

# The Quality of Counseling and Vocational Orientation (C.V.O.) and Its Effectiveness in Secondary and Higher Vocational Education. Preview of the Educational Community and Alumni Views

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## Abstract

Career counseling is an integral part of the educational process, as it helps students to choose their future career paths and develop the necessary skills for the job. The present study investigated the quality of Counseling and Vocational Orientation (C.V.O.) in the educational structures of secondary vocational education and higher vocational training, through a systematic preview of the opinions of the educational community. During the sampling design, it was decided to apply mixed sampling, as the most appropriate method, for a more representative sample of the population. Stratified and Cluster sampling was performed for the teachers, pupils, adult students and Simple Random sampling for the graduates. Appropriately structured questionnaires of 30 questions were completed with the participation of 382 teachers, 594 pupils, 344 adult students and 180 graduates. **Results:** Regarding the teaching of School Vocational Guidance (S.V.G.), it was found that the adequacy of the teachers' knowledge affects the degree of satisfaction of the apprentices ( $p < 0.001$ ) and influences their opinion on the choice of profession ( $p < 0.001$ ). On the contrary, the satisfaction or not of the research groups does not affect the teaching of the S.V.G. ( $p < 0.119$ ). The preparation of students from S.V.G. in a previous stage of education is satisfactory (72%). The quality of education provided by the schools affects the type of education and the type of school they choose ( $p < 0.001$ ). The school provides important information to students about various professions and about professional rehabilitation and development ( $p < 0.001$ ). Other factors that influenced the research population in choosing a profession were: 1) The adequacy of teachers' skills ( $p < 0.001$ ). 2) The implementation of

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educational programs and visits by experts at the school ( $p < 0.001$ ). 3) Making educational visits to professional premises ( $p < 0.001$ ). 4) Participation in actions such as Erasmus+ ( $p < 0.001$ ). 5) The absorbability of graduates in the labor market ( $p < 0.001$ ). 6) The vesting of professional rights ( $p < 0.001$ ), etc. However, the research also mentions factors that did not influence the choice of profession, as we would expect. **Conclusions:** C.V.O. supports pupils, adult students and graduates to achieve their professional goals and adapt to the modern challenges of the labor market. Teachers (78%) and graduates (67.8%) are more satisfied with the quality of the services of the S.V.G., while students (48.5%) and adult students (37.5%) are less satisfied.

## Keywords

Counseling, Counseling and Career Guidance (C.C.G.), Counseling and Professional Orientation (C.P.O), Counseling and Vocational Orientation (C.V.O.), Counseling and Vocational Guidance (C.V.G.), Vocational Orientation, Career, Career Orientation, School Vocational Guidance (S.V.G.), Professional Training, Teachers, Students, Adult Students, Pupils, Graduates, Vocational High Schools (V.H.S.), Schools of Higher Vocational Training (S.H.V.T.), Profession, Adult Education, Mixed Sampling, Quality of Counseling, Quality

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## 1. Introduction

Today's era of increased demands and rapid developments affects people's professional life decisively (Magee, Kuijpers, & Runhaar, 2021). People of all ages must be prepared at any time for important career decisions (Hughes, Meijers, & Kuijpers, 2014; Reid & West, 2016). Few workers begin and end their working lives in the same job. Most of them change professional activity, practicing either related or different professions to the original one (HAUG, 2020).

C.V.O. is an important pillar of career and professional development (Arulmani, Bakshi, Leong, & Watts, 2014). In essence, it is the set of assistance and support activities (procedures) carried out in an organized and systematic manner by special services and specialized scientists. Its purpose is to support individuals in understanding their professional interests, skills and capabilities, exploring career options, looking for opportunities in the labor market and providing guidance for a smooth transition from education to work or further education (Kasotakis, 2004).

There is often confusion between the definitions of "Consulting" and "Career Counseling". With the term Consulting, we refer to the branch of psychology. Consulting psychologists specialize in a variety of approaches (clinical, community, school, educational, etc.). They offer a wide range of services, the most common of which are individual assessment, individual and group counseling, organizational development, training, employee selection and evaluation, change management, etc. (A.P.A., 2023). By Career Counseling we mean professional assistance in

dealing with personal problems, including emotional, behavioral, vocational, educational, rehabilitation, etc. The counselor makes use of such techniques as active listening, guidance, advice, discussion, clarification, and the administration of tests (A.P.A., 2023). Both of them provide support to individuals seeking guidance on personal or professional matters and enhance their self-esteem and emotional maturity. Psychologists often focus more on providing technical strategies that clients can follow. Career counselors usually offer broad methods for dealing with challenges.

The differences between them may seem vague or overlapping, but in fact, they are distinct and important (Veech, 2021). In the survey, we refer mainly to Career Counseling and not to advanced consulting and counseling approaches required to address significant behavioral issues. However, there are references to counseling in general and how it enhances the educational process.

C.V.O. is considered services, which includes: vocational information, vocational counseling, vocational choice and activities at work for the adaptation of young people (Veipa & Kozlovska, 2013).

C.V.O. is interwoven with sessions in which students' interests, abilities, and goals are discussed. Combined with a test of professional interests, it helps students identify their inclinations, with the ultimate goal of self-awareness (PARTHA, 2020).

Globally, students' first contact with C.V.O. begins in high school marking late adolescence (Zafar, 2019; Veipa & Kozlovska, 2013) and continues throughout adulthood.

In Greece in 2018 was there an attempt to legitimize the profession of Career Counselor (Government Gazette 317/B, 2018), while only in 2022 was a system of certification of the qualifications of career and professional guidance counselors established (Government Gazette 617/B, 2022). Counseling is provided by counseling experts as well as counseling teachers. Career education programs are organized by (I.A.C.S.C.), which are responsible for their implementation and supervision (Government Gazette 136/A, 2021).

In the high schools of the country, it first appeared as a subject in 1981-1982 (Kassotakis & Fotiadou-Zachariou, 2002) while in the V.H.S. vocational guidance is a teaching subject called S.V.G., with specific units that include Counseling and Career Education. Despite the recent efforts to strengthen C.V.O., by the Ministry of Education (ESOS, 2024), there are issues related to:

- 1) lack of resources. Counseling experts and teachers do not have access to the necessary resources and information to provide comprehensive guidance (Mindler, 2021; Kumar & Arulmani, 2014; Torunoğlu & Gençtanırım, 2015).
- 2) insecurity in the labor market due to rapidly changing conditions that make it difficult to plan a stable career path (Zoni, 2021).
- 3) the teaching of S.V.G., by non-specialized teachers. Similar problems are also presented in other E.U. countries (O.E.C.D., 2004).
- 4) the lack of further training of teachers in the institution of C.V.O., while the requirements for improvement are significant (Lai-Yeung, 2014; Torunoğlu &

Gençtanırım, 2015).

The E.U.'s interest has been focused on C.V.O., for several years. Already in 1963, in a decision of the European Council concerning the formulation of directives for the drawing up of a uniform European policy, it declared the importance that should be given to a “permanent system of information and guidance or professional counseling for young people and adults” (N.O.C.Q.V.G., 2012). The E.U. implements various policies and programs to promote C.V.O., and lifelong learning with the main objective:

- a) Improving employment (facilitates the transition from education to work and supports rehabilitation).
- b) Tackling unemployment by providing advice on choosing appropriate educational and professional paths.
- c) Promoting lifelong learning by strengthening continuous education and skills development throughout working life.

***Some of the E.U. initiatives promoted by the C.V.O., are:***

- 1) Erasmus+ which supports education and training. It includes actions for student and teacher mobility, as well as cooperation between educational institutions and products (European Union, 2021).
- 2) Europass with which a set of tools helps citizens to present their qualifications and skills in a common framework (European Commission (a), 2020).
- 3) The European Alliance for Apprenticeships strengthens cooperation between member states, businesses and educational institutions to promote apprenticeships as through education and training (European Commission (b), 2020).
- 4) The enhanced guarantees for youth (European Commission (c), 2020)
- 5) The support services that E.U. member states provide for C.V.O. (European Commission (d), 2020).
- 6) Electronic platforms that provide information on occupations, education and training (European Commission, 2021).

Lifelong C.V.O. refers to services intended to support people of any age with their families at any point in their lives, to make educational and career choices and manage careers (Irving, Borgen, & Hoejdal, 2020), to define and achieve their professional goals. High-quality C.V.O. services are crucial in times of change and transition (Skills Norway, 2018; Haug et al., 2019). Through it, interested persons develop skills, change professional direction or improve employment prospects. Main objectives of C.V.O., in adult education are: 1) Improving self-awareness (Green, 2019), 2) Information about the labor market (Kumar & Arulmani, 2014), 3) Planning career, creating a career plan (Braunstein-Bercovitz & Lipshits-Brazilier, 2017), 4) The development of skills (Brine, 2005), 5) Networking with professionals (Gontareva et al., 2020).

## 2. Objectives and Methods

### 2.1. Purpose of the Research

The purpose of the research was to investigate the quality of C.V.O., in Secondary

Vocational Education structures and Higher Vocational Training Schools. In more detail, teachers, students, graduates, and adult students were asked the research question regarding: “the degree of satisfaction with S.V.G. provided by the school”.

## 2.2. The Sample of the Study

Teachers, students and graduates of vocational education and adult students from the prefectures of Attica and Cyclades participated in the survey.

The final sample consisted of a representative number of participants (men and women of different ages, geographic regions, specialties, etc.), to ensure the reliability and validity of the research. In total, 382 teachers, 594 students, 180 graduates, and 344 adult students participated in the survey.

## 2.3. Method of Sampling

During the sampling design, it was decided to apply mixed sampling, as the most appropriate method, for a more representative sample of the population (teachers, pupils, and adult students) (Sharp et al., 2011; Collins et al., 2007), while for the graduates, simple random sampling was applied.

Subsets of the population were selected that met specific properties (Panaretos & Xekalaki, 2000). For this reason, stratified sampling was used, to ensure a representative sample of each part of the population, to deal with the specificity of the population’s geographical distribution (existence of many small islands, some of which have absorbed part of the immigration wave through their schools) and to reduce the estimation errors (Papoulis, 1966; Halikias, Lalou, & Manolesou, 2015).

Cluster sampling followed because the hierarchical sampling plan starts from the educational regions of the country, continues in the school units of each region and ends in the classrooms of the schools (Papageorgiou, 2015).

The sampling design was completed by applying simple random sampling between each cluster as defined in cluster sampling, to select the final sample (Turk & Borkowski, 1990).

The educational regions of Greece are 52 (Ministry of Education, 2024). We chose the prefectures of Attica and Cyclades for the research (stratified sampling). Each constitutes a different stratum (layer) of research. The particularity of this study was the participation of populations from urban and semi-urban (island) areas. According to the sampling design, within the strata (layers), there was as little dispersion as possible (high homogeneity) but between them, as much as possible (heterogeneity) (Halikias, Lalou, & Manolesou, 2015).

The stratified sampling design neither impose restrictions on how to sample from stratum to stratum, nor on the sample size of each stratum (Papageorgiou, 2015).

Then, the simple random cluster sample of multiple stages, of equal size, was applied (Panaretos & Xekalaki, 2000; Kamalu, Niyomwungere, & İlker, 2024). The

term “random” does not mean that we selected whoever we wanted from the population. The sampling was random because in its various stages, the composite units were selected by simple random sampling, i.e. by lottery (Halikias, Lalou, & Manolesou, 2015).

The researchers had direct access to the sample of the population, however, the members of the population were approached indirectly, through larger groups (clusters) to which each member belongs.

Equal-sized sample of the survey populations was selected. The proportional division between samples and populations was not applied because the expected samples (teachers, pupils, and adult students) for the population of the Cyclades were too small to draw conclusions and complete the statistical analyses (Zafeiropoulos, 2010).

Cluster sampling involves several stages (Farmakis, 2015). The design of the sample survey included four stages:

- 1<sup>st</sup> stage, with simple random sampling, the selection of the primary sampling unit was carried out. From the eight regions of the prefecture of Attica, three were selected, the region of C' Athens, D' Athens, and A' Piraeus. From the four regions of the prefecture of Cyclades, three were selected, the region of B' Cyclades, C' Cyclades, D' Cyclades.
- 2<sup>nd</sup> stage, with simple random sampling, the secondary sampling unit was selected, which concerned the municipalities that belong to these regions of the prefecture of Attica and the islands that belong to the regions of the prefecture of Cyclades.
- 3<sup>rd</sup> stage, with simple random sampling, the tertiary sampling unit was selected, which concerned the schools belonging to the selected municipalities and islands.

From the prefecture of Attica the V.H.S. of Haidari, the V.H.S. of Renti and the V.H.S. of Sivitanidio school were selected. From the prefecture of Cyclades, the V.H.S. of Paros island, the V.H.S. of Naxos island and the V.H.S. of Thira island were selected.

According to the sampling design of cluster sampling, between two clusters there must be as little dispersion as possible, i.e. great homogeneity of the group, but within the clusters greater dispersion (Halikias, Lalou, & Manolesou, 2015).

This condition is satisfied because in V.H.S. (e.g. of Naxos) students from all over the island attend. Some of them are engaged in tourism and belong to the most affluent groups of the population, while others are engaged in agriculture and belong to economically disadvantaged groups. Generally, V.H.S. are large schools, each municipality has a small number of schools, therefore, there is a large dispersion (heterogeneity) among the population. It is stated that a cluster with heterogeneity implies a representative sample of the population and therefore a more accurate estimate of the population.

- 4<sup>th</sup> stage, the quaternary sampling unit was selected, which involved a section

from each class of the school. This section was selected by simple random sampling. These departments were the sample of the research. The selection of the sample was carried out at the group level and not at the level of individual members of the population (Papageorgiou, 2015). In this phase, a census of the members of the final clusters was carried out and not a sampling of individual members.

The sample number of students was determined in advance. A sample was selected, representative of the population corresponding to 300 students from the prefecture of Attica and 300 students from the prefecture of Cyclades. Specifically, an attempt was made to collect 33 questionnaires from each class (A, B, C) of each school. In total, 297 student questionnaires were collected per cluster. This number corresponded to 3.4% of the total population of Attica and 11.9% of the population of the Cyclades (Greek Statistical Authority, 2024). A total of 594 students participated in the survey. There is no absolute rule stating the exact percentage of each sample (e.g. data must be collected from 10% of the population).

The survey sample size was closely related to (Gray, 2023; Rahman, 2023): 1) the research question, 2) the population (in terms of size and characteristics), 3) the sampling method, 4) the sampling error, 5) the level of confidence defined, 6) the techniques of data analysis. For the reliability of the research, the number of 600 students was considered sufficient to reduce errors.

At each stage of sampling, simple random sampling is applied, so we can use its formula to estimate the maximum error. In the formula:

$$e = \frac{1}{\sqrt{n}},$$

where: “ $n$ ” is the sample size we used. A sample size of  $n = 594$  students corresponding to:

$$e = \frac{1}{\sqrt{n}} = \frac{1}{\sqrt{594}} = 0.041$$

Therefore, the maximum error equals 4.1% at the 95% significance level. A similar sampling design was applied for all the other participants.

The sample number of teachers was determined in advance. A sample was selected, corresponding to 200 teachers from the prefecture of Attica and 200 from Cyclades. The survey was not limited to the teachers of the schools designated in the third stage of sampling, in order to have a representative sample of the population.

A total of 3.347 V.H.S. teachers are employed in the prefectures of Attica and Cyclades (Greek Statistical Authority, 2024). 382 teacher questionnaires were collected. This number corresponded to 9.5% of the total population.

The sample number of adult students was determined in advance. A sample was selected, corresponding to 300 adult students from the prefecture of Attica and 100 from Cyclades. In the third stage of sampling, the tertiary sampling unit was selected, which concerned the S.H.V.T. who participated in the research.



From the prefecture of Attica, S.H.V.T. of Peristeri, Nea Ionia and Sivitanidio school were selected. From the prefecture of Cyclades the S.H.V.T. of Naxos island was chosen.

An effort was made to have adult students from all majors participate. For this reason, the participation of 20 adult students per specialty was sought. A total of 3.960 S.H.V.T. adult students study in the prefectures of Attica and Cyclades ([Edu.klimaka.gr, 2022](#)). 344 questionnaires were collected. This number corresponded to 8.68 % of the total population.

Regarding vocational education graduates, there were limitations in the selection of the sample since there was no direct contact in the population. As a result, simple random sampling was applied, despite the disadvantages of the method. The participation of as many graduates as possible was sought. After permission, questionnaires were sent to their personal emails and a total of 180 questionnaires were collected. In the prefectures of Attica and Cyclades, a total of 8.531 students graduated ([Greek Statistical Authority, 2024](#)). 180 graduate questionnaires were collected. This number corresponded to 2.44% of the total population.

#### 2.4. The Structure of Questionnaires

The survey was conducted from 04/2019 to 04/2021. During the study, research teams were asked to complete appropriately structured 30-question questionnaires. The questionnaires contained common questions in order to be able to make comparisons between populations and to understand the degree of satisfaction with S.V.G. provided by the school. In writing the questionnaires, clear closed-ended questions were used, using simple language and having appropriate explanations ([Papanastasiou & Papanastasiou, 2014](#)).

In terms of structure, the questionnaires consisted of three parts:

- 1<sup>st</sup>: Demographics.
- 2<sup>nd</sup>: Satisfaction questions regarding the quality of education provided by the school.
- 3<sup>rd</sup>: Satisfaction questions around S.V.G.

Responses were given on a ten-point Likert scale, graded with “1” corresponding to “not at all satisfied” and “10” corresponding to “completely satisfied”. The questionnaires took about 15 minutes to complete. Where necessary, the Likert scale was converted into a three-point scale with values from “1 - 4” corresponding to “not at all satisfied”, “5 - 6” to “satisfied” and “7 - 10” to “completely satisfied”. The questionnaires in the pilot phase were distributed to 10 students and 10 teachers. They were answered in the presence of the researcher after the necessary clarifications were made. Data were collected either directly in the Lime Survey or in paper form.

#### 2.5. Statistical Analysis

Data were analyzed using SPSS 29.0 (academic license). The analysis includes:

- 1) Descriptive statistical analysis to calculate mean and percentages of variables



(Vetter, 2017).

2) Checking the reliability of the measurement scale with the reliability index Cronbach's Alpha (Iseris, 2016).

3) Chi-square test to check the correlation of the variables with the variable concerning the research question. The test was carried out with the correlation coefficient Kendall's Tau b (Emerson, 2017).

4) Normality check using Kolmogorov-Smirnov and Shapiro-Wilk test (Heliotis, 2015; Sedgwick, 2010).

5) Two-way ANOVA. It was checked if the independent variables (teachers, pupils, graduates, and adult students), affect the dependent variables (quality indicators) concerning the research question (Hitti et al., 2022).

St. Post Hoc Test with (L.S.D.) to check between which population groups there was a statistically significant difference in responses (Papakonstantinou, 2024).

## 2.6. Limitations of the Study

Methodological limitations related to sample size, lack of prior research on the topic, as well as time and bias limitations were presented (Dhanya, 2023). The ideal would be to collect as many questionnaires as possible from all the population groups of the survey. To graduates who could not directly access the population, 700 questionnaires were sent by e-mail but only 180 people fully participated in the survey. An attempt was made to apply a proportional division between the strata of research for teachers, pupils and adult students. It was found that the numbers of the samples concerning the prefecture of Cyclades were so small that their opinions were not heard compared to the opinions of all those of Attica. In addition, several statistical tests required a larger sample size to ensure the reliability of the research. During the literature review, there was a lack of topics related to C.V.O., and how it works among the four different population groups, so the results could not be compared with the results from the international literature. The time constraints that existed did not concern the researchers or the education structures, but all the education systems worldwide. The research started shortly before the onset of the pandemic (suspension of schools) and ended with the reopening of these structures. In addition, there was a bias in the answers given because there is an impression for years that the S.V.G. is not taught in schools as it should be (O.E.C.D., 2004).

## 3. Results

### 3.1. Descriptive Statistics

The results of the descriptive analysis concerning the values of the sample means are gathered in **Table 1**. The participants' satisfaction rates are presented in **Table 2**.

**Table 1** is structured in such a way that the reader can easily check and compare the average values of the participants' opinions (satisfaction scores) of the research groups.

**Table 1.** Descriptive statistics of four different groups (difference through values) for indicators concerning S.V.G. and Tow-Way ANOVA values presentation.

Variables of quality	Average of the views of the research groups					Tow-Way ANOVA	
	Teachers	Students	Graduates	Adult Students	Average	Sig.	Post Hoc Test L.S.D. Sig.
S1 Adequacy of S.V.G. teachers' knowledge.	6.79	5.89	6.68	-	6.31	<0.001	<0.001 T-S S-G
S2 S.V.G. and its contribution to the choice of profession.	6.98	6.30	6.74	5.23	6.28	<0.01	<0.001 T-S T-AS G-AS AD-S
S3 Satisfaction with the teaching of S.V.G.	-	5.67	6.06	-	5.76	0.119	-
S4 Quality of education affects the choice of school.	-	6.83	7.17	5.94	6.61	<0.001	<0.001 S-AS G-AS
S5 Cooperation and support of the school by (I.A.C.S.C.).	6.16	-	-	-	6.16	-	-
S6 Sufficient information of the students from previous stage of education.	7.34	-	-	-	7.34	-	-
S7 Satisfaction from the S.V.G. provided by the school (Sufficient information for professional development).	7.62	6.09	6.79	5.03	6.32	<0.001	<0.001 T-S T-G T-AS G-S AS-S G-AS

**Table 2.** Correlation table of responses for all variables and all categories of respondents. Descriptive statistics (participants satisfaction rates).

Variables of quality	School Vocational Guidance (S.V.G.)												Total positive responses
	Teachers			Students			Graduates			Adult Students			
	Little	Enough	Very	Little	Enough	Very	Little	Enough	Very	Little	Enough	Very	
S1 Adequacy of S.V.G. teachers' knowledge.	8.9%	27.7%	63.4%	23.1%	31.8%	45.1%	9.4%	35%	55.6%	-	-	-	59.50%
S2 S.V.G. and its contribution to the choice of profession.	6.8%	29.1%	64.1%	18.5%	29.8%	51.7%	15%	25%	60.0%	34%	27.6%	38.4%	58.60%
S3 Satisfaction with the teaching of S.V.G.	-	-	-	26.1%	31.5%	42.4%	17.2%	36.7%	46.1%	-	-	-	44.25%
S4 Quality of education affects the choice of school.	-	-	-	12.6%	27.1%	60.3%	7.2%	25%	67.8%	20.9%	30.8%	48.3%	58.80%
S5 Cooperation and support of the school by (I.A.C.S.C.).	16%	33.2%	50.8%	-	-	-	-	-	-	-	-	-	50.80%

Continued

<b>S6 Sufficient information of the students from previous stage of education.</b>	7.3%	20.7%	72.0%	-	-	-	-	-	-	-	-	-	72.00%
<b>S7 Satisfaction from the S.V.G. provided by the school (Sufficient information for professional development.</b>	3.7%	18.3%	78.0%	15.7%	35.9%	48.5%	13.9%	18.3%	67.8%	34.3%	28.2%	37.5%	57.95%

The last two columns in **Table 1** are for Two-Way ANOVA to check:

1) The coefficient of importance (Sig.) regarding the effect of the independent variables (teachers, pupils, graduates, adult students) on the dependent ones (quality indicators of the S.V.G.).

2) The coefficient of significance (L.S.D. Sig.) concerning the statistically significant difference of the mean values of the opinions of the research groups.

In the last column where: “T: Teachers”, “S: Students”, “G: Graduates”, “A.S: Adult Students”. Therefore, when the table shows the notation: “T-S” then there was a statistically significant difference in the average values between Teachers and Students. It applies to the remaining observations.

### 3.2. Reliability Check

The reliability coefficient (Cronbach’s alpha) was determined in order to check if the questions present a high coherence among themselves (Markos, 2012). **Table 3** shows that the reliability indices were high for all categories of respondents and for all axes of questions. Cronbach’s alpha values range from 0.732 to 0.958. High values of the index mean that the questionnaires fulfill the purpose for which they were constructed.

**Table 3.** Cronbach’s alpha reliability coefficient values.

Questionnaire parts	Questions Axes	Participant Groups			
		Teachers	Students	Graduates	Adult Students
Part 1	Demographic characteristics	-	-	-	-
Part 2	Quality indicators of the education provided by the school	0.957	0.958	0.956	0.920
Part 3	Counseling & Career Guidance Indicators, C.V.O.	0.759	0.803	0.859	0.732

### 3.3. Chi-Square Test

It was carried out to check the correlation of the quality indicators with the variable concerning the research question (Satisfaction with the S.V.G. provided by the school). The values of the Chi-square test for the quality indicators concerning: 1) the degree of satisfaction with the S.V.G. provided by the school (S7) and

2) the contribution of the S.V.G. to the choice of profession (S2) are presented as an example in **Table 4** while the values for all other indicators are gathered in **Table 5**.

**Table 4.** Frequency distribution table of the responses of the four research groups for the degree of satisfaction with the S.V.G. provided by the school (S7) and satisfaction with the contribution of the S.V.G. to the choice of profession (S2).

Variables Index of quality		VAR S7 Degree of satisfaction with the S.V.G. provided by the school (Sufficient information for professional development)															
		Teachers				Students				Graduates			Adult students				
		Little	Enough	Very	<i>p</i> -value Kendall's tau-b.	Little	Enough	Very	<i>p</i> -value Kendall's tau-b.	Little	Enough	Very	<i>p</i> -value Kendall's tau-b.	Little	Enough	Very	<i>p</i> -value Kendall's tau-b.
<b>VAR S2</b>	<b>Little</b>	1.0%	1.0%	4.7%		7.4%	6.7%	4.4%		8.3%	2.8%	3.9%		21.5%	7.0%	5.5%	
<b>The contribution of S.V.G. to the choice of profession</b>	<b>Enough</b>	1.0%	9.7%	18.3%	<0.001	4.0%	15.3%	10.4%	<0.001	3.3%	8.3%	13.3%	<0.001	6.4%	11.0%	10.2%	<0.001
	<b>Very</b>	1.6%	7.6%	<b>55.0%</b>		4.2%	13.8%	<b>33.7%</b>		2.2%	7.2%	<b>50.6%</b>		6.4%	10.2%	21.8%	

**Table 5.** Correlation of the quality indicators (*p*-value) with the research question (Chi-square test). Presentation of Tow-Way ANOVA values for the effect of the opinions of the research groups on the indicators (Sig.).

Variables Quality indicators	Degree of satisfaction with the C.V.O. provided by the school. (Sufficient information)									
	Teachers	<i>p</i> -value Kendall's tau-b	Students	<i>p</i> -value Kendall's tau-b	Graduates	<i>p</i> -value Kendall's tau-b	Adult Students	<i>p</i> -value Kendall's tau-b	Two-Way ANOVA Sig.	
<b>A2.6 Adequacy of teachers' knowledge in the theoretical courses of the specialty.</b>	74.6%	0.230	41.4%	<0.001	65.6%	0.029	33.7%	<0.001	<0.001	
A large percentage of teachers (74.6%) and graduates (65.6%) claimed that teachers had a significant degree of proficiency in their knowledge. Only (41.4%) of students and (33.7%) of adult students supported the same opinion. <i>The adequacy of the theoretical knowledge of teachers affects the opinion of the research groups on the choice of profession (p &lt; 0.001).</i>										
<b>A2.7 Adequacy of teachers' skills in the laboratory courses of the specialty.</b>	71.8%	0.021	40.6%	<0.001	66.1%	0.002	35.2%	<0.001	<0.001	
A large percentage of teachers (71.8%) and graduates (66.1%) claimed that teachers had a significant degree of proficiency in the skills required to teach laboratory courses. Only 40.6% of students and 35.2% of adult students supported the same opinion. <i>The adequacy of teachers' skills affects the research groups' view of career choice (p &lt; 0.001).</i>										
<b>A2.11 Implementation of educational programs and visits by experts within the school.</b>	12.6%	<0.001	24.4%	<0.001	33.3%	0.006 0.003	21.2%	<0.001	<0.001	
A small percentage of teachers (12.6%), students (24.4%) and adult students (21.2%) supported that educational programs and visits by experts within the school are carried out. <i>The implementation of educational programs and visits by experts in the school affects the opinion of the research groups on the choice of profession (p &lt; 0.001).</i> The opinion of the few visits by specialists in the school area is supported in a related research (Trachalios, 2010).										
<b>A2.13 Adequacy of training in the current developments of the profession.</b>	31.7%	<0.001	Only 30.1% of teachers reported adequate training in current developments in the profession.							
<b>A3.5 Carrying out educational visits to vocational premises.</b>	47.4%	0.004	14.3%	<0.001	37.8%	<0.001	9.0%	<0.001	<0.001	

## Continued

47.4% of the teachers and 37.8% of the graduates claimed that educational visits were carried out in professional premises in contrast to 14.3% of the students and 9% of the adult students. *Making educational visits to professional sites affects the opinion of the research groups on the choice of profession* ( $p < 0.001$ ). The view of few visits to professional spaces is supported by relevant research (Trachalios, 2010).

<b>A3.8 Participation in actions like Erasmus+.</b>	50.5%	0.094	29.6%	0.202	21.1%	0.175 0.016	9.6%	<0.001	<0.001
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50.5% of teachers and 29.6% of students, 9.6% of adult students and 21.1% of graduates stated that their school participates in Erasmus+ programs. *Participation in actions such as Erasmus+ influences the opinion of the research groups on the choice of profession* ( $p < 0.001$ ). Through Erasmus+, the professional improvement of the student is achieved (Mizikaci & Arslan, 2019).

<b>A3.9 Offer of motivation to students.</b>	36.6%	<0.001	27.9%	0.000	37.2%	0.003	22.7%	<0.001	0.113
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The research groups responded in percentages ranging from 22.7% to 37.2% that incentives were provided to students. *The offer of incentives does not affect the research groups' opinion of career choice* ( $p = 0.113$ ). Corresponding research showed that while motivation does not affect the choice of profession, it contributes to the degree of satisfaction of students (Pablo-Lerchundi, Núñez-del-Río, & González-Tirados, 2015). In addition, professional activity is influenced by various conditions but is not always linked to personal motivation (Veipa & Kozlovska, 2013).

<b>A4.7 Correlation of training manuals with the requirements of the profession.</b>	20.7%	0.004	33.5%	<0.001	54.4%	<0.001	32.8%	<0.001	<0.001
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Only 20.7% of teachers, 33.5% of students and 32.8% of adult students were satisfied with the correlation of the books with the specialty. *Correlating textbooks with occupational requirements influences the research groups' opinion of occupational choice* ( $p < 0.001$ ).

<b>B4 Collaboration between schools and employers.</b>	24.1%	0.001	16.5%	<0.001	30.6%	<0.001	17.4%	<0.001	0.027
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24.1% of teachers, 16.5% of students and 17.4% of adult students reported that the school cooperates with local employers. *The school's collaboration with employers influences the research groups' opinion of career choice* ( $p = 0.027$ ). While there are benefits to the collaboration of employers and schools, there are different goals and this is a barrier to collaboration between them (Maleszyk, 2018).

<b>B10 Providing psychologist assistance for integration and problem solving.</b>	43.5%	0.001	13.8%	0.026					<0.001
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43.5% of teachers and 13.8% of students reported that psychologists contribute to schools, solve complex problems and integrate students into society. *The help of a psychologist affects the opinion of the research groups on the choice of profession*, ( $p < 0.001$ ). Research has shown that students unconsciously choose their profession from experiences. The psychologist plays a significant role in this (Malach-Pines & Yafe-Yanai, 1999).

<b>B12 Significant degree of help from parents to achieve children's goals.</b>	-		38.0%	<0.001	53.9%	0.005	27.6%	0.001	0.118
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38% of students and 27.6% of adult students reported that their parents helped them achieve their goals. *The contribution of the parents does not affect the opinion of the research groups on the choice of profession* ( $p = 0.118$ ). The results of the research differ compared to the results of a corresponding research that reported that guardians influenced their children's career decision (Dick & Rallis, 1991).

<b>C10 Provision of assistance in the course by experienced working students.</b>	59.0%	0.034		-			32.6%	<0.001	0.162
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59% of teachers and 32.6% of adult students reported that experienced working students enhance the lesson. *Assistance from experienced working students does not affect the research groups' opinion of career choice* ( $p = 0.162$ ).

<b>C16 Clarity of curriculum and profession objectives.</b>	53.4%	0.166	Only 53.4% of teachers reported clarity between the goals of the curriculum and the profession.						
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## Continued

<b>D3 Completeness of the curriculum in terms of the skills of the profession.</b>	48.7%	0.004	48.7% of the teachers reported that the curriculum includes all the skills of the profession.						
<b>D7 Enhancing the emotional maturity of students within the school.</b>	59.4%	<0.001	29.0%	<0.001	53.9%	<0.001	29.7%	<0.001	<0.001
59.4% of teachers, 29% of students, 53.9% of graduates and 29.7% of adult students reported that the school helped them mature emotionally. <i>The emotional maturity of the students affects the opinion of the research groups on the choice of profession</i> , ( $p < 0.001$ ). The same result is supported by recent research (Maharini Oktavia & Kurniawan, 2024).									
<b>D11 Readiness to exercise a profession.</b>	31.4%	<0.001	33.0%	<0.001	42.8%	<0.001	27.3%	<0.001	<0.001
31.4% of teachers, 33% of students, 42.8% of graduates and 27.3% of adult students reported that they were ready to practice the profession. <i>The readiness of the research groups to practice a profession after graduation affects their opinion on the choice of profession</i> ( $p < 0.001$ ). C.V.O. is a tool that facilitates the undertaking of professional activities for adults, (Veipa & Kozlovska, 2013).									
<b>D13 Absorbability of graduates in the labor market.</b>	30.4%	<0.001	35.0%	<0.001	38.9%	<0.001	30.5%	<0.001	<0.001
30.4% of teachers, 35% of students, 38.9% of graduates, and 30.5% of adult students claimed that they were absorbed by the labor market. <i>The absorbability of graduates in the labor market affects their opinion on the choice of profession</i> ( $p < 0.001$ ). In a study conducted in New York it was stated that the accessibility of learning and the absorbability of students in the labor market are decisive factors for the choice of vocation (Phillips et al., 2002).									
<b>D14 Vesting of professional rights.</b>	37.7%	0.006	31.1%	<0.001	46.7%	<0.001	29.9%	<0.001	<0.001
37.7% of teachers, 31.3% of students, 46.7% of graduates, and 29.9% of adult students argued that professional rights are fully guaranteed. <i>The vesting of the professional rights of the research groups affects their opinion on the choice of profession</i> , ( $p < 0.001$ )									
<b>D15 Connection of school with the labor market.</b>	27.0%	<0.001	25.8%	<0.001	34.4%	<0.001	23.8%	<0.001	0.084
27% of teachers, 25.8% of students, 34.4% of graduates and 23.8% of adult students argued that the school was connected to the labor market. <i>The connection between school and labor market does not affect the opinion of the research groups on the choice of profession</i> ( $p = 0.084$ ). However, the importance of connecting school and the labor market is mentioned in related research (Dougherty & Lombardi, 2016). The cooperation between them strengthens the professional education (Maleszyk, 2018).									

The majority of the research groups were satisfied with the S.V.G. provided by the school and the information they received. At the same time, all those who were satisfied with the S.V.G. expressed the opinion that it helped them in choosing a profession. Kendall's tau-b correlation coefficient showed a high correlation between quality indicators and research groups. Responses are statistically significant at a significance level of  $p < 0.001$ . By applying an additional 22 similar tables, **Table 5** was created for the remaining questions concerning the quality of C.V.O.

### 3.4. Normality Check

The test was carried out using the Kolmogorov-Smirnov and the Shapiro-Wilk test. It was found that most variables follow the normal distribution with  $p > 0.05$ . According to the Central Limit Theorem, if the random variables ( $X_1, X_2, \dots, X_n$ ) are independent and equal to  $E(X_i) = \mu$ ,  $V(X_i) = \sigma^2 < \infty$ ,  $i = 1, 2, \dots, n$ , then, the random variable asymptotically follows for large  $n$  (typically equal to or greater than 30) the standard normal distribution  $N(0, 1)$ .

$$Z = \frac{\sum_{i=1}^n X_i - n \cdot \mu}{\sqrt{n \cdot \sigma^2}}$$

Therefore, in our research, we can consider that the rest of the distributions also approach the normal ones.

### 3.5. Two-Way ANOVA

It was checked whether the independent variables (teachers, students, graduates and adult students), affect the dependent variables (quality indicators) concerning the research question (**Table 1**). The results of the Two-Way ANOVA (Tests of Between-Subjects Effects) are presented in the column (Sig.) of **Table 1**. The following is an interpretation of the variable VAR S2, which concerns the S.V.G., and its contribution to the choice of profession. The level of study (students, adult students), the age (students, graduates), and the status of the participants (teachers, students, graduates) influence the opinion that S.V.G. contributes to the choice of profession. The effect was statistically significant ( $p < 0.001$ ) (**Table 1**).

#### St. Post Hoc Test and use of Least Significant Difference (L.S.D.)

It was tested whether the differences in the mean values of the views of the four independent populations were statistically significant. Control assumes normality and common dispersion of the populations.

Kolmogorov-Smirnov and Shapiro-Wilk tests were used for the normality of the distributions. The distributions approximate normal. A small deviation from normality does not significantly affect the use of the ANOVA test and does not affect the type I error rates (Sedgwick, 2010).

Levene's test was performed to determine the equality of the population's dispersion. The non-significance of Levene's test ( $p > 0.05$ ) led to the conclusion that the variances were homogeneous and the ANOVA analysis can be used (Siomkos & Vassilikopoulou, 2005).

#### *Comparison of the means of two independent populations.*

For the variable concerning teachers' knowledge in S.V.G., (VAR S1),  $p < 0.001$  applies. Therefore, we reject the null hypothesis.

The sample means of the populations differ significantly were a difference between: 1) teachers, they rated their knowledge in S.V.G. with (6.79/10) and students, they rated the knowledge of teachers with (5.89/10), 2) students and graduates, the former rated the knowledge of teachers with (5.98/10) while the latter with (6.68/10), **Table 1**. A similar analysis followed for the remaining variables.

## 4. Conclusion

VAR S1. The average of the adequacy of teachers' knowledge in S.V.G. was (6.31/10). From the ANOVA analysis (**Table 1**), it was shown that the adequacy of teachers' knowledge in S.V.G. affected the degree of satisfaction of the research groups ( $p < 0.001$ ). The partial analysis showed that there was a statistically significant difference between the average values of satisfaction with the adequacy of



knowledge mainly between teachers (6.79/10) and students (5.89/10), **Table 1**. Teachers were more satisfied with their knowledge of S.V.G. (63.4%) compared to students (45.1%), **Table 2**. The demographic characteristics of the population show that 10.5% of all those who teach it have substantial knowledge of S.V.G. In addition, those who were satisfied with the S.V.G. provided by the school were also satisfied with the teachers' knowledge of S.V.G. subjects  $p < 0.001$ , **Table 5**.

*The teachers possibly overestimate their abilities, hence the small percentage of students' satisfaction with the teachers' competence in S.V.G.*

*Counselors must have knowledge, values, attitudes and skills in the field of counseling (Suryono, 2016). Corresponding research reported that most teachers do not have the necessary skills to perform coaching practices (Torunoğlu & Gençtanırım, 2015).*

VAR S2. The average value of the satisfaction regarding the help of the S.V.G. in choosing the profession was (6.28/10). From the ANOVA analysis (**Table 1**), it was shown that the contribution of S.V.G. to the choice of profession affected the degree of satisfaction of the research groups ( $p < 0.001$ ). The partial analysis showed that there was a statistically significant difference between the average satisfaction values. A greater difference exists between teachers (6.98/10) and adult students (5.23/10), **Table 1**. Teachers (64.1%) were more satisfied with the help of S.V.G. in choosing a profession compared to adult students (38.4%), **Table 2**. In addition, those who were satisfied with the S.V.G. provided by the school were also satisfied with the contribution of the S.V.G. to the choice of profession,  $p < 0.001$ , **Table 5**.

*The percentages of those satisfied with the contribution of S.V.G. in choosing a profession must increase. Otherwise, S.V.G. does not satisfy the purpose of its existence.*

*Gilkey as early as 1965 emphasized the importance of S.V.G. in choosing a profession and referred to its inclusion as a subject in schools (Gilkey, 1965).*

VAR S3. The average value of satisfaction with the teaching of S.V.G. was (5.76/10).

From the ANOVA analysis (**Table 1**), it appeared that the satisfaction or not of the research groups does not affect the teaching of S.V.G. ( $p = 0.119 > 0.001$ ). The partial analysis showed that there was no statistically significant difference in the mean satisfaction values between the research groups. Graduates (46.1%) compared to students (42.4%), show a higher percentage of satisfaction with the teaching of S.V.G. (**Table 2**). In addition, those who were satisfied with the S.V.G. provided by the school were also satisfied with the S.V.G., teaching.  $p < 0.001$ , **Table 5**. The percentage of satisfaction with the teaching of S.V.G. was not satisfactory. In other E.U. countries, this percentage does not apply. Contemporary research conducted in Germany reported increased student satisfaction with conducting S.V.G. (Attaphut & Wongkungwan, 2020).

VAR S4. Between quality of education and choice of school type, the research groups put an average value (6.61/10). From the ANOVA analysis (**Table 1**), it

was shown that the quality of education affected the degree of satisfaction of the research groups and the type of school they will finally choose ( $p < 0.001$ ). The partial analysis showed that there was a statistically significant difference between the average of satisfaction values between students (6.83/10)—adult students (5.94/10) and graduates (7.17/10)—adult students (5.94/10).

The biggest difference was between the graduates and the adult students, **Table 1**. 60.3% of the students and 67.8% of the graduates argued that the quality of education is inextricably linked to the choice of school. The percentage of adult students that supported this opinion was significantly lower, **Table 2**. In addition, those who were satisfied with S.V.G. (37.2% of students, 57.2% of graduates, and 29.4% of adult students) believed in the interaction of education quality and the choice of school type,  $p < 0.001$ , **Table 5**.

*Many factors influenced students' career choice decisions, such as personal, social and economic reasons (Aspden et al., 2015). The quality of education provided in schools influences students' choice between general or vocational education and consequently the choice of profession. Corresponding research reported the relationship between quality and satisfaction from the studies provided (Pablo-Lerchundi, Núñez-del-Río, & González-Tirados, 2015).*

VAR S5. The teachers rated the cooperation and ultimately the support of the school by the (I.A.C.S.C.) with (6.16/10), **Table 1**. 50.8% of the teachers were satisfied with the help provided by the (I.A.C.S.C.), **Table 2**. In addition, those who were satisfied with the S.V.G. provided by the school (44.2%) were also satisfied with the contribution of (I.A.C.S.C.) to the school,  $p < 0.001$ , **Table 5**.

*Career counselors (experts and teachers) can rely on (I.A.C.S.C.), so that they can be informed about matters concerning the C.V.O.*

*At international level, teachers are informed about C.V.O. issues by official bodies (Veipa & Kozlovská, 2013) and through electronic platforms (Harsani, Erniyati, & Kurnia, 2022). In Greece we expect corresponding programs to be implemented according to recent announcements by the Ministry of Education (Ministry of Education, 2024).*

VAR S6. The teachers rated the information of their high school students on S.V.G. issues with (7.34/10), **Table 1**. 72% of the teachers were satisfied with the information provided to the students on S.V.G. issues at a previous level of education **Table 2**. In addition, those who were satisfied with the S.V.G. provided by the school (64.1%) were also satisfied with the information provided to students at a previous level of education (high school),  $p < 0.001$ , **Table 5**.

*Dealing with C.V.O. is especially important for high school students because they are entering a period of their lives where they are looking for career information and realizing their professional interests (Witko, Bernes, Magnusson, & Bardick, 2005).*

VAR S7. The average value of the satisfaction regarding the students' information about their professional development was (6.32/10). From the ANOVA analysis (**Table 1**), it was shown that informing students about their professional

development affects the degree of satisfaction of the research groups ( $p < 0.001$ ). The partial analysis showed a statistically significant difference between the mean satisfaction values of the participants. The difference was greater between teachers (7.62/10) and students (6.09/10), graduates (6.79/10) and adult students. (5.03/10), **Table 1**. Teachers (78%) are more satisfied with the information about the professional development of the students compared to the adult students. (37.5%), **Table 2**.

*In order to provide complete information to the students regarding their professional development, counseling teachers must take into account the students' personal characteristics. The working life is satisfactory only when the characteristics of the person are identified with the characteristics of the vocation (Kunnen, 2014).*

From the Chi-square test, it was found that all those who were satisfied with the S.V.G. provided by the school, at the same time supported the following indicators with the corresponding percentages (**Table 5**). (The degree of satisfaction was interpreted as the degree of quality of the C.V.O. services provided).

In summary, we can mention that the S.V.G. helps in choosing a profession (S2). The teachers of C.V.O. have to inform themselves about matters concerning the S.V.G. (S1), improve the way the course is taught, so that it becomes more attractive (S3) and thoroughly inform the students about vocational rehabilitation and professional possibilities they have (S7). The S.V.G. of students begins with great success in an earlier level of education (high school) (S6). Discussions, at this level, related to the quality of education influence their views on the type of education (general or vocational) they will follow (S4). Counseling support centers strengthen the whole process (S5). S.V.G. and strengthening the profession through theoretical knowledge (A2.6) and skills (A2.7) of teachers are directly intertwined.

Specialization teachers should try to improve knowledge and skills (A2.7) (A2.8) in order to inspire students to choose the profession. Unfortunately, no training is carried out in the current developments of the teaching profession of the specialty (A2.13). Educational programs and visits by experts and professionals to the school must be increased (A2.11). The lack of educational visits to professional premises is a thorn in the side of professional education and is reflected by the small percentage of satisfaction of the research groups (A3.5). Through S.V.G. business visits should be organized and not just taught as a course in a theoretical framework. School-employer cooperation must be strengthened in order to prepare students to practice the profession upon completion of their studies (B4). In recent times, honorable efforts have been made to connect schools with the labor market through the institution of apprenticeship (D15). The correct information from S.V.G. increases the assimilation rates of graduates in the labor market. However, the absorbability of graduates in the labor market must be increased (D13). The incomplete vesting of professional rights affects people in choosing a profession (D14). The manuals of the technical courses do not cover the

requirements of the vocation (A4.7). The curriculum includes the skills of the specialty (D3). The degree of clarity between curriculum objectives and skills of the profession must be increased (C16), otherwise the outlines of the professions taught in S.V.G. will be unrelated to what is taught in school. In addition, skills that are not listed in the syllabus or not completed during the school year limit students' image of the profession. Unfortunately, the research groups reported that upon completion of their studies, they were not ready to practice the profession they studied (D11). Through Erasmus+, the training of individuals, mobility and the exchange of knowledge and skills between E.U. member countries are promoted (A3.8). The teachers believe that the psychologist helps in integrating the students and solving their problems. The students have a different point of view and do not support the role of the psychologist as much as one might expect (B10). While students' maturity influences career choice (D7), parental support (to achieve students' goals) does not influence career choice (B12). The lack of motivation throughout the educational community must be addressed immediately (A3.9), even though it is not directly related to the choice of vocation. In the framework of the S.V.G. motivational ways to enhance interest in the lessons should be discussed.

## 5. Discussion

Through the research, the quality of the C.V.O. provided by the schools was examined and the variables that affect and influence the choice of vocation were studied. A field of future research is the control for the improvement of C.V.O. quality indicators following the recent announcements by the Ministry of Education to improve and strengthen the role of counseling (Ministry of Education, 2024). Finally, at an international level, the study of more quality indicators C.V.O. and comparing the results with those of existing research is a matter of utmost importance.

## Author's Statement

I hereby declare that academic ethics are observed, supporting the rigorous style of study.

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## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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## **Abbreviations**

(C.V.O.): Counseling and Vocational Orientation; (S.V.G.): School Vocational Guidance; (S.H.V.T.): Schools of Higher Vocational Training; (V.H.S.): Vocational High Schools; (I.A.C.S.C.): Interdisciplinary Assessment, Counseling and Support Centers; (He.St.Auth.): Hellenic Statistical Authority.