

Research Articles

Lithuanian Gymnasium Students' Career Education: Professional Self-Determination Context

Vincentas Lamanauskas*^a, Dalia Augienė^a

[a] Department of Education, Šiauliai University, Šiauliai, Lithuania.

Abstract

Professional self-determination/career choice is one of the most essential things in a young human's life. Choosing a further life path is rather complicated. Self-cognition, harmony of one's abilities and desires is difficult to be achieved. It is important for the young people to choose a profession corresponding to their interests, values, inclinations. It is not less important that the work/chosen profession would have a demand in the labour market. So, professional self-determination is inseparable from the all-round and directional personality education. A representative, complex research was conducted at the beginning of 2018, in which 643 Lithuanian gymnasium 11-12 grade students participated. Applying a questionnaire as an instrument, the gathered data were analysed using measures of descriptive statistics, correlation and factor analysis. In this research, it was emphasized on how Lithuanian gymnasium students valued their future personal career, how they planned their future professional activity, and the internal structure of the career choice process was established. The most significant factors for career choice were Personal feature importance, Profession prospects, and Important people's position. The least significant factor was Coincidence factors. Some gender differences were found in significance of the factors contributing to career choice. Research results allow stating that differentiated and individualised approach remains urgent in the career education of students in the gymnasium. The role of psychologists, social workers and professional consultants working at school and its development remains very important as well.

Keywords: career education, career choice, quantitative research, factor analysis, professional self-determination

Psychological Thought, 2019, Vol. 12(2), 93–116, <https://doi.org/10.5964/psyct.v12i2.374>

Received: 2019-04-30. Accepted: 2019-07-28. Published (VoR): 2019-12-09.

Handling Editor: Marius Drugas, University of Oradea Romania

*Corresponding author at: 29 K. Donelaicio Street, LT-78115 Šiauliai, Lithuania. E-mail: vincentaslamanauskas@yahoo.com



This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 International License, CC BY 4.0 (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

International Context

Career selection (choice) is one of the most relevant choices in human life and has a big influence on the economic well-being of society. In the European Union, big attention is paid to the policy of rational use of human resources. The activity of European Lifelong Guidance Policy Network (ELGPN) which comprises 30 countries is concentrated in four priority spheres: career guidance competency development, service availability, quality guarantee, and service coordination ([European Lifelong Guidance Policy Network, 2015](#)). In the *ELGPN 2015 Report* ([European Lifelong Guidance Policy Network, 2015](#)), it is emphasised that all-round orientation attitude comprising all age groups is applied in the activity, it is sought to help people to analyse, generalise personal, educational and work information and to integrate themselves into the labour market.

The right chosen career gives the meaning to the person's life and forms preconditions for individual expression. On the contrary, the wrong and/or inadequately made career decision not only makes the person unhappy but also causes job dissatisfaction, self-unhappiness. Professional information and consultation help to solve such complicated questions as professional self-determination and career choice, introducing students to various professions and helping to better cognise oneself and to make the best career choice. Professional self-determination is one of the school graduation factors (Eisenman, 2007), therefore to develop self-determination skills is undoubtedly important. Research showed that career goal realism was related to career preparation possibilities and career goal harmony (Hirschi & Lage, 2007). A study carried out in Tanzania showed that students considered a professional image to be the most important factor making a career choice (Mugonzibwa, Kikwilu, Rugarabamu, & Ntabaye, 2000). The comparative research carried out between Latvian and UK students showed that the most relevant factors helping in a career choice were to understand one's own interests and to explore one's own possibilities (Bikse, Lūsēna-Ezera, Libkovska, & Rivža, 2018). This is completely understandable because an improper career selection turns all personal efforts and resources into an incorrect direction if this does not correlate with the expectations. The research also showed that professional self-determination was conditioned by various factors. The research performed in Malaysia showed that contextual factors (lack of examples in the family, and scarcity of career information obtained at home) affected the students' career choice (Mohd, Salleh, & Musapha, 2010). Such factors as gender, type of school, parents' education and income have a notable influence on students' career decisions/choices (Cenkseven-Önder, Kırdök, & Işık, 2010; Ekechukwu & Amaeze, 2016; Korkmaz, 2015; Lavonen et al., 2008; Ojeda & Flores, 2008).

It is obvious that there is an abundance of research in this sphere. On the one hand, quite a lot of interesting and useful results have been presented, nevertheless, a lot of fragmentary conclusions as well. Career choice / professional self-determination is a very complicated and complex process. Not all students make cognitive or thinking mistakes choosing a career, however, for the researchers it is difficult to choose, which factors affect the strongest every human's career development, especially the positive development.

National Context

In Lithuania's progress strategy "Lithuania 2030", the importance of human resources is emphasized, the role of an open, creative, responsible person is accentuated creating smart management, smart economics, and a smart society (State Progress Council, 2012). In the strategy, such values are promoted, which encourage people's consciousness and preparation for new changes. In the present social and economic transformation period, career choice becomes not an one-time self-determination act for the whole life, but a constant process. The character of this phenomenon changes – from an one-time act it becomes a continual process (Pukelis & Garnienė, 2003). According to Augienė (2009), career designing as a lifelong lasting process in the present knowledge society becomes very urgent. Career designing is related to human orientation, future plans. According to Beresnevičienė (1990), the right career choice determines a successful young person's adaptation in the working world, professional aspiration, interest, inclination and ability use in the society's useful activity. Research shows that career competence development in schools facilitates or at least partly contributes to students' understanding what profession they would like to choose (Lincevičienė, 2012). Such activities during which the students cultivate their decision-making skills are information, consultation, teaching, learning, enabling. All of them are pointed towards student's self-cognition, personal learning ability, understanding and knowledge about outer working world creation (Čiužas, Šiaučiukėnienė, Čiučiulkiene, & Augustinienė, 2006).

The research performed by career professionals on career education importance in general education schools revealed that career education had the biggest importance for students' professional self-determination formation: activity world cognition, ability to use information, foreseeing career prospects, life goal perception (Lamauskas & Augienė, 2017). Career education has also great importance for students' personality formation: self-cognition, personal feature development, and motivation formation (Lamauskas & Augienė, 2017). In order to organise and carry out career education, both student's personal abilities, personality maturity level and also external factors – career demand in the labour market, career prospects and so on have to be taken into account. Activity spaces are rather wide, and career education itself is an inseparable component of a general education process and lasts for a long time. Support for the students making a career choice is very significant (Sajienė & Antanaitienė, 2012), and the essential goal is that the students form the objective attitude towards professions and self-expression possibilities in the labour market.

In 2014, a state audit in career development sphere was carried out in Lithuania. In the audit's report, it is stated that career education nationwide has certain disadvantages and is a problematic education sphere (Valstybinio audito ataskaita [State audit report], 2014). A big part of students have never received career services in their school, or they have been insufficient. Many of them completing general education school have not yet made their professional decision or their decisions do not justify themselves later. Because of that reason, it is necessary to improve the career education system in general education schools, to create conditions for the students to better cognise themselves, their ambitions and possibilities, professions and the working world. Such a situation encourages to deeper analyse student career education problems in general education schools, and to reveal the potential that has not been used. This forms the problematic basis for the carried-out research.

Research Aim

The research aim was to ascertain how Lithuanian gymnasium students valued their future personal career, how they planned their future professional activity and to establish the internal structure of the career choice process. It is obvious that career decisions are important because they determine a further person's life.

Research Questions

The following research questions were formulated:

- What are the possible differences evaluating future/life and career planning importance depending on the respondents' gender and grade?
- Are there any differences evaluating the available plans (ideas) after completing school depending on the respondents' gender and grade?
- How do students value self-confidence and are there any differences depending on the respondents' gender and grade?
- What career activities are dominating at school and what career fields are of the most interest to the respondents?
- What is the internal structure of the career choice process?

Method

Research Design

The performed research was based on a mixed method (the quantitative and qualitative approach was used). The qualitative research part was analysed severally because such research produces “words, rather than numbers, as data analysis” (Mack, Woodson, MacQueen, Guest, & Namey, 2005, p. 2). The qualitative analysis results were published earlier (Lamanauskas & Augienė, 2018). The research was performed in the period from January to February 2018. The main idea in this research was the position that gymnasium students' opinions and evaluation research were relevant because they allowed establishing the urgent problems, clarifying the already known ones, predicting career education provided in gymnasiums' enhancement opportunities. Addressing to the participants' recommendation and perception analysis, substantiated corrections could be done in the career education process. The research gives a possibility to understand the reality that the participants can see (Kardelis, 2007), moreover, the quantitative approach is dominant due to its characteristics and strength (Eyisi, 2016).

Sample and Ethics

Carrying out a blended /mixed methods research, a broad circle of get in touch people was used, in this case, career professionals acting in Lithuanian gymnasiums. They took part in the research as the basic research data gathering contributors. They were requested to make the predetermined arrangements both with the gymnasium managers, and with the participants themselves. A total of 643 learners took part in the research (Table 1).

Table 1

Demographic Data on Research Participants

Grade	Gender, N (%)		
	Female	Male	Total
The 11 th	224 (54.2)	106 (46.1)	330 (51.3)
The 12 th	189 (45.8)	124 (53.9)	313 (48.7)
Total	413 (100)	230 (100)	643 (100)

As can be seen in the Table 1, gymnasium 11-12 grade students participated in the research, of whom 64.2% were female and 35.8% were male students. The students from 14 Lithuanian gymnasiums, operating in different Lithuanian districts, took part in the research. Pointing out to Lithuanian education management information system (Švietimo Valdymo Informacinė Sistema [Education Management Information System], 2019) in Lithuanian general education schools (gymnasiums) in the school year 2017-2018 were learning 49.481 11-12 grade students. Taking attention to the suggestions of Cohen, Manion, and Morrison (2000) for the population of 50.000, the sample of 381 respondents is quite good (with the sampling bias – 5% and reliability level – 95%). Certainly, it is suitable only when a full probability sample is used. In the current research, non-probabilistic, purposive sampling was used. Two main sample creating criteria were applied: a) exclusively gymnasium second stage grades (11 and 12) were involved in the research, b) manifold size and different geographical area gymnasiums were involved in the research (e.g., South Lithuanian, West Lithuanian, North and Middle Lithuani-

an regions). Consequently, it was considered that such a sample (643 participants) was sufficiently representative in this research and allowed making appropriate interpretations. It is underlined that conducting such a socio-educational research, rigorous fulfillment ethic rules and norms of such research are settled, which describe the participants' attendance in the research. Thus, involvement in this research was nameless and at the same time at one's discretion.

Instrument

The research instrument was a questionnaire, which was formed of open-ended and closed-ended type of questions. The following main parameters made the research instrument: a) demographic information (the respondents' gender, grade); b) career activities taking place at school (21 activities, evaluated applying a ranking scale: Often; Sometimes; Never), Cronbach's Alpha – .89; c) people, possibly making influence on a career choice (11 categories, evaluated applying a ranking scale: Important; Neither important, nor unimportant; Not important), Cronbach's Alpha – .85; d) career fields arising interest (16 fields were presented, a nominal scale was applied); e) plans after completing school (8 positions were presented, a nominal scale was applied); f) career choice (20 statements, evaluated applying a ranking scale: Agree; Partially agree; Disagree), Cronbach's Alpha – .67, see the Appendix [Table A1](#); g) other parameters (Is it important to plan your future/life? How much career planning is important? Is there a clear idea for the activity after completion the school? How valued is self-confidence?), and for the evaluation of these parameters, the data were obtained applying ranking scales; i) four open-ended questions about professional self-determination.

For designing an instrument, it was referred to the results of an earlier carried out qualitative research, in which career specialists working at schools took part (Lamauskas & Augienė, 2017). This formed conditions to extract and identify the main variables, and to form the list of 20 statements about the career choice. The instrument content validity was checked by two self-reliant professionals in a career education area.

Data Analysis

The SPSS statistics programme was applied as an instrument for data processing. Descriptive statistics measures (absolute and relative frequencies, popularity/significance indexes) were applied in order to analyse research data. To determine possible differences among variables, non-parametric chi-square (χ^2) test and multi-functional Fisher criterion ϕ were applied (Sidorenko, 2002). 20 statements were evaluated employing three ranking scales: agree, partially agree, and disagree. Later ranking measures were transformed into relative. Each statement was given the measured popularity (significance) index ($0 \leq PI/SI \leq 1$). The nearer PI/SI value to 1, the more essential, significant was the statement to the respondent or the respondent better approved of it. To determine the difference among variables, Independent Samples Test – t-test for Equality of Means was applied. To measure the relation among variables, Spearman's rank correlation coefficient rho (ρ) was used. Also, a factor analysis of 20 statements about career choice was carried out.

From methodological viewpoint, Cronbach's alpha coefficient meaning for a well-matched construct should be not less than .6 (George & Mallery, 2003), in other researchers' position, not less than .7 (Garson, 2012). In the current case ([Table 2](#)), Cronbach's alpha coefficient was bigger than .6 (close to 70%), and Spearman-Brown stepped-up reliability coefficient (in SPSS: Cronbach's Alpha Based on Standardized Items) meaning was close to Cronbach's alpha coefficient meaning, what means, that the dispersion of the answers to various questions was almost identical.

Table 2

Factorised Statements' Array Reliability

Cronbach Alpha	Cronbach's Alpha Based on Standardized Items	Statements' number
.67	.65	20

Results

Descriptive Results and Group Differences

Students' future/life planning importance in terms of the respondents' gender was analysed. The results are reported in Table 3.

Table 3

Future Planning Importance, According to Gender

Level	Gender, N (%)			$\Phi_1 - \Phi_2$	Fisher criterion	
	Female	Male	Total		$\Phi_{\text{empir.}}$	p
Yes	358 (86.7)	177 (77.0)	535 (83.2)	0.254	3.08	< .001
Difficult to say	51 (12.3)	47 (20.4)	98 (15.2)	0.22	2.67	< .001
No	4 (1.0)	6 (2.6)	10 (1.6)	0.124	1.51	= .066
Total	413 (100.0)	230 (100.0)	643 (100.0)			

Data in Table 3 indicates that the difference was statistically significant. It was much more important for the female to plan their future/life than for male, $\chi^2(2, N = 643) = 10.57, p = .005$. A hypothetical assumption can be made that female are more anxious about future perspectives, therefore they are more responsible into their future planning. Having carried out the same analysis, according to the respondents' grades, the obtained differences were statistically not significant, $\chi^2(2, N = 643) = 1.85, p < .397$. It is obvious that the age difference between 11-12 grade students was not big, therefore these students' experience, needs, and attitudes were similar, determined by the similar age and the grade did not have a main effect upon the results.

The respondents evaluated career planning importance (significance). The results are reported in Table 4.

Table 4

Career Planning Importance Evaluation

Level	Gender, N (%)			$\Phi_1 - \Phi_2$	Fisher criterion	
	Female	Male	Total		$\Phi_{\text{empir.}}$	p
Very important	190 (46.0)	61 (26.5)	251 (39.0)	0.409	4.97	< .001
Rather important	194 (47.0)	133 (57.8)	327 (50.9)	0.216	2.62	= .003
A little bit important	24 (5.8)	33 (14.3)	57 (8.9)	0.29	3.52	< .001
Not important at all	5 (1.2)	3 (1.3)	8 (1.2)	0.009	0.11	> .05
Total	413 (100.0)	230 (100.0)	643 (100.0)			

The difference, according to gender, was statistically significant at the 1% significance level (see Table 4). Career planning importance at that life stage was significantly more important for the female than for male students, $\chi^2(3, N = 643) = 29.94, p = .0001$. A hypothetical assumption can be made that female more than male students relate their future planning to a successful professional career. Therefore, one can think that because of that reason career planning was more important for the female students at this (present) life stage. Having carried out the same analysis, according to the respondents' grade, the obtained differences were not statistically significant, $\chi^2(3, N = 643) = 5.55, p = .136$. One can think that 11-12 grade students' age difference was not big and the grade did not have a main effect upon the results.

A statistically important relationship was established between future planning and career planning significance at the present life stage. Spearman's rho was sufficiently high ($\rho = 0.34$) and was significant at the .01 level (2-tailed). Analysing such a relation, according to the gender variable, the following results were obtained (Table 5).

Table 5

Future/Life Planning, Career Planning, and Self-Confidence Significance Relationship in Terms of Gender

Variables	Female	Male	Cohen's q
Future/life planning importance	$N = 413, \rho = .288$	$N = 230, \rho = .377$	0.1
Career planning importance at this life stage			Small effect
Future/life planning importance	$N = 413, \rho = .331$	$N = 230, \rho = .129$	0.214
Self-confidence			Small effect

It can be seen in Table 5 that the relationship between two variables statistically significantly differed, according to the gender variable. Future/life and career planning at this life stage were closely related for male students. In the female sample, such a relationship was weaker. A small effect size was indicated (Lenhard & Lenhard, 2016). Whereas, personal self-confidence and the importance of future/life planning were significantly closer related in the female than in the male sample (see Table 5). The research revealed that female self-confidence was lower than male self-confidence (see Table 7). Therefore, a hypothetical assumption can be made that female feel more unsafe, worry about their future perspectives, do not know if they will get through the forthcoming changes in their life, therefore their attention is more concentrated into future/life planning (see also Table 3).

Having a clear future idea (perspective) is a very important career choice aspect. The results are reported in Table 6.

The obtained gender difference in perspective after leaving school was statistically significant (see Table 6). The male students had a clearer idea than the female students about the type of activity after leaving school, $\chi^2(2, N = 643) = 11.82, p = .003$. As male students trusted themselves more than female students (see Table 7) therefore, an assumption could be made that they easier and quicker solved career choice problems. Having analysed the possible differences in perspective after leaving school, according to the respondents' grade, these differences were not statistically significant, $\chi^2(2, N = 643) = 4.76, p = .092$. It is obvious that 11-12 grade students' age difference was not big and the grade did not have a main effect on the results.

Table 6

Idea/Perspective After Leaving School

Level	Gender, N (%)			$\Phi_1 - \Phi_2$	Fisher criterion	
	Female	Male	Total		$\Phi_{\text{empir.}}$	p
Yes, they exactly know what would like to do	122 (29.5)	86 (37.4)	208 (32.3)	0.168	2.04	= .021
Not very much, they have a few ideas, but they can change	264 (63.9)	117 (50.9)	381 (59.3)	0.264	3.21	< .001
No, they really do not know what would like to do	27 (6.5)	27 (11.7)	54 (8.4)	0.182	2.21	= .013
Total	413 (100.0)	230 (100.0)	643 (100.0)			

Career planning is undoubtedly related to self-confidence. The respondents' self-confidence evaluation results regarding gender are reported in [Table 7](#).

Table 7

Students' Self-Confidence Evaluation

Level	Gender, N (%)			$\Phi_1 - \Phi_2$	Fisher criterion	
	Female	Male	Total		$\Phi_{\text{empir.}}$	p
High	73 (17.7)	73 (31.7)	146 (22.7)	0.328	3.98	< .001
Average	294 (71.2)	135 (58.7)	429 (66.7)	0.263	3.20	< .001
Low	46 (11.1)	22 (9.6)	68 (10.6)	0.049	0.60	> .05
Total	413 (100.0)	230 (100.0)	643 (100.0)			

Statistically significant differences in female and male students' self confidence were ascertained (see [Table 7](#)). The male students' self-confidence was statistically significantly higher than female, $\chi^2(2, N = 643) = 16.67$, $p < .001$. However, the differences in evaluation of self-confidence, according to the grade, were statistically non-significant, $\chi^2(2, N = 643) = 2.72$, $p = .256$. It is obvious that 11-12 grade students' age difference was not big and the grade did not have a main effect on the results.

The respondents' positions about having the main career plan after leaving school were analysed. It can be seen in [Table 8](#) that 21.9% of the respondents gave the priority to studying in the college and 21.0% - in a less prestigious/competitive university. The least number was of those, going to continue their studies in the vocational school. The answers regarding the main career plan after leaving school, according to the respondents' gender, statistically significantly differed, $\chi^2(7, N = 643) = 23.74$, $p = .001$. One can see that the female students had higher expectations. More female than male students planned to choose a very prestigious / competitive university (female -19.4%, male - 15.7%), to study abroad (female - 14.3%, male - 11.7%). However, significantly more male (12.2%) than female (3.9%) students stated that they had not thought yet what to do after finishing school. More male (8.7) than female (5.1%) students were going to work after finishing school. Analogical differences, according to the grade, were not indicated, $\chi^2(7, N = 643) = 2.78$, $p = .905$. It is obvious that 11-12 grade students' age difference was not big and the grade did not have a main effect on the results.

Table 8

The Main Plan (Plan A) After Leaving School

Plan	Gender, <i>N</i> (%)			Fisher criterion		
	Female	Male	Total	$\Phi_1 - \Phi_2$	$\Phi_{\text{empir.}}$	<i>p</i>
Enter the college	101 (24.5)	40 (17.4)	141 (21.9)	0.175	2.13	= .016
Enter a slightly less prestigious / competitive university	85 (20.6)	50 (21.7)	135 (21.0)	0.027	0.32	> .05
Enter a very prestigious / competitive university	80 (19.4)	36 (15.7)	116 (18.0)	0.097	1.18	> .05
Study abroad	59 (14.3)	27 (11.7)	86 (13.4)	0.078	0.95	> .05
Enter less prestigious / competitive universities (i.e., where it is easier to get)	39 (9.4)	20 (8.7)	59 (9.2)	0.024	0.31	> .05
I have not thought yet what to do after leaving school	16 (3.9)	28 (12.2)	44 (6.8)	0.316	3.84	< .001
Work after leaving school	21 (5.1)	20 (8.7)	41 (6.4)	0.143	1.74	= .041
Enter a vocational school	12 (2.9)	9 (3.9)	21 (3.3)	0.056	0.68	> .05

It was analysed what career activities were taking place at school. The obtained distribution is reported in Table 9.

Table 9

Career Activities at School

Statement	Often	Sometimes	Never	<i>SI</i>
Proposed to do various tests	273 (42.5)	318 (49.5)	52 (8.1)	.67
Provided information about career preparation	216 (33.6)	366 (56.9)	61 (9.5)	.62
Helped to cognise personality features, interests, skills, abilities and their relationship with career	215 (33.4)	339 (52.7)	89 (13.8)	.60
Trips organised to higher schools, study fairs, open door days in various education institutions	203 (31.6)	363 (56.5)	77 (12.0)	.59
Provided individual consultations	195 (30.3)	361 (56.1)	87 (13.5)	.58
Presented useful internet links	197 (30.6)	348 (54.1)	98 (15.2)	.58
Provided support planning the individual career steps	201 (31.3)	333 (51.8)	109 (17.0)	.57
Organised meetings with various profession representatives	148 (23.0)	421 (65.5)	74 (11.5)	.56
Organised various events related to career education at school	152 (23.6)	419 (65.2)	72 (11.2)	.56
Provided group consultations	145 (22.6)	415 (64.5)	83 (12.9)	.55
Organised trips to enterprises, organisations	135 (21.0)	397 (61.7)	111 (17.3)	.52
Organised meetings with various school institution representatives	127 (19.8)	406 (63.1)	110 (17.1)	.51
Helped to acquire new and to develop already possessed career competences	131 (20.4)	384 (59.7)	128 (19.9)	.50
Career activities given during class hours	125 (19.4)	309 (48.1)	209 (32.5)	.43
Provided information about profession world novelties	100 (15.6)	346 (53.8)	197 (30.6)	.42
Interested in my career choice/professional self-determination	97 (15.1)	339 (52.7)	207 (32.2)	.41
Advised how to make /fill in a personal career plan	92 (14.3)	306 (47.6)	245 (38.1)	.38
Professional activity experiential visits take place	82 (12.8)	328 (51.0)	233 (36.2)	.38
Provided information about labour market changes	62 (9.6)	321 (49.9)	260 (40.4)	.35
Taught how to write CV, motivational letter and so on	81 (12.6)	264 (41.1)	298 (46.3)	.33
Communicated and collaborated with my parents on career education questions	40 (6.2)	238 (37.0)	365 (56.8)	.24

Note: *SI* means popularity (significance) index ($0 \leq SI \leq 1$). The nearer *SI* value to 1, the more essential, significant was the statement to the respondent or the respondent better approved of it. *N* (%).

The research results in Table 9 showed that the biggest part of 11th and 12th grade students noted that during career education in their schools, most often it was proposed to do various tests (*SI* = .67), provided information about career preparation (*SI* = .62), it was helped to cognise personality features, interests, skills, abilities

and their relationship with career ($SI = .60$), and trips were organised to higher schools, study fairs, open door days in various education institutions ($SI = .59$). These most frequently carried out career activities in gymnasiums traditionally are directed towards three major career education spheres: self-cognition (Who am I?), profession cognition (What is the world of professions?) and where can I acquire this profession (How can I get there?).

The research results allow stating that the majority of 11th and 12th grade students indicated that individual consultations ($SI = .58$) were often provided in their gymnasiums, useful internet links were presented ($SI = .58$), support was provided planning individual career steps ($SI = .57$). It is obvious that these activities carried out during career education allow stating that quite often individual support corresponding to their demands was provided for the students during career education.

The research results show that career education activities for big students' groups were carried out in gymnasiums and were devoted to a real meeting with various professional activity and study representatives. A part of students pointed out that meetings were organised with various profession representatives ($SI = .56$), various events related to career education were organised at school ($SI = .56$), group consultations were provided ($SI = .55$), trips were organised to enterprises, organisations ($SI = .52$), meetings were organised with various teaching institution representatives ($SI = .51$).

The research results allow stating that not enough attention was devoted to practical career education activities. Only a small part of students claimed that advice was given how to write/to fill in a personal career plan ($SI = .38$), professional activity experiential visits were taking place ($SI = .38$), information about labour market changes was provided ($SI = .35$), they were taught how to write their CV, motivation letter and so on ($SI = .33$).

There were very few activities devoted to communication and collaboration with students' parents on professional self-determination questions ($SI = .24$).

Career interest areas were analysed. The results are reported in [Table 10](#).

As can be seen in [Table 10](#), the priority was given to business, accounting and finances, the area of least interest was childcare. Statistically significant differences were established in career interests, according to the respondents' gender, $\chi^2(16, N = 643) = 152.25, p < .001$. The biggest difference was noticed in *computer/technology and engineering/mechanics* careers. 15% of male and only 2.4% of female students were interested in computer/technology careers. Engineering/mechanics careers were interesting to 13.3% of male and only to 1.5% of female students. Career area *sport / leisure time* was also of greater interest to male (13.0%) than to female (5.6%) students. The female students were mostly interested in *art/design* career area (16.5%), *teaching / education* career area (9.9%), health care / nursery career area (8.7%), and *beauty care / hair cutting* career area (5.6%). While for the male students, these career areas were of less interest: *art and/design* careers - (7.8%), *teaching / education* careers (3.9%), health care / nursery careers (2.2%) and *beauty care / hair cutting* careers did not interest any studied male student. It is obvious that a bigger or a smaller number of female and male students interested in certain career areas reflected a traditional career choice. The female students were more interested in social, health sciences, the male students – in technology sciences. Such career areas as *animal care / veterinary / agriculture* (female (2.4%) and male (2.6%)) and *science / research* (female (3.9%) and male (3.0%)) revealed the least difference between female and male interests. It is obvious that both these career areas were of very little interest both for the female and the male students.

Table 10

Career Interest Areas

Career area	Gender, N (%)		
	Female	Male	Total
Business / Accounting / Finances	54 (13.1)	35 (15.2)	89 (13.8)
Art / design	68 (16.5)	18 (7.8)	86 (13.4)
Sport / leisure time	23 (5.6)	30 (13.0)	53 (8.2)
Teaching / education	41 (9.9)	9 (3.9)	50 (7.8)
Computers / technologies	10 (2.4)	40 (17.4)	50 (7.8)
Medicine / pharmacy / odontology	33 (8.0)	10 (4.3)	43 (6.7)
Health care/ nursery	36 (8.7)	5 (2.2)	41 (6.4)
Engineering/ mechanics	6 (1.5)	34 (14.8)	40 (6.2)
Leisure time organisation / tourism	25 (6.1)	6 (2.6)	31 (4.8)
Law / politics	21 (5.1)	6 (2.6)	27 (4.2)
Science / research	16 (3.9)	7 (3.0)	23 (3.6)
Beauty care / haircutting	23 (5.6)	0 (0.0)	23 (3.6)
Media / marketing	17 (4.1)	4 (1.7)	21 (3.3)
Animal care / veterinary / agriculture	10 (2.4)	6 (2.6)	16 (2.5)
Architecture / construction	2 (0.5)	7 (3.0)	9 (1.4)
Childcare	4 (1.0)	1 (0.4)	5 (0.8)
Other	24 (5.8)	12 (5.2)	36 (5.6)
Total	413 (100.0)	230 (100.0)	643 (100.0)

Other people's possible influence on career choice evaluation results is presented in Table 11.

Table 11

Other People's Influence on Career Choice Evaluation

People	Important	Neither important, nor unimportant	Not important	SI
Parents	393 (61.1)	190 (29.5)	60 (9.3)	.75
Brothers, sisters	194 (30.2)	253 (39.3)	196 (30.5)	.49
Teachers	120 (18.7)	288 (44.8)	235 (36.5)	.42
Friends	88 (13.7)	353 (54.9)	202 (31.4)	.41
School career consultant	149 (23.2)	236 (36.7)	258 (40.1)	.40
Relatives	93 (14.5)	316 (49.1)	234 (36.4)	.39
Class teacher	89 (13.8)	258 (40.1)	296 (46.0)	.34
School social pedagogue	45 (7.0)	227 (35.3)	371 (57.7)	.25
Class friends	18 (2.8)	248 (38.6)	377 (58.6)	.22
School psychologist	44 (6.8)	201 (31.3)	398 (61.9)	.22
Neighbours	7 (1.1)	148 (23.0)	488 (75.9)	.12

Note. SI means popularity (significance) index ($0 \leq SI \leq 1$). The nearer SI value to 1, the more essential, significant was the statement to the respondent or the respondent better approved of it.

Choosing a further professional career, the other people's position can be important. Having analysed the data, it was stated that the respondents rather differently evaluated other people's possible influence. As it was believed, parents' position had the biggest influence ($SI = .75$), and the least influence had neighbours' position ($SI = .12$). According to gender and grade variables, statistically significant differences in other people's influence on career choice evaluation were not indicated (in all cases $p > .05$). Parents are the closest people to

children, they know their children best, know their abilities, features, therefore children tend to trust and appreciate parents' opinion and to take it into consideration. The research revealed that school teachers and specialists had a significantly lower influence on students' career choice than their parents. From the school specialists, the biggest influence had subject teachers ($SI = .42$) and career consultants ($SI = .40$). Unfortunately, such important school specialists as a class teacher ($SI = .34$), school social pedagogue ($SI = .25$), and especially school psychologist ($SI = .22$) had a very slight influence. Such results allow stating that various specialists at school participate very little in students' career education, very little help the students to solve career choice and career planning problems, therefore they have insignificant influence on students' career choice.

Factor Analysis

20 statement factor analysis about career choice was performed employing the principal component method and Varimax rotation with Kaiser Normalization. It was sought to bring down the number of initial variables, which usually is the aim of factor analysis. The number of factors was fixed on the basis of Kaiser Criterion, i.e. those factors were analysed, which Eigen values were equal or higher than one. Before that, it was evaluated whether the data set was appropriate for factor analysis. Two main procedures were applied in order to assess sample data set suitability: Bartlett's Test of Sphericity and Kaiser-Meyer-Olkin (KMO) test. The results are reported in Table 12.

Table 12

KMO and Bartlett's Test to Assess Sample Data Set Suitability

Test	Approx. Chi-Square	df	p	KMO
Kaiser-Meyer-Olkin Measure of Sampling Adequacy				.759
Bartlett's Test of Sphericity	1857.909	190.000	.0001	

The data in Table 12 show that the values of KMO and Bartlett's test were high enough (Nasledov, 2005; Rivera & Ganaden, 2001). Bartlett's test of Sphericity showed that the data correlation matrix was not equal to 1 and that data were correlated, therefore they were appropriate for factor analysis. Kaiser, Meyer, and Olkin (KMO) test confirmed that factor analysis was appropriate for the data ($KMO = 0.759$).

Referring to Eigen Value Statistics, from 20 statements totally, 6 factors were extracted, which explained 52.37% of common variance.

In Figure 1 it is possible to observe that best expressed were the first six components. The eigenvalues of the other components accordingly were decreasing (close to 1 or smaller).

In Table 13, initial variable communalities are presented, i.e. initial variable variation parts, which are explained by common factors. Initial variable communalities were bigger than 0.20, and that means, that in the selected principal components, fairly enough information persisted about the variable.

The variance explained of the extracted six factors is reported in Table 14.

It is evident that the first two factors explained the largest part of the common variance (10.85% and 10.65%). The other four factors explained the smaller part of common variance.

Scree Plot

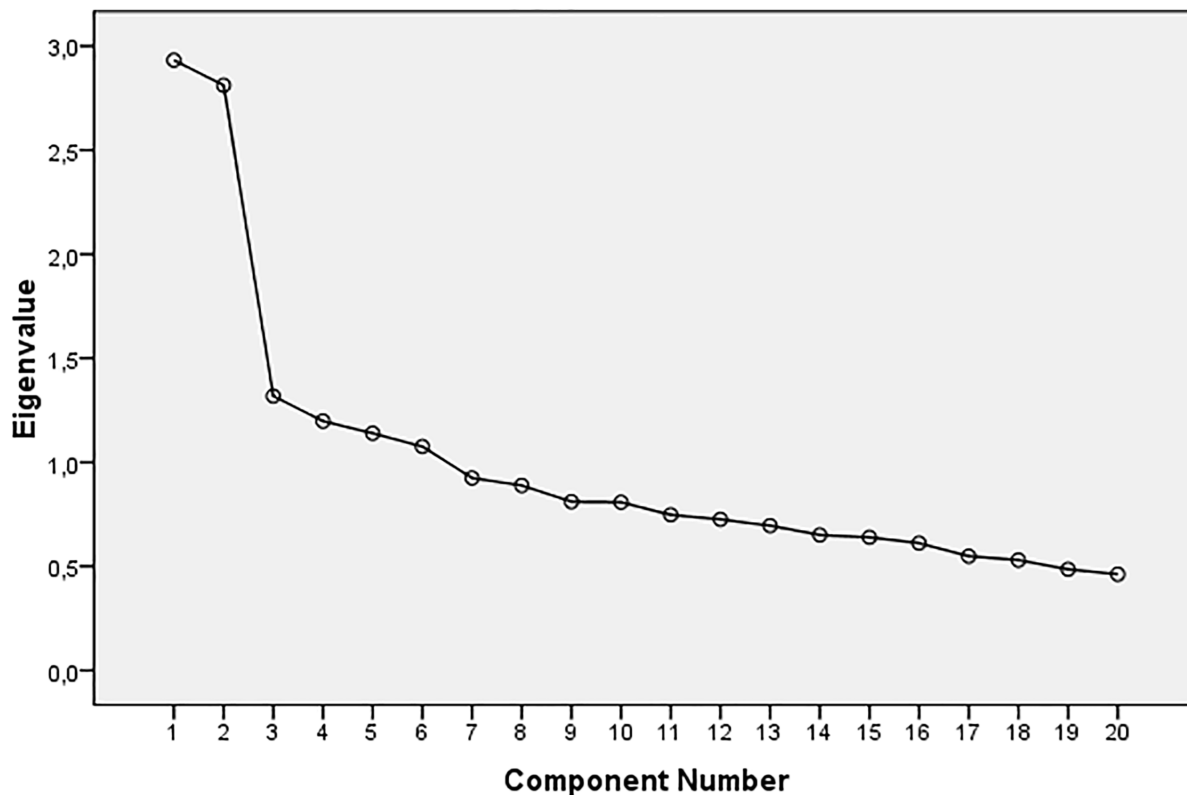


Figure 1. Scree Plot.

Further factor analysis procedure was carried out. In Table 15, the item loadings on six extracted factors are reported after rotation procedure, also, factor significance indexes were measured, showing how the statements were allocated into factors. Significance indexes allowed to decide which factors were the most significant.

In Table 15 one can see that the most important was the first factor *Personality feature importance* ($SI = .84$), and the least important was the second factor *Coincidence factors* ($SI = .21$).

The first most significant factor *Personality feature importance* ($SI = .84$) consisted of six statements, which revealed that when making a professional choice the most important for the students were their personal features. The second, according to its significance, was the third factor *Career prospects* ($SI = .70$) which consisted of three statements. It is obvious that career prospects are very important for the students making a career choice. The third, according to its significance, was the factor *Important people's position* ($SI = .57$) which showed that parents' and teachers' advice and support were very important and valuable. These people know students' features, possibilities and desires best, therefore their opinion is very important for the students. Statement 12 (Choosing a profession, it is important to refer to friends' opinion) was not loaded on factor 4 – Important people's position, but on factor 2 - Coincidence factors, emphasizing on the occasional coincidence in friends' interests, whilst the parents and teachers should know better the student's peculiarities than the

Table 13

Communalities

Statements	Initial	Extraction
S1	1.000	.456
S2	1.000	.363
S3	1.000	.543
S4	1.000	.590
S5	1.000	.638
S6	1.000	.576
S7	1.000	.481
S8	1.000	.497
S9	1.000	.437
S10	1.000	.493
S11	1.000	.564
S12	1.000	.542
S13	1.000	.333
S14	1.000	.572
S15	1.000	.539
S16	1.000	.550
S17	1.000	.510
S18	1.000	.686
S19	1.000	.615
S20	1.000	.489

Note. Extraction Method: Principal Component Analysis.

Table 14

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.932	14.660	14.660	2.932	14.660	14.660	2.171	10.857	10.857
2	2.812	14.058	28.718	2.812	14.058	28.718	2.130	10.651	21.508
3	1.318	6.591	35.309	1.318	6.591	35.309	1.737	8.686	30.193
4	1.198	5.988	41.297	1.198	5.988	41.297	1.545	7.727	37.920
5	1.140	5.698	46.995	1.140	5.698	46.995	1.468	7.338	45.258
6	1.076	5.378	52.373	1.076	5.378	52.373	1.423	7.115	52.373

Note. Extraction Method: Principal Component Analysis.

friends and they should give him/her more purposeful career guidance. The fourth, according to its significance, was the factor *Self-determination uncertainty* ($SI = .56$). It consisted of two statements reflecting a different attitude towards the career choice process. Some of the students understood a career choice as a changing process and thought that one could always change the chosen profession, the other students understood a career choice as a final process and thought that profession was chosen for the whole life. The fifth, according to its significance, was the factor *Informational support* ($SI = .46$). It showed that tests and information on the internet influenced students' professional self-determination.

Table 15

Factor Loadings of Statements About Career Choice and Their Significance

Item No.	Item	Factor Loadings	SI	SD	α
Personality feature significance			0.84	0.14	.62
S8	It is important to know oneself well	0.69			
S11	A person has to work what he likes, what he is interested in	0.65			
S9	It is important to have a lot of possibilities to choose	0.57			
S1	Choosing a profession, one has to take into account one's own hobbies	0.52			
S10	It is normal if anxiety is felt about one's career	0.49			
S13	Possibility to spend a working day with a specialist is the most valuable profession cognition way	0.40			
Coincidence factors			0.21	0.21	.64
S12	Choosing a profession, it is important to refer to friends' opinion	0.69			
S20	It is important to give priority not to the profession, but to school's prestige	0.66			
S17	Choosing a profession spontaneously, career will be successful	0.62			
S7	It is important that the chosen speciality/profession is trendy	0.62			
Career prospects			0.70	0.22	.60
S18	It is important to find out if the chosen profession will be popular in the labour market	0.82			
S3	Choosing a profession, it is important to evaluate what is important for the employers at the moment	0.63			
S6	It is important that the chosen activity sphere brings benefits	0.60			
Important people's position			0.57	0.21	.47
S4	Parents' advice regarding career choice is important and valuable	0.75			
S14	Teachers' advice regarding career choice is important and valuable	0.62			
S2	Any learning is important and necessary	0.53			
Informational help			0.46	0.24	.43
S16	Career choice tests help a lot choosing a profession	0.70			
S15	Information found in the internet helps best making a career choice	0.68			
Self-determination uncertainty			0.56	0.17	.50
S19 ¹	The chosen profession can always be changed	0.76			
S5	Profession is chosen for the whole life	0.72			

Note. SI – significance index, SD – standard deviation; Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization; Rotation converged in 8 iterations;

¹S19 is recoded seeking that correlations between variables were positive.

A statistically significant deviation was derived in terms of gender on the first, the second, fourth and sixth factors (Table 16). The null hypothesis H_0 about equal averages was rejected at the level of significance for these factors $p < .001$ for the first factors and $p = .006$ for the second, fourth and sixth factors. In table 16, one can see, that the first factor, $t(641) = 3.87$, $p < .001$, the fourth factor, $t(641) = 2.78$, $p < .006$, and the sixth factor, $t(641) = 2.73$, $p < .007$, were statistically more significant for the female students than for the male students. On the contrary, the second factor was more significant for the female students than for the male students, $t(641) = -2.76$, $p < .006$. The male students trusted coincidence factors more: school's prestige, friends' opinion, profession's trendiness, spontaneity were important in choosing a profession. For the female students, very important were personal features ($SI = .86$) making a career choice, which in one's turn may allow choosing the profession more successfully, because the occupation would match more the person's possibilities. However, informational support was also more needful for the female than for the male students, and self-determination uncer-

tainty was more characteristic for the female students. Therefore, an assumption can be made that the female students' lower self-confidence may determine such a career choice situation.

Table 16

Factor Significance Indexes in Accordance With the Participants' Gender

Factor	Gender				Total		t-test for equality of means (indexes)	
	Female		Male					
	SI	SD	SI	SD	SI	SD	t(641)	p
Factor 1	.86	0.13	.81	0.16	.84	0.14	3.87	.0001
Factor 2	.19	0.20	.24	0.21	.21	0.21	-2.76	.006
Factor 3	.69	0.22	.70	0.23	.70	0.22	-.86	.391
Factor 4	.58	0.21	.53	0.21	.57	0.21	2.78	.006
Factor 5	.45	0.24	.47	0.24	.46	0.24	-1.07	.285
Factor 6	.57	0.18	.53	0.17	.56	0.17	2.73	.006

A statistically significant deviation was derived in terms of grade only on the fourth factor, $t(641) = 3.46$, $p < .001$ (Table 17). In all other cases $p > .05$. It is obvious that 11th grade students being of a younger age were not completely self-determined about their future profession, therefore, important people's position was more significant for them: parents' and teachers' advice. 12th grade students were more mature, and more often they had already made decisions about their future profession.

Table 17

Factor Significance Indexes in Accordance With the Respondents' Grade

Factor	Grade				Total		t-test for equality of means (indexes)	
	11		12					
	SI	SD	SI	SD	SI	SD	t(641)	p
Factor 1	.85	0.14	.83	0.15	.84	0.14	1.63	.103
Factor 2	.22	0.20	.19	0.22	.21	0.21	1.76	.079
Factor 3	.70	0.21	.69	0.23	.70	0.22	.987	.324
Factor 4	.60	0.21	.54	0.22	.57	0.21	3.462	< .001
Factor 5	.47	0.23	.44	0.25	.46	0.24	1.453	.147
Factor 6	.56	0.18	.56	0.17	.56	0.17	.013	.989

Discussion

The research aim was to ascertain how Lithuanian gymnasium students valued their future personal career, how they planned their professional activity, and to establish the internal structure of the career choice process. The carried-out research once again confirms that career education in general education schools is important, on the other hand, it is a complicated, complex process. Effectively realised, the career education process is important both for the education system in general, and for labour market, and their interrelationship. They help as better as possible to use human resources, forming more favourable conditions to guarantee that people's possessed abilities and interests coincide with the current learning and occupation possibilities.

The carried out research showed that future / life planning was valued as very essential. 86.7% of female and 77.0% of male students pointed out that. Career planning significance was also valued similarly. 93% of female and 84.3% of male students pointed out that career planning was very and/or rather important. Obviously, statistically significant differences were indicated, according to gender. Similar results were obtained in a research carried out in Canada, in which 2360 of the respondents took part (Witko, Bernes, Magnusson, & Bardick, 2005). It was established that career planning was considered very essential for secondary school students. They searched for information and advice from various people (Witko, Bernes, Magnusson, & Bardick, 2005). Thus, career education is not only important but also encounters great challenges, because it is progressively hard for youth to make a fluent conversion from education in school to labour market (Wong, 2017).

Various career education activities carried out at school guarantee career education effectiveness. The research results showed that the activities carried out in certain students' groups were rather traditional. It was proposed to carry out various tests, it was helped to cognise personality features, interests, inclinations, trips were organised to higher schools, study fairs and so on. However, such activities as individual help, consulting, work with the learners' parents, support planning further professional self-determination were not prevailing and were carried out rather rarely. The other conducted studies showed that students' participation level in career activities was not sufficient, therefore, career specialists had to improve career education process in schools (Abubakar, 2013) and to increase students' participation and involvement.

A very important result of general education is self-confidence. It is worth speaking about self-confidence because it is very important in every person's life, especially a young person's life. It is obvious that life success and fullness depend on one's own value feeling, self-confidence level. It is very actual for young people completing secondary school to choose further life path. The conducted research showed that self-confidence level was not high. Only 22.7% of the respondents had high self-confidence. More than two-thirds of the respondents (66.7%) had moderate/average self-confidence. Besides, some differences, according to gender, were indicated. Male self-confidence was statistically significantly higher than female. Another study conducted in Slovenia also accentuated the importance of self-confidence and it showed that applying the appropriate career education course, self-esteem and self-confidence of the participants increased (Turnšek Mikačić, 2015).

The research results revealed that the biggest influence on career (profession) choice still had parents ($SI = .75$) and close people – brothers/or sisters ($SI = .49$). It is paradoxical, however, that the main specialists such as class teacher, school social pedagogue, and school psychologist had a very slight influence in that process. The research carried out in other countries confirmed such position as well. For example, the research conducted in Nigeria showed that 48.36% of the participants claimed that parents were affecting their career choice (Olaosebikan & Olusakin, 2014). The research carried out in India and the USA also confirmed the statement that family influence was an essential factor in the process of a career choice and in the career-related decisions (Fouad, Kim, Ghosh, Chang, & Figueiredo, 2016). One can think that family members are more relevant in students' career choices comparing with other people, e.g., friends, teachers and so on (Kochung & Migunde, 2011; Taylor, Harris, & Taylor, 2004). In addition, the research confirmed parents' – mother and father's – rather different influences on a career choice. The research shows that unlike the father, the mother is more involved in career plans, initiating concrete actions, besides, the mother tends more to provide psychosocial support (Palos & Drobot, 2010), on the other hand, mothers' influence on daughters is bigger than on sons (Jacobs, Ahmad, & Sax, 2017). It is meaningful to draw attention to the fact that the research has been conducted showing that career specialist's influence in a career education process is valued as very important

(Suryadi, Sawitri, Hamidah, & Hanifa, 2018). The research carried out in Lithuania did not analyse these differences and this is one of the most limiting factors. On the other hand, it is a meaningful further research sphere. This confirms the position of how it is important to develop effective career education interventions for rather different population members.

The carried-out research once again confirmed how important self-confidence was. Personality feature importance was the most relevant factor in career choice structure ($S/I = .84$). Such result confirms the position that one has to start planning career from self-cognition, that it is an important factor in choosing appropriate career and providing satisfaction with career. Better personality cognition helps to better understand oneself and to easier ascertain which working environment is more acceptable and how successfully one could work in a chosen sphere. The evaluation of one's demands, ambitions, aims, values, life philosophy helps the individual to better understand what he/she wants in life. It is also natural that the least significant factor was "Coincidence factors" ($S/I = 0.21$) which shows that gymnasium 11 and 12 grade students responsibly choose their profession.

Conclusions and Implications

Research result analysis revealed that career planning importance in the current life period was much more significant for the female than male students. It is also much more important for the female students to plan their future/life. Male students had a clearer idea than female students about the type of activity after leaving school. Male personal self-confidence was statistically significantly higher than female personal self-confidence.

The research results revealed that future/life and career planning in that life period were closely related. In the female sample, such relation was weaker. Whereas, personal self-confidence and future/life planning importance were significantly closer related in the female sample than in male.

The research results allow stating that male trusted coincidence factors more: school's prestige, friends' opinion, profession's trendiness, spontaneity in choosing a profession. When choosing a profession, very important were personality features for the female. However, for the female students information support was also necessary more than for the male students and self-determination uncertainty was characteristic for the female students.

The research results revealed that a larger part of the respondents (11 and 12 grade female and male students) gave priority to learning in the college and in the less prestigious/competitive universities. The research results allow making an assumption that female students raise higher goals for themselves because more female than male students plan to choose a very prestigious/ competitive university and to study abroad. Besides, significantly more male than female students stated that they did not think about what to do after finishing school.

The research results show that a bigger part of 11 and 12 grade students pointed out that usually during career education in their schools, it was offered to do various tests, information was provided about professional preparation, it was helped to cognise personality features, interests, skills, abilities and their importance for a successful career, some trips were organised to higher schools, study fairs, open door days in various educational institutions. Very often individual consultations were provided, useful internet links were given, the support was provided for planning individual career steps. Less often meetings with various occupational representatives

were organised, various career-related events were arranged at school, group consultations were provided, some trips to enterprises and meetings with various teaching institution representatives were organised.

The research results allow stating that not enough attention was devoted to practical career education activities, professional activity experiential visits, little information was provided about labour market changes, rarely was taught how to write a Curriculum vitae (CV), motivational letter and so on. Very little attention was devoted to communication and collaboration with parents on students' professional self-determination questions.

The research results revealed that 11 and 12 grade students (both female and male) were mostly interested in business, accounting, and finances. The least interesting area was the children's care. Some statistically significant differences were established, according to the respondents' gender. The biggest difference was noticed in computer/technology and engineering/mechanics and sport / leisure organisation career spheres. Male students more than female students were planning to choose these career spheres. Female students were more interested in art/design, teaching / education, health care / nursery, beauty care / hair cutting career areas. It is obvious that a greater or smaller female and male interest in certain career areas reflects a traditional career choice. The least difference between female and male interest spheres was animal care / veterinary / agriculture and science / research.

The research results revealed that choosing the future profession, an exceptionally big influence had students' parents. School teachers and specialists had a significantly smaller influence on students' career choice than their parents. From the school specialists, subject teachers and career consultants had the biggest influence.

The research data analysis allowed ascertaining the most important factors influencing career choice. These most important factors were Personal feature importance, Profession prospects, and Important people's position. The least significant factor was Coincidence factors.

The research results suggest that it is recommendable to differentiate and individualise students' career education in the gymnasium. Female and male students often need different services. Professional self-determination is an individual person's inner activity. Person's ability to join his/her calling, inclinations, abilities, values and the generalised working world understanding into a meaningful wholeness, determines a successful career choice. Professional self-determination is one of the basic career education aims, therefore one has to draw attention to objective and subjective factors determining this action, and to increase the role of the psychologist, social worker and professional consultant working at school, and to develop collaboration with the students' parents.

Funding

The authors have no funding to report.

Competing Interests

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. Vincentas Lamanauskas is a member of Editorial board of Psychological Thought, but he has not reviewed, neither edited this article.

Acknowledgments

The authors have no support to report.

References

- Abubakar, I. A. (2013). Career guidance, participation of students and its implication for Kano, Nigeria. *The Malaysian Online Journal of Educational Science*, 1(3), 14-19.
- Augienė, D. (2009). *Karjera: nuo profesijos pasirinkimo iki profesinės veiklos organizacijoje* [Career: From professional choice to professional activity in the organization]. Šiauliai, Lithuania: VŠĮ Šiaulių universiteto leidykla.
- Beresnevičienė, D. (1990). *Diferencijuotas profesinis orientavimas mokykloje* [Differentiated vocational guidance at school]. Vilnius: PMTI.
- Bikse, V., Lūsēna-Ezera, I., Libkovska, U., & Rivža, B. (2018). Comparative analysis of career choices by students in Latvia and the UK. In J. Domenech, P. Merello, E. de la Poza & D. Blazquez (Eds.), *4th International conference on higher education advances (HEAd'18)* (pp. 1349-1357). València, Spain: Universitat Politècnica de València. <https://doi.org/10.4995/HEAd18.2018.8202>.
- Cenkseven-Önder, F., Kırđök, O., & Işık, E. (2010). High school students' career decision-making pattern across parenting styles and parental attachment levels. *Electronic Journal of Research in Educational Psychology*, 8(1), 263-280.
- Čiužas, R., Šiaučiukėnienė, L., Čiučiulkienė, N., & Augustinienė, A. (2006). Mokinių gebėjimų priimti karjeros sprendimus ugdymo dalyviai kaip besimokanti bendruomenė [The participants of the development of career decision making skills as a learning community]. *Pedagogika*, 84, 93-100.
- Cohen, L., Manion, L., & Morrison, K. (2000). *Research methods in education*. London, United Kingdom: Taylor & Francis Group, RoutledgeFalmer.
- Eisenman, L. T. (2007). Self-determination interventions: Building a foundation for school completion. *Remedial and Special Education*, 28(1), 2-8. <https://doi.org/10.1177/07419325070280010101>
- Ekechukwu, R. O., & Amaeze, F. E. (2016). Influence of demographic variables on senior secondary school students' choice of career in Imo state, Nigeria. *European Journal of Research and Reflection in Educational Sciences*, 4(1), 65-73.
- European Lifelong Guidance Policy Network (ELGPN). (2015). *European Lifelong Guidance Policies: Summative Report 2007-15. A report on the work of the European Lifelong Guidance Policy Network 2007-15*. Jyväskylä, Finland: Kariteam. Retrieved from <http://www.elgpn.eu/publications/browse-by-language/english/elgpn-summative-report-2007-2015/>
- Eyisi, D. (2016). The usefulness of qualitative and quantitative approaches and methods in researching problem-solving ability in science education curriculum. *Journal of Education and Practice*, 7(15), 91-100.
- Fouad, N. A., Kim, S.-Y., Ghosh, A., Chang, W.-H., & Figueiredo, C. (2016). Family influence on career decision making: Validation in India and the United States. *Journal of Career Assessment*, 24(1), 197-212. <https://doi.org/10.1177/1069072714565782>
- Garson, D. G. (2012). *Testing statistical assumptions: Unidimensionality*. Raleigh, NC, USA: G. David Garson and Statistical Associates Publishing. Retrieved from <http://www.statisticalassociates.com/assumptions.pdf>

- George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference* (11.0 update, 4th ed.). Boston, MA, USA: Allyn & Bacon.
- Hirschi, A., & Lage, D. (2007). Holland's secondary constructs of vocational interests and career choice readiness of secondary students. *Journal of Individual Differences*, 28(4), 205-218. <https://doi.org/10.1027/1614-0001.28.4.205>
- Jacobs, J. A., Ahmad, S., & Sax, L. J. (2017). Planning a career in engineering: Parental effects on sons and daughters. *Social Sciences*, 6(1), 2-25. <https://doi.org/10.3390/socsci6010002>
- Kardelis, K. (2007). *Mokslinių tyrimų metodologija ir metodai* [Research methodology and methods]. Šiauliai, Lithuania: Lucilijus.
- Kochung, E., & Migunde, Q. (2011). Factors influencing students career choices among secondary school students in Kisumu Municipality, Kenya. [JETERAPS]. *Journal of Emerging Trends in Educational Research and Policy Studies*, 2(2), 81-87.
- Korkmaz, H. (2015). Factors influencing students' career chooses in science and technology: Implications for high school science curricula. *Procedia: Social and Behavioral Sciences*, 197, 966-972. <https://doi.org/10.1016/j.sbspro.2015.07.284>
- Lamanauskas, V., & Augienė, D. (2017). Career education in comprehensive schools of Lithuania: Career professionals' position. In A. Klim-Klimaszewska, M. Podhajecka, A. Fijalkowska-Mroczyk (Eds.), *Orientacje i przedsięwzięcia w edukacji przedszkolnej i szkolnej* /Monografia/ [Orientations and ventures in pre-school and general education] (pp. 216-236). Siedlce, Poland: Akka.
- Lamanauskas, V., & Augienė, D. (2018). Lithuanian gymnasium students' career and professional self-determination. *Psychological Thought*, 11(2), 148-173. <https://doi.org/10.5964/psyct.v11i2.308>
- Lavonen, J., Gedrovics, J., Byman, R., Meisalo, V., Juuti, K., & Uitto, A. (2008). Students' motivational orientations and career choice in science and technology: A comparative investigation in Finland and Latvia. *Journal of Baltic Science Education*, 7(2), 86-102.
- Lenhard, W., & Lenhard, A. (2016). *Calculation of effect sizes*. Dettelbach, Germany: Psychometrica. doi. <https://doi.org/10.13140/RG.2.1.3478.4245>. Retrieved from https://www.psychometrica.de/effect_size.html
- Lincevičienė, R. (2012). *Karjeros kompetencijų ugdymas ir profesijos rinkimosi lūkesčiai vyresnėse klasėse* [The education of the career competences and professional expectations of the pupils in the upper forms]. (Master's thesis). Retrieved from <https://vb.asu.lt/object/elaba:2074985>.
- Mack, N., Woodsong, C., MacQueen, K. M., Guest, G., & Namey, E. (2005). *Qualitative research methods: A data collector's field guide*. Research Triangle Park, NC, USA: Family Health International.
- Mohd, F., Salleh, A. M., & Musapha, R. (2010). The influence of contextual aspects on career decision making of Malaysian technical students. *Procedia: Social and Behavioral Sciences*, 7(C), 369-375. <https://doi.org/10.1016/j.sbspro.2010.10.050>
- Mugonzibwa, E., Kikwilu, N. E., Rugarabamu, G. P., & Ntabaye, M. (2000). Factors influencing career choice among high school students in Tanzania. *Journal of Dental Education*, 64(6), 423-429.

- Nasledov, A. (2005). *SPSS: komp'juternyj analiz dannyh v psichologii i social'nyh naukah* [SPSS: Computer analysis of data in psychology and social sciences]. St. Petersburg, Russia: Piter.
- Ojeda, L., & Flores, L. Y. (2008). The influence of gender, generation level, parents' education level and perceived barriers on the educational aspirations of Mexican American high school students. *The Career Development Quarterly*, 57(1), 84-95. <https://doi.org/10.1002/j.2161-0045.2008.tb00168.x>
- Olaosebikan, O. I., & Olusakin, A. M. (2014). Effects of parental influence on adolescents' career choice in Badagry Local Government Area of Lagos State, Nigeria. *IOSR Journal of Research & Method in Education (IOSR-JRME)*, 4(4), 44-57.
- Palos, R., & Drobot, L. (2010). The impact of family influence on the career choice of adolescents. *Procedia: Social and Behavioral Sciences*, 2, 3407-3411. <https://doi.org/10.1016/j.sbspro.2010.03.524>
- Pukelis, K., & Garnienė, D. (2003). Moksleivių ugdymas karjerai: padėties analizė ir perspektyvos bendrojo lavinimo mokykloje [Schoolchildren career education: Situation analysis and perspectives at a general education school]. *Profesinis rengimas. Tyrimai ir realijos: Research and Reality*, 7, 24-35. Retrieved from <http://etalpykla.lituanistikadb.lt/fedora/objects/LT-LDB-0001:J.04~2003~1377784905520/datastreams/DS.002.0.01.ARTIC/content>
- Rivera, T. C., & Ganaden, M. F. (2001). The development and validation of a classroom environment scale for Filipinos. *The International Online Journal of Science and Mathematics Education*, 1. Retrieved from <http://www.upd.edu.ph/~ismed/online/articles/dev/dev.htm>
- Sajienė, L., & Antanaitienė, A. (2012). Tikslingo profesinio apsisprendimo skatinimas šiuolaikinėje socialinio ugdymo paradigmoje [Promotion of purposeful vocational decision in the paradigm of contemporary social education]. *Tiltai / Bridges*, 2, 71-83.
- Sidorenko, E. V. (2002). *Metody matematicheskoy obrabotki v psichologii* [Methods of mathematical processing in psychology]. St. Petersburg, Russia: Rech'.
- State Progress Council. (2012). Lithuania's Progress Strategy "Lithuania 2030". Vilnius. Retrieved from https://lr.lt/uploads/main/documents/files/EN_version/Useful_information/lithuania2030.pdf.
- Suryadi, B., & Sawitri, D. R., Hamidah, & Hanifa, F. (2018). Career orientation of senior secondary school students. *SHS Web of Conferences*, 42, 00005. <https://doi.org/https://doi.org/10.1051/shsconf/20184200005>
- Švietimo Valdymo Informacinė Sistema [Education Management Information System]. (2019). Retrieved from <http://svis.emokykla.lt/lt>
- Taylor, J., Harris, M., & Taylor, S. (2004). Parents have their say about their college aged children's career decisions. *National Association of Colleges and Employers Journal*, 64(3), 1-5. Retrieved from https://www.hampshire.edu/sites/default/files/shared_files/Parents_Have_Their_Say.pdf.
- Turnšek Mikačić, M. (2015). The effects of career planning education. *Revija za univerzalno odličnost*, 4(3), 92-109.
- Valstybinio audito ataskaita [State audit report]. (2014). *Kaip organizuojamas ir vykdomas mokinių profesinis orientavimas* [How vocational guidance for students is organized and implemented]. Vilnius, Lithuania: LVK. Retrieved from <https://www.vkontrole.lt/failas.aspx?id=3288>.

Witko, K., Bernes, K. B., Magnusson, K., & Bardick, A. D. (2005). Senior high school career planning: What students want. *Journal of Educational Enquiry*, 6(1), 34-49.

Wong, P. W. L. (2017). Career and life planning education in Hong Kong: Challenges and opportunities on the theoretical and empirical fronts. *Hong Kong Teachers' Centro Journal*, 16, 125-149.

Appendix

Tabel A1

Career Choice Evaluation: Factorised Statements

Statements	Agree	Partially agree	Disagree	SI
Choosing a profession, one has to take into account his hobbies	576 (89.6)	63 (9.8)	4 (0.6)	.94
It is important to know oneself well	531 (82.6)	104 (16.2)	8 (1.2)	.90
A person has to work what he likes, what he is interested in	520 (80.9)	103 (16.0)	20 (3.1)	.88
It is normal, when one feels anxiety about his career	438 (68.1)	175 (27.2)	30 (4.7)	.82
It is important to have a lot of possibilities to choose	405 (63.0)	213 (33.1)	25 (3.9)	.79
It is always possible to change the chosen profession	381 (59.3)	245 (38.1)	17 (2.6)	.78
It is important that the chosen activity sphere brings the benefits	361 (56.1)	246 (38.3)	36 (5.6)	.75
A possibility to spend working day with the specialist is the most valuable cognition way	315 (49.0)	286 (44.5)	42 (6.5)	.71
Choosing a profession, it is important to evaluate what is important for the employers at the moment	264 (41.1)	332 (51.6)	47 (7.3)	.67
It is important to find out if the chosen profession will be in demand in the labour market	267 (41.5)	327 (50.9)	49 (7.6)	.66
Any learning is important and necessary	236 (36.7)	328 (51.0)	79 (12.3)	.62
Parents' advice about profession choice is important and valuable	186 (28.9)	379 (58.9)	78 (12.1)	.58
Teachers' advice about profession choice is important and valuable	121 (18.8)	407 (63.3)	115 (17.9)	.50
Profession choice tests help a lot choosing a profession	101 (15.7)	389 (60.5)	153 (23.8)	.46
Information found on the internet helps best making a professional choice	89 (13.8)	406 (63.1)	148 (23.0)	.45
Profession is chosen for the whole life	79 (12.3)	263 (40.9)	301 (46.8)	.33
Choosing a profession spontaneously, career will be successful	34 (5.3)	246 (38.3)	363 (56.5)	.24
It is important to give the priority not to profession, but to school's prestige	52 (8.1)	173 (26.9)	418 (65.0)	.22
It is important that a chosen speciality /profession is trendy	58 (9.0)	155 (24.1)	430 (66.9)	.21
Choosing a profession, it is important to refer to friends' opinion	39 (6.1)	141 (21.9)	463 (72.0)	.17

Note. SI means popularity (significance) index ($0 \leq SI \leq 1$). The nearer SI value to 1, the more essential, significant was the statement to the respondent or the respondent better approved of it.

About the Authors

Vincentas Lamanauskas is a professor of Education at the University of Šiauliai, a Doctor of Social Sciences, the Head of Scientia Socialis Ltd, the chairman of the scientific methodical centre *Scientia Educologica* and the editor-in-chief of international scientific periodicals *Journal of Baltic Science Education*, *Natural Science Education*, *Educational Policy, Management and Quality*, *Problems of Education in the 21st Century*, and *Problems of Management in the 21st Century*. Professor Lamanauskas is a member of the Council of Lithuanian Scientific Society, the International Organization for Science and Technology Education (IOSTE). Doctor Lamanauskas is a member of a number of prestigious international organizations

including the Editorial Boards of international scientific journals *Eurasia Journal of Mathematics, Science and Technology Education* (EJMSTE), *Bulgarian Journal of Science and Education Policy* (BJSEP), *Bulgarian Journal of Chemical Education*, *Annales Universitatis Paedagogicae Cracoviensis*, *Educational Research for Social Change*, *Business Trends*, etc. Vincentas Lamanauskas is the author of more than 500 scientific and methodical publications. He makes reports at different international scientific symposiums and conferences and delivers lectures at universities abroad.

Dalia Augienė is a Senior Researcher and Associate Professor at the University of Siauliai, Department of Education. Her main research interests are connected with career education, career counselling and career policy. She is also interested in the scientific research activity of secondary school and university students. She is the author of more than 100 scientific and methodical publications.