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SELF-ASSESSMENT OF PROSPECTIVE ENGINEERS' CAREER MANAGEMENT IN THE CONTEXT OF QUANTUM TRANSITION THEORY IN SOCIAL SCIENCES

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Abstract. *We live in a changing and complex world open for potential personal development. At the same time, the Earth is moving to a new level, from a 3-dimensional to a 5-dimensional level. This process is called the quantum transition. Nowadays career management theories are developing and changing under the influence of the quantum transition paradigm, thus the perception of career and the understanding of career have also changed. A career covers the whole life of a person and is individually driven. So, we can speak of a self-directed personal career, which is connected with finding one's mission in life, one's vocation. So, moving into the fourth and fifth dimensions opens up more possibilities for finding your purpose: 1) motivated individual choice; 2) career management based on that choice; 3) transition from survival to mission; 4) access to the information field of the Universe; 5) discovery of new abilities – telekinesis, teleportation, clairvoyance, clairaudience, etc. The article considers the notion of the quantum transition, career, career management and the characteristics of the Generation Z from the perspective of various authors. The analysis is carried out by assessing the data acquired on the specific features of the existent career management and the possibilities which provides the current situation for the engineers-to-be. The research aim is to study the specific features of the career management of the prospective engineers in the perspective of the quantum transition. The obtained high-level results testify that engineering students have sufficient employability potential, which largely indicates their competitiveness. The obtained low-level results indicate that the students are not yet ready to lifelong learn and develop professionally throughout his life, is not ready for changes in his chosen career, which indicates a certain inflexibility in thinking and acting. It is precisely these qualities that are very necessary in self-management of a sustainable career. This means that career support services should continue to be offered to promote career self-development and self-management under changing conditions (closely related to quantum transition theory). During the formative (pedagogical) experiment, significant and very significant changes occurred in students' self-assessments according to the following criteria: students' internal and external resources, competitiveness in the chosen profession (p value = 0.005 ... 0.018). This means that during the survey, the self-assessment of internal resources according to these indicators was influenced by the information obtained during the survey from the content of the questionnaire, which allowed for a more adequate self-assessment at the end of the experiment.*
Keywords: *career, career management, career self-assessment, quantum transition, Z generation.*

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Introduction

We live in a changing and complex world, which is opened to the development of personal potential (quantum transition) on the one hand, and the same time which is threatened by Covid pandemic and the wars in the world on the other.

Latvian scientist, physicist M. Auzins (Auziņš, 2023) points, that quantum physics has its origins in ancient Greece (Thales, Democritus, Zeno). The development of modern quantum physics is linked to the work of Max Karl Ernst Ludwig Planck (the study of radiation from heated bodies). Later, the understanding was extended to quantum states of the atom, quantization of energy, i.e. discrete states of particles and radiation.

The term *quantum jump* was originally used after being introduced by N. Bohr (Haravifard, Yamani, & Gaulin, 2015), but nowadays the concept used is 'the quantum

transition phase'. Because it is believed that it is no longer possible to rationally grasp it within the framework of physical theory. The quantum transition has been occurring since 2008-2009, but was detected by scientists in the nuclear domain in 2013. Working with a particle of the hydrogen atom, the proton, they saw changes in mass, diameter and rotation speed. This affected the density of matter and the pre-existing laws of physics, which ceased to operate under the new conditions. The quantum transition is a gradual process. There are changes in the Earth's magnetic field, in the human body and in the overall development of both Earth and humans, including career management (Blackman, 2020; Boyle, 2020; Dumé, 2021).

Modern sciences are characterized by interdisciplinary and transdisciplinary research, using the transfer approach, when the phenomena, laws, causations and correlations discovered in one science are transferred and applied to research conducted in other sciences. The authors are aware of several examples when natural and exact sciences paradigms and approaches are used in social sciences, including new directions and trends of psychology. In this study, the authors, using the transfer of quantum physics in social sciences, investigated university students as prospective engineers' understanding of their career, career self-direction and self-management and future intentions in the context of a changing world. The detailed theoretical justification of the transfer approach will follow in the next section of the article.

Nowadays career management theories are developing and changing under the influence of the quantum transition paradigm, thus the perception of career and the understanding of career have also changed. A career covers the whole life of a person and is individually driven. So, we can speak of a self-directed personal career, which is connected with finding one's mission in life, one's vocation. So, accordance with quantum transition theory nowadays opens up more possibilities for finding own purpose: 1) motivated individual choice; 2) career management based on that choice; 3) transition from survival to mission; 4) access to the information field of the Universe; 5) discovery of new abilities – telekinesis, teleportation, clairvoyance, clairaudience, etc.

The research aim: to study the specific features of the career management of the prospective engineers in the perspective of the quantum transition.

Research methods 1) theoretical research methods: studying, analysis and synthesis of scientific literature and various documents; 2) empirical research methods: formative (pedagogical) experiment and reflection of personal experience.

Philosophically methodological basis of research: literature review

The philosophical-methodological basis of the study was the transfer interpretations of the Quantum Transition Theory in social sciences, presented in several scientific publications (Compagne, 2020; Goswami, 2013; Höne, 2017; Maldonado, 2019; Wendt & Mershon, 2014; Zohar, 1995; Zohar, 2021). The results of the theoretical studies collected by the authors, which were used in the preparation of the survey questionnaire to conduct the formative experiment, will follow.

The quantum physics has defined as a subfield of the physical sciences. It studies the processes of interaction of small particles – atoms and molecules – with each other and with external radiation (Auziņš, 2023).

The foundations of quantum physics in the 20th century were laid by M.Planck, A.Einstein, E.Rutherford, H.Geiger, E.Marsden, L. de Broglie, E.Schrödinger, P.Dirac, W.Heisenberg, A. Einstein - B. Podolsky - N.Rosen, N.Bohr, D.Bell etc. (Auziņš, 2023; Auzinsh, Budker, & Rochester, 2010). Quantum theory is currently the best experimentally tested in the field of physics. The main insights and research in quantum theory are reflected

in the work of scientists from different countries (Auzinsh et al., 2010; Fischer, Anders, & Saalfrank, 2022; Haravifard, Yamani, & Gaulin, 2015; Lai, 2006; Haller, Xu, Liu, & Pollmann, 2023; Serwatka, Melko, Burkov, & Roy, 2023). The quantum transition manifests at all levels (Earth, individual). The quantum transition has been identified in iron at a depth of 1000 km in the Earth's mantle (Dumè, 2021). A quantum transition is the jump from one state to another of a quantum system (atom, molecule, atomic nucleus, solid body) (Auzinsh et al., 2010). There are certain developments in the sciences that have an impact on the development and content of other sciences, including the development of society. This also applies to quantum physics (the quantum technologies we use every day). At the beginning of this century, theoretical and empirical research by scientists from different countries on the transfer of knowledge from quantum physics to the social sciences (pedagogy, psychology, community management, etc.) emerged. Other theories began to emerge around quantum physics, such as synergetic and chaos theories, which became the basis for new research in the social sciences and for extending the frontiers of quantum physics to the study of other sciences. This raises questions about the status and limits of the social sciences (Höne, 2017; Maldonado, 2019; Rigolot, 2020; Wendt & Mershon, 2014; Zohar, 1999; Zohar, 2021). The use of quantum theory ideas opens up new possibilities for social science content. Scientists also use the term 'quantum social science' (Höne, 2017; Lai, 2006; Maldonado, 2019).

One of such opportunities for using the transfer approach is the application of quantum physics discoveries, the Quantum Transition Theory, to social processes (Chang, 2009; Guts, 2021). According to the authors, the theory of quantum transition, which has already acquired the name *Quantumsociology* in the social sciences, allows to characterize the transition of society to a new quality, emphasizing the well-developed ability of young generations to forecast and predict.

Researchers emphasize the role of quantum theory in shaping relationships at different levels (human-human, human-society, human-world, human-Universe), creating new models of relationships. Quantum theory changed the understanding of the concept of reality, expanded the understanding of the content of consciousness (quantum consciousness can be applied to the whole level of society), the understanding of decision-making processes and outcomes, etc. In recent years, a large body of research in the field of neuroscience has demonstrated the link between the quantum aspect and consciousness (Campagne, 2020; Goswami, 2013; Steinberg, 2023; Schwartz, Stapp, & Beauregard, 2005). In general, quantum physics is being intensively integrated into management and communication theories, pedagogy and psychology. The social sciences transfer the following quantum physics phenomena into their fields of study: the Heisenberg Uncertainty Principle, the Bohr Complementarity Principle, discreteness, quantization, the influence of the observer on the observed (Goswami, 2013; Zohar, 2021).

The analysis of the theoretical insights into human characteristics led to the conclusion that a person's belonging to a certain level is determined by the quality of his vibrations. The higher they are, the higher the level to which the individual belongs. Of course, there will also be 3D features, as the transition is gradual and people will have features from 3D, 4D and 5D levels (Blackman, 2020; Boyle, 2020; Davies, 2017).

People focus on living the best life to enhance the vibration of the planet; they understand their mission; they are dedicated, responsible and ready to serve people and the Universe. People notice environmental changes as they move to the 5D level (it becomes more positive). We can live in any or all of these states (Davies, 2017; Settembre, 2020).

If we talk about human evolution, the quantum transition laws are at work, apart from the Universal laws. *The quantum transition* is based on the ***following laws****: the law of existence of threshold, the law of purposeful energy flow, the law of sufficient energy potential, the law of the amount of energy required, the law of sudden (instant) transition.* The

law of existence of threshold - there is an energy threshold between the different levels (the most common barrier is the "comfort zone"). To overcome this threshold, a strong internal or external impulse is needed; the energy of an internal decision or the push of external circumstances. Law of purposeful energy flow - the energy to overcome the threshold between levels must be focused, moving towards what the individual wants. You have to consciously focus your energy in the areas of your life that are important (mindfulness is the formation of consciousness). The law of sufficient energy potential - you cannot use more energy than you have in your potential. That is why we need to discover and develop our potential. The law of the amount of energy required - a quantum leap is a quantum shift in quality. Constant progress towards the top enables you to accumulate enough energy to not only make the quantum leap itself, but also to live on the next level. The law of sudden (instant) transition - if there is an impulse, a potential and a focused movement, then overcoming the threshold is independent of time. A quantum leap happens when all the factors come together at one point: strong impulse, developed potential, the right amount of energy and focused attention at the right point. The quantum leap occurs at the point when the individual is fully ready (Galceva, 2021). So, the essential thing that quantum physics brings to the social sciences is consciousness change, expansion and awareness.

Individuals need to be aware of the nature of change when managing their careers. Career management includes knowing yourself and your career options, career decision-making, career planning and the process of aligning and implementing your career. Career management skills include self-awareness, career exploration and creation skills, career planning skills, decision-making skills, coping with uncertainty (Mackay, Morris, Hooley, & Neary, 2015; Shenoy, 2020; Smith, 2022; Potgieter, Ferreira, & Coetzee, 2019). Career management is a self-directed lifelong process (Katane, Katans, & Baltusite, 2016).

Certain career management characteristics are determined by the age of the respondents. Our respondents are on average 22-23 years old. In recent years, much research has been carried out on young people within the framework of intergenerational theory. Our respondents belong to Generation Z, which was born between 1997 and 2012 (Dimock, 2019). This is the generation that is gradually entering the labour market. They are college and university graduates. There are 71 million Generation Z people in the world. They are the first generation to grow up in the digital age, so they have high expectations in relation to technology (Rubene, 2018; Meola, 2023). Researchers studying the career trends of Generation Z concluded that despite salary being one of the determinants of job choice, young people prefer interesting work (Gomez, Mawhinney, & Betts, 2020). This is in line with the dimensional characteristics stating that work is chosen according to the vocation of the heart. The key word for Generation Z is diversity, which reflects in terms of identity, values, talent and development of abilities. In future, work will require people with multiple abilities, interests and areas of expertise. The key competences highlighted are: digital tools and technology skills, entrepreneurship skills, creative skills and foreign language skills. Greater personalisation of career paths can be highlighted as a characteristic feature of a career of Generation Z. Another characteristic feature of Generation Z in search of perspective job relates to the organisations' contribution to the world, addressing important societal issues (sustainability, climate, hunger, etc.) (Gomez, Mawhinney, & Betts, 2020; De Vite, 2022). Thus, it is important for employers to highlight the attractiveness of their sector and cooperation with educational institutions; to develop diversified career development strategies and training programmes; and to match the employee to a role in the organisation. Consequently, the entry of Generation Z into the labour market is a challenge for organisations and employers.

Methodology

The methodology for self-assessment of career development and career readiness developed by the authors is based on the results of theoretical research as well as personal experience (reflexion of personal experience). Theoretical research directions, which are closely interrelated:

- application of quantum physics, including quantum theory transfers in social sciences, including personality psychology, to explain the ongoing changes in society, linking it to the beginning of a new phase in human development (Auzinsh et al., 2010; Compagne, 2020; Goswami, 2013; Haravijard, Yamani, & Gaulin, 2015; Lai, 2006; Maldonado, 2019; Scholz, Wessnigk, & Weber 2020).
- new trends in the new generations of society (theories of generational development and transformation) (Dimock, 2019; Gomez, Mawhinney, & Betts, 2020; Meola, 2023; Potgieter, Ferreira, & Coetzee, 2019).

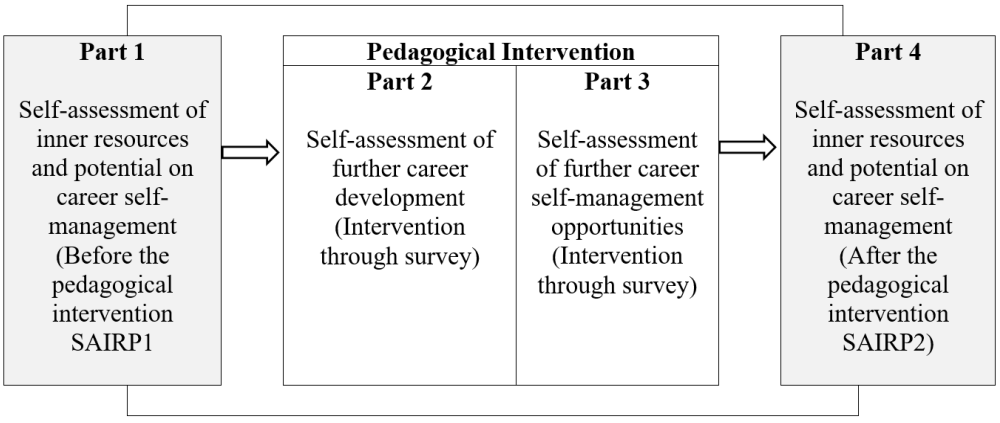
Methods of Research

To achieve the aim of the article, the following *research methods* were used: 1) theoretical research methods: studying, analysis and synthesis of scientific literature and various documents; 2) empirical research methods: formative (pedagogical) experiment and reflection of personal experience.

Data obtaining methods: questionnaire survey, but data processing method: descriptive statistics methods (Proportion coefficient, Min, Max, A, Me, Mo, Sum, values) and conclusive statistics methods (Binomial Test, Wilcoxon Test, using SPSS software).

Research period: 2022 - 2023. The 3rd study year students (prospective engineers, in total 19 respondents) participated in the research. A questionnaire developed by the authors was used for obtaining student's self-assessments in the area of career management.

The process of survey was planned as a pedagogical experiment which consisted of four parts (Figure 1). The information contained in parts 2 and 3 of the survey, in the form of formulated questions, was planned as a pedagogical intervention that affects the respondents' opinion on career self-management and its self-assessment. Therefore, the important career self-assessment questions were placed in parts 1 and 4 of the survey, which were identical because comparison of results was planned.



SAIRP1: Self-assessment of inner resources and potential before the pedagogical intervention
SAIRP2: Self-assessment of inner resources and potential after the pedagogical intervention

Figure 1 ***Structure of survey as a pedagogical experiment*** (*Created by the authors)*

The first and last (fourth) part of the questionnaire includes six self-assessment criteria: 1) my career management skills; 2) my goal orientation; 3) my readiness for unexpected

changes in my life; 4) my inner potential to achieve what I want (motivation, will, persistence, resilience, work capacity, etc.); 5) resources for my career development, incl. for my professional activity (internal mental resources: knowledge, skills, abilities, talents, competences, responsibility, experience; external resources: the demand for my profession on the labour market and a wide range of employment opportunities; financial resources, etc.); 6) my competitiveness in my chosen profession, which respondents rated on a 10-point scale (1 - very low, 10 - very high).

The second part of the questionnaire gives eight sets of alternative statements related to an individual's career. For each set of alternative statements, students had to choose only one statement from the 2 or 3 given (the one that matched their career aspirations).

The third part of the questionnaire contained 14 statements on different aspects of career and the impact of the quantum transition on career management. Each statement was rated: *yes; rather yes than no; rather no than yes; no.*

The fourth part of the questionnaire contains same criteria to the first part of the questionnaire, to be able to compare with the results obtained at the beginning of the experiment because the assessment may differ at the end of the questionnaire after the impact of the survey content on self-assessment.

Research results

At the beginning of the analysis of the results, we will present the results of the second and third parts of the pedagogical experiment (Figure 1).

● **Further career development: self-assessment of engineering students (Part 2).** As part of the developed self-assessment methodology of career self-management, engineering students self-assessed their future career development from different perspectives. The obtained results are summarized in Table 1.

Table 1 ***Results of self-evaluation of further career development of engineering students***

N	Self-Assessment Criteria	Self-Assessment Indicators	Number of choices	Proportion coefficient
1.	Necessity of career planning	You have to plan your career.	16	0.84
		You don't need to plan your career (let things happen as they will).	3	0.16
2.	Career planning competence	A student can plan his/her career.	14	0.74
		A student needs help in planning his/her career.	5	0.26
3.	Workplace status in future	State institution/enterprise.	2	0.11
		Private company.	17	0.89
4.	Planned employment status when building your career	Employer.	15	0.79
		Employee.	4	0.21
5.	Planned job location after graduation	Latvia	10	0.53
		Outside Latvia (abroad)	9	0.47
6.	Career intentions after graduation	To work in the profession chosen.	6	0.32
		Want to change your profession (you are ready to change anything in professional activities)	1	0.05
		Will work in your chosen profession, but do not rule out the possibility of changing your chosen profession at some point in your life.	12	0.63
7.	Type of job listing and payment	Fixed working hours.	6	0.32
		Piecework (willing to plan their own working hours).	13	0.68
8.	Continuing education after graduation	Will continue studies for a Master's degree.	3	0.16
		Will not continue studies for a Master's degree.	16	0.84

Source: Authors' research results
n=19

When it comes to career planning, 16 respondents (prop. coeff. = 0.84) believe that they should plan their career, and 14 respondents (prop. coeff. = 0.74) have competence in career planning. In turn, 5 respondents (prop. coeff. = 0.26) need support in building career planning competences. Today, the status of the workplace has changed. Only 2 respondents (prop. coeff. = 0.11) would like to continue working for a public institution or company, compared to 17 respondents (prop. coeff. = 0.89) for a private company. The type of employment planned for their career is also predominantly as an employer (15 choices, prop. coeff. = 0.79), compared with as an employee (4 choices, prop. coeff. = 0.21). This suggests that the trend that emerged in research on the preference of Generation Z for entrepreneurship is also reflected in the authors' research. Finding a job after graduation is another aspect of a career. Students had options - in Latvia or abroad. The data show that respondents will look for jobs both: in Latvia (10 choices, prop. coeff. = 0.53) and abroad (9 choices, prop. coeff. = 0.47). However, engineers-to-be do not rule out the possibility that they may at some point work in Latvia and then look for a job abroad. A university's ranking is driven by the future professionals who will work in their chosen profession. Only one respondent said he wanted to change profession (prop. coeff. = 0.05); 6 respondents (prop. coeff. = 0.32) think they will work in their chosen profession. In turns, 12 respondents (prop. coeff. = 0.63) will work in their chosen profession, but do not rule out the possibility of changing careers in their lifetime. Another labour market trend that emerges from the authors' study is the need to plan one's own working hours (13 choices, prop. coeff. = 0.68), and 6 respondents (prop. coeff. = 0.32) consider a job with strict limits on working hours. Every profession requires professional development, but only 3 respondents (prop. coeff. = 0.16) consider pursuing a Master's degree. This shows that young people want to be financially independent from their parents, but also to assess the relevance of the offered Master's programmes to today's labour market and the opportunities for creative activity influenced by the use of the power of thought.

● **Further career self-management opportunities: self-assessment of engineering students (Part 3).** During next step of experiment the students as prospective engineers assessed the career self-management various opportunities (Table 2).

Table 2 ***Self-evaluation of engineering students' career self-management: Binomial test results (Test Proportion: 0.5)***

N	Indicators	Groups	N	Observed Prop.	Exact Sig (2-tailed) p-value
1.	I have enough information to plan my career	Yes	15	0.79	0.019
		No	4	0.21	
2.	I think about using my skills and talents in my professional life	Yes	17	0.89	0.001
		No	2	0.11	
3.	I know the requirements applicable to a representative of my chosen profession	Yes	18	0.95	0.000
		No	1	0.05	
4.	I have the knowledge, skills and abilities required for a representative of my chosen profession	Yes	16	0.84	0.004
		No	3	0.16	
5.	I know what I want to achieve in my professional activity	Yes	16	0.84	0.004
		No	3	0.16	
6.	I know what I want to achieve in my life	Yes	18	0.95	0.000
		No	1	0.05	
7.	I like to be independent and self-reliant	Yes	17	0.89	0.001
		No	2	0.11	
8.	I try to do everything better than others	Yes	3	0.16	0.004
		No	16	0.84	
9.	After graduation, I will participate in volunteering	Yes	2	0.11	0.001
		No	17	0.89	

N	Indicators	Groups	N	Observed Prop.	Exact Sig (2-tailed) p-value
10.	I can set goals for 1-2 years according to my resources (including energy)	Yes	12	0.63	0.359
		No	7	0.37	
11.	I always achieve my goals	Yes	3	0.16	0.004
		No	16	0.84	
12.	Whatever I do, I think about saving my energy	Yes	12	0.63	0.359
		No	7	0.37	
13.	I have heard of the quantum transition in career management	Yes	16	0.84	0.004
		No	3	0.16	
14.	I know how the quantum transition affects personal career management	Yes	17	0.89	0.001
		No	2	0.11	

Source: Authors' research results
n=19

The results of the binominal test indicate that 15 respondents (prop. coeff. = 0.79; p =0.019) have sufficient information for career planning. However, 4 respondents (prop. coeff. = 0.21) lack it. In the field of careers, it is important to put your skills and talents to work: 17 respondents (prop. coeff. = 0.89; p =0.001) understand their importance, but 18 respondents (prop. coeff. = 0.95; p =0.000) also know the requirements of their chosen profession. The majority of respondents (16 choices, prop. coeff. = 0.84; p =0.004) believe that they have the knowledge, skills and abilities needed to enter the engineering profession. People move forward when they are aware of what they want to achieve in their professional activity (16 choices, prop. coeff. = 0.84; p =0.004) and in life in general (18 choices, prop. coeff. = 0.95; p =0.000). This shows that future engineers are thinking about what they want and need to achieve in their careers and in life. In the twenty-first century, the personality must be independent and autonomous. Respondents (17 choices, prop. coeff. = 0.79; p =0.001) also like to be independent and self-reliant. Only 3 respondents (prop. coeff. = 0.16; p =0.004) try to do everything better than others. Two students are currently considering volunteering. When setting goals, one should be aware of his resources, including the amount of energy needed to achieve them. Twelve of future engineers (prop. coeff. = 0.63; p = 0.359) can do this, setting goals for 1-2 years. Sixteen respondents (prop. coeff. = 0.63; p =0.004) say that they do not always achieve their goals, and that they need the knowledge and skills to achieve their goals. In scientific papers on Generation Z, the idea of saving energy came up. In a study by the authors, 16 respondents (prop. coeff. = 0.63; p =0.359) also think about saving energy when doing any work. The quantum transition is a 21st century phenomenon that affects both the individual as a whole and their career management. The have heard of quantum transitions in career management (16 choices, prop. coeff. = 0.84; p =0.004) and are aware of the impact of quantum transitions on an individual's career management (17 choices, prop. coeff. = 0.89; p =0.001). Thus, career issues are relevant to young people and they need support on career management in the new conditions.

● ***Results of formative (pedagogical) experiment (Part 1 and Part 4 and comparing their results).*** The survey based on the developed methodology served not only as a tool for data collection, but also as a measure of pedagogical influence, as the questions in the questionnaire both informed and educated, and allowed to self-assess their knowledge and skills in career management, including career planning. Before and after the approbation of the developed methodology, engineering students self-assessed inner resources and potential on career self-managementaccording 6 criteria (Table 3).

The aim of the pedagogical intervention was to influence students' self-assessment according to these 6 assessment criteria during the survey, which essence was a pedagogical experiment, by measuring the differences between self-assessment at the beginning and at the end of the experiment (Figure 1). Before and after the survey participants rated their inner

resources and potential on career self-management: career management skills, resources, ambition, motivation, competitiveness, etc., on a 10-point scale, with '1' being very low and '10' being very high.

The primary processing of data obtained in the pedagogical experiment resulted in descriptive statistics (Table 3).

Table 3 ***Results of self-assessment of inner resources and potential on career self-management before and after the pedagogical intervention: Descriptive statistics***

N	Self-assessment criteria	Time	Min	Max	A	Me	Mo	Σ
1.	Students' career management skills	Before	3	10	7	7.00	7	134
		After	5	9	4	7.00	8	132
2.	Students determination	Before	5	10	5	8.00	7	145
		After	5	10	5	8.00	8	150
3.	Students' readiness for unexpected changes in their lives	Before	2	1 0	8	8.00	8	137
		After	4	10	6	8.00	8	139
4.	Students' inner potential to achieve what they want (motivation, will, resilience, perseverance, work capacity, etc.)	Before	4	10	6	7.00	6	138
		After	6	9	3	7.00	7	143
5.	Students' resources for their career development, including professional activities	Before	3	10	7	7.00	7	134
		After	5	10	5	8.00	8	145
6.	Students' competitiveness in their chosen profession	Before	1	10	9	7.00	7	132
		After	6	10	4	8.00	7	149

Source: Authors' research results
n=19

The results of the descriptive statistics show that for all six evaluation criteria, there were changes in the students' self-assessments during the pedagogical experiment (as a result of the validation of the developed methodology).

It was important to find out how significant these changes are. Therefore, secondary data processing was performed to obtain inferential statistics (Table 4).

Table 4 ***Wilcoxon Test Results: Conclusive Statistics***

N	Two sets of features to be compared	Differences	Results achieved	Conclusions
1.	Students' career management skills (Before - After)	Negative=4 Positive=5 Ties=10	p-value = 0.952 > α=0.05	Good coincidence
2.	Students' determination (Before - After)	Negative=3 Positive=6 Ties=10	p-value = 0.509 > α=0.05	Good coincidence
3.	Students' readiness for unexpected changes in their lives (Before - After)	Negative=7 Positive=7 Ties=7	p-value = 0.680 > α=0.05	Good coincidence
4.	Students' inner potential to achieve what they want (motivation, will, resilience, perseverance, work capacity, etc.) (Before - After)	Negative=5 Positive=8 Ties=6	p-value = 0.244 > α=0.05	Weak coincidence
5.	Students' resources for their career development, including professional activities (Before - After)	Negative=1 Positive=8 Ties=10	p-value = 0.018 < α=0.05	Substantial differences
6.	Students' competitiveness in their chosen profession (Before - After)	Negative=0 Positive=9 Ties=10	p-value = 0.005 < α=0.01	Highly substantial differences

Source: Authors' research results
n=19

The results of the research show (Table 4) that for criteria 1-3 (career management skills, goal orientation, readiness for change) there were no significant changes in students' self-assessments, as the p-value=0.509 ...0.952, which means that there is a good coincidence between self-assessments before and after validation of the authors' methodology during the questionnaire. The self-assessment of the internal potential after the methodology validation differs from the self-assessment before the validation (criterion 4), but the p-value=0.244 shows that these differences are not significant, but the coincidence is already weak, so there are differences.

Substantial and highly substantial changes during the pedagogical experiment occurred in students' self-assessments according to criteria 5-6: students' internal and external resources and competitiveness in the chosen profession (p-value = 0.005 ... 0.018).

Based on the results of the study, the authors developed a course on *Quantum Transition and Individual Development* (course amount 2 credit points (CP). The aim of the course is to promote understanding of the quantum transition theory transfers using they in the career self-development and self-management and show the possibilities for human, each member of society development under nowadays changeable conditions. The course covers topics such as: the impact of the quantum transition on the human being; what is the transcendent personality; personality characteristics at each level (3D to 5D); the mission and the career of women and men; matter, the power of thought; the evolution of energy and human bodies; unconditional love; unity and overcoming duality etc. This choice course is the part of career guidance and will be implemented using a variety of methods - gallery, zigzag, cube, insert methods, Phillips method, role play, free association method, visualisation, practical exercises. The study course is delivered through a mix of lectures and practical sessions.

Conclusions

Modern sciences are characterized by interdisciplinary and transdisciplinary research, using the transfer approach, when the phenomena, laws, causations, and correlations discovered in one science are transferred and applied to research conducted in other sciences. The authors are aware of several examples when natural and exact sciences paradigms and approaches are used in social sciences, including new directions and trends of psychology. In this study, the authors, using the transfer of quantum physics in social sciences, investigated university students as prospective engineers' understanding of their career, career self-direction and self-management and future intentions in the context of a changing world.

The foundations of quantum physics can be traced back to the ancient world, but the fundamental ideas of modern quantum physics were formulated in the 20th century (M. Planck, E. Schrödinger, N. Bohr, A. Einstein, etc.). Quantum physics studies the interactions of small particles (atoms, molecules), including electrons, protons, neurons, exotic quarks and gluons. Quantum physics, chemistry and biology have been the subject of much experimental research in this century and are now more philosophically fundamental. Research in quantum physics has influenced the development of new technologies (smartphones, 5G internet, computers, etc.).

Today, quantum physics has an impact not only on the development of new technologies, but also on other areas of science, including the social sciences (pedagogy, psychology, communication, etc.). Quantum theory first changes the understanding of consciousness and its role, because consciousness determines human existence. In the social sciences, quantum physics research is becoming more integrated into neuroscience and psychology. Quantum phenomena are used to understand certain concepts (Heisenberg Uncertainty Principle, Bohr Complementarity Principle, quantization, discreteness, the influence of the observer on the observed).

Today, the concept of career covers the whole of a person's life (work, family, civic competence, leisure and spirituality), while career management is a lifelong process. In the 21st century, we talk about self-managed careers. Students need experience in career management. In the absence of career centres in high schools, you can gain this knowledge and experience in a number of courses (Engineering, Engineering Psychology, Fundamentals of Professional Activity, Internship, etc.). In turn, the quantum transition will reveal the human capacity, the availability of information from the information field of the Universe, the ability to make decisions with the soul, in general the evolution of the soul and arriving at one's own mission.

Quantum transition is a process that takes place at all levels (physical, material and spiritual). It is the transition from today's 3D reality to the 5D level, where the 4D level is a 'gateway' to the higher 5D level. There are also higher levels - 6D, 7D, etc - but at the moment the more significant changes are happening at these levels. This means that the process will affect all areas of life - economics, education, politics, medicine, information technology, etc. Of course, the changes also affect people, whose potential will evolve according to how high their spiritual vibrations are.

Nowadays career management theories are developing and changing under the influence of the quantum transition paradigm, the synergetic paradigm, thus the perception of career and the understanding of career have also changed. A career covers the whole life of a person and is individually driven. So, we can speak of a self-directed personal career, which is connected with finding one's mission in life, one's vocation. So, moving into the fourth and fifth dimensions opens up more possibilities for finding your purpose: 1) motivated individual choice; 2) career management based on that choice; 3) transition from survival to mission; 4) access to the information field of the Universe; 5) discovery of new abilities – telekinesis, teleportation, clairvoyance, clairaudience, etc.

Results of *Self-evaluation of further career development of engineering students* testify that the following criteria and indicators had the largest number of choices: 1) criteria *Workplace status in future*: indicator *Private company* - 17 choices (prop. coeff. = 0.89); 2) criteria *Necessity of career planning*: indicator *You have to plan your career* - 16 choices (prop. coeff. = 0.84); 3) criteria *Continuing education after graduation:* indicator *Will not continue studies for a Master's degree* – 16 choices (prop. coeff. = 0.84); 4) criteria *Planned employment status when building your career*: indicator *Employer* - 15 choices (prop. coeff. = 0.79); 5) criteria's *Career planning competence* indicator: *A student can plan his/her career* - 14 choices (prop. coeff. = 0.74).

Results of *Self-evaluation of engineering students' career self-management* testify that the following indicators had the largest number of choices: 1) *I know the requirements applicable to a representative of my chosen profession* – 18 choices ((prop. coeff. = 0.95); 2) *I know what I want to achieve in my life* – 18 choices (prop. coeff. = 0.95); 3) *I think about using my skills and talents in my professional life* – 17 choices (prop. coeff. = 0.89); 4) *I have the knowledge, skills and abilities required for a representative of my chosen profession* – 16 choices (prop. coeff. = 0.84); 5) *I know what I want to achieve in my professional activity* – 16 choices (prop. coeff. = 0.89).

The obtained high-level results testify that students have sufficient employability potential, which largely indicates their competitiveness.

The obtained low-level results indicate that the students are not yet ready to lifelong learn and develop professionally throughout his life, is not ready for changes in his chosen career, which indicates a certain inflexibility in thinking and acting. It is precisely these qualities that are very necessary in self-management of a sustainable career. This means that career support services should continue to be offered to promote career self-development and self-management under changing conditions (closely related to quantum transition theory).

The results of the study show that there have been no significant changes in students' self-assessments of career management skills, goal orientation, readiness for change (p-value = 0.509 ... 0.952). This means a good coincidence between the self-assessments before and after the approbation of the authors' methodology during the survey. This means that the previously provided student career support at the university has given good results, the students already at the beginning of the experiment had quite high and high self-esteem in several indicators, so the effect of the pedagogical intervention during the experiment was not so effective.

Self-assessment of internal potential after methodology approval differs from self-assessment before approbation, but not significantly, as p-value = 0.244 shows that the coincidence is weak, and the differences are marked. During the formative (pedagogical) experiment, significant and very significant changes occurred in students' self-assessments according to the following criteria: students' internal and external resources, competitiveness in the chosen profession (p value = 0.005 ... 0.018). This means that during the survey, the self-assessment of internal resources according to these indicators was influenced by the information obtained during the survey from the content of the questionnaire, which allowed for a more adequate self-assessment at the end of the experiment.

As the quantum transition is happening very fast, it would be useful to introduce students to what is happening in the Universe as a whole and in humans. This will be done through the course *Quantum Transition and Individual Development* elaborated by the authors. It will help future engineers to better understand what is going on in the Universe, in humans and what resources can be discovered by moving to higher levels and how to use these resources in real life.

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