodies external collaborators of the project. Special case consists B-10 project, which SYP-B refers cooperation with the ET of another school of the county, which is extremely rare in SPEEs. All AFs which contained data on this criterion (10-45%) declared that they had done enough good choices, they had found the project appropriate external partners, and for this reason they got high score. Extensive partnerships mentioned by the teacher T3 that developed in the project that he had involved "there was cooperation with archaeologists, foresters, agronomists, people who have dealt with the local history, and local leaders and others". Roussou (2007) states that only 48% of teachers in primary schools develop relations with institutions of society. The percentages for the other education levels amounting to

81% for teachers of Gymnasiums and 70% for Lyceums. Regarding the collaborations developed in SPEEs of Rethymnon, partnerships are preferred with the responsible of Primary EE, with colleagues, with the Centers of EE, with parents, local authorities and non-governmental environmental organizations (Mpatsi, 2006).

Previous experience in educational programs

Both types of SYPs ask about the previous teachers' experience in the design and implementation of SPEEs. In the research, this was not object for investigation in the archival material, so it was taken into account overall for all SPEEs from the view of existing or not.

Innovation in the used educational methodology of SPEEs is blended learning, a combination of traditional face-to-face teaching with workshops, seminars, and distance learning techniques on-line (such as internet, television, conference calls), more participative for students and teachers, which provide community learning.

Identification of Sources of Knowledge

Ensuring access to knowledge sources

SYPs of group A in field D10, listed in detail the knowledge sources (web, libraries, written press, etc) that will be used, even they don't say exactly how to ensure access to them, but appears to have done, by the way they list. The respective SYPs of group B have a few reports, and these only in the context of the specific objectives of the project, because no specific field for completion there is in SYP-B. 10 of SYP-B (45.5%) make no reference to ensuring access to knowledge sources, and these are all of the group B. Indirectly, only in 7 AFs (32%), resulting little data on the used sources of knowledge. Spyropoulou (2001) survey revealed little time available for collecting information and briefing from various sources such services, sectors, excursions, etc to the detriment of knowledge and data analysis. Some examples of sources of knowledge are given below from SYPs-B: A-7-"use of libraries, new technologies, press, etc.", A-4-"to study the student books and websites referred to wines ... to seek artwork ..." and B-10-"online literature, interviews with local residents". Mpatsi (2006) records as sources of teachers' information on environmental topics the lectures and workshops, newspapers, television, radio and magazines, seminars, internet, various environmental courses, environmental organizations, information by environmental officers, colleagues and specialists.

Schedule of Implementation Phases

Estimation of the project duration

The duration of SPEEs is defined by the Ministry of Education lasting a school year, no less by five months. In SYP-B is requested to write the implementation period of the project because employment of teachers in SPEEs is done by overtime (until 2000 with additional fee) or completion time, thereby it has to be controlled the teachers' involvement. This criterion was taken into account overall for all SPEEs. The above referred Spyropoulou survey (2000) showed little time available for organization and effective planning of SPEEs. Drakonaki (2006) cites an excerpt from the interview of a teacher, indicative of the view of many teachers on whether the

annually supplied time is sufficient for their development. This extract is transferred below unchanged "The compromises must make us think about the quality and effectiveness of SPEEs, which materialized under the pressure of time, so it is difficult or impossible to develop the concerns, dialogue and conclusions, required in the lengthy student-oriented procedures adopted by EE". In the current research, teacher T1 expressed a more optimistic view "within the educational community of each school is also difficult to gain time to smoothly operate a group that deals with something out of the daily schedule. But, where there is passion, vision and sensitivity, time left over and is found the ground to blossom and brought to fruition the student team".

Work timetable

Task scheduler is submitted together with the SYP-A and SYP-B for SPEE's approval. Analysis of SPEEs' timetables was not object of this research, only the syntax or not, since it is crucial element for the design. Teacher T3 included activities in the afternoons and weekends in the project schedule "The biggest problem in the project was the inability to find the necessary time from the school curriculum. The seventh hours, evenings and weekends covered this necessity".

The Budget

Ensuring adequate financing

In all SYP-B submitted for approval in Secondary Education Administration drawn up an indicative budget, since there is no state financing. So there's no reason to study the way in which each SPEE draws investigation adequate financing. Aegean University funded all approved SPEEs with the same amount of 1500 Euros for one year duration (Aegean/sppe, 2006). SPEEs that were approved until 2006 by the Secondary Education Administration financed from the state budget with a minimum amount of 60 Euros (Circular Ministry of Education, 2007). Both types of SYPs have field for budget for required materials and services but budget's analysis was not object of the current research, only if existing or not. For these reasons, this criterion was estimated overall in all SPEEs. Budget syntax is difficult, also it can be complete from the beginning of the project, because as the project activities are developing new demands are presented. Teachers who implement SPEEs in Secondary Education of Lassithi, both in the obstacles and the desired assistance, declared, among others the project funding (Drakonaki, 2006).

Preparing the Budget of required expenses for acquisition of additional equipment and required expenses for fees

Preparing the Budget of required expenses for acquisition of additional equipment and required expenses for fees is requested in both types of SYPs. SYP-B sought to draw budget for the costs in contrast to SYP-A which sought more detailed information about the expenses that will be covered by the project funding. No data regarding the syntax and implement of the budget found in AFs. Since both types of SYPs require budgeting during their planning, this criterion was estimated overall in all SPEEs. It was not interest of this research to analyze the budgets but only to check whether or not budget is included in SYP, in order to be complete the project design.

Proposing a suitable AF

Comparing SYP-A and SYP-B (Table 3), there was significant difference in score (p-value = 0,020), indicating statistically significant superiority in SYP-A against SYP-B, of the criteria about providing the necessary scientific and administrative support for SPEEs implementation, in the planning phase in terms of training and experience of qualified teaching staff (p-value=0,050) and the exploitation of external collaborators (p-value=0,008), relatively.

Table 3 Values (p-value) per sub query of the research question about the investigation of conditions for SPEEs' implementation that became non-parametric tests Wilcoxon W. & Mann-Whitney U

Research Question	Research sub query	Τιμές (p-value)
Investigation of conditions for SPEE implementation	Investigation of required premises	1,000
	Recording of required equipment	0,616
	Ensuring of administrative / scientific support	0,020
	Listing knowledge sources	0,082

There wasn't significant difference in score on the criteria of investigation of required premises and the recording of required equipment (values > 0,05). The values (p-value) referred to nonparametric test Wilcoxon W. & Mann-Whitney U held in the respective sub-questions.

CONCLUSIONS

Teachers who design, construct and materialize SPEEs identify, in general, the required conditions and human resources for the implementation, but they do not record detailed in SYPs-B and the Budget. The pre-assessment of the project demands is more analytical in SYP-A. The study of FRs reveals that there is provision of SPEEs' requirements for the implementation, even they are not recorded in the AFs. It happens in the planning phase and in the process of project implementation, depending on the arising needs.

The primacy in the score of the SYP-A towards SYP-B can be explained by the particularly detailed and demanding form of supplementation SYP-A which required the Aegean University for funding approval. SYP-B does not allow analysis of project content, the expectations of the target group, evaluation and feedback methods of the educational process. The existing needs to be improved and enhanced further. Of course, the effectiveness and success of an educational project is result of many factors' interaction. The above referred are a few of them, those can be taken into consideration in the phase of project planning and structuring. This paper does not pretend to exhaust the issue of tricky areas in educational project planning. Aimed to highlight some of them, contributing to more effective and comfortable SPEEs' design and implementation.

Assessing that further investigation and strengthen the data relating to the design and implementation of SPEEs in Secondary Education, proposed that AFs must become more analytical and require more detail, as SYP-A required Aegean University. Also FRs must have a general format and plan, when they submitted at the end of SPEE to make easier the draw comparative conclusions from those who participated and all actors involved in school EE and are interested in further

improvement of project design and structuring. The subject content of ESD needs proper understanding, taught with learner-centered methods and strategies, communicated at a mutually agreed time between the teacher and the learner, much different way of the dominating teaching in schools. Teacher education and training are expected to shoulder the responsibility of change (Ojedokun, 2012; Rio+20, 2012) underscored the importance of supporting educational institutions, especially higher educational institutions to carry out research and innovation for ESD, to develop quality and innovative programs, including entrepreneurship and business skills training, professional, technical, vocational training and lifelong learning, geared to bridging skills gaps for advancing national SD objectives.

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