Introduction

The relevance of the study

In the context of the changing of the Russian education system the issue of realization of the postulate “lifelong education” is of particular relevance, due to significance of lifelong education for the state, society and every person. The integration of the individual, social aspects of the personality and activities is very important in education. Therefore, the identification of the personal importance of lifelong professional education is a current problem nowadays.

In the first aspect lifelong education characterizes one of the important spheres of social policy to ensure favorable conditions for the social and professional development of the personality of every citizen, as enshrined in the Law On...
Education in the Russian Federation as one of the basic principles of state policy in the sphere of education - "to provide the right for lifelong education in accordance with the needs of the individual "[9, p. 3].

In the social aspect lifelong education is a mechanism of the expanded reproduction of professional and cultural potential of society and the acceleration of socio-economic progress of the country [1, p.168].

According to the concept of (Lengrand P. 1965) "Lifelong Education" is considered as a lifelong process, in which the integration of both individual and social aspects of the human personality and its activity are important [7]. The author emphasizes that understanding the phenomenon in this way, the traditional division of life into the period of study and labor becomes unnecessary, because a person, its individuality appears as the main value of all the processes occurring in the world. Thus, in the personal aspect lifelong education is a means of formation and satisfaction of cognitive needs and spiritual needs of man, of his instincts and abilities, both in educational institutions, as well as through self-education. The main purpose of the education is to create conditions for the most complete development of man's abilities throughout life.

In philosophy, the concept of "continuity" describes the structure of matter and the process of its development, and expresses the unity, interconnection and interdependence of the elements that make up a particular system [4, p.169]. Taking into account this definition, lifelong education is a process of growth of educational (general and vocational) potential of the person during his life, according to the needs of the individual and society [1, p.168]. A system of Lifelong Education is a set of tools, methods and forms of acquisition, general education development, professional competence, culture and training of civil and moral maturity [10, p.122]. Its goal is to create favorable conditions for the common cultural, social and professional development of the individual in different periods of life.

The “principle of continuity” is the methodological basis of lifelong professional education system, which considers professional education as its ongoing development, dissected into a number of series connected stages, each of which creates the preconditions for the transition to a new, more a high level of development [6].

In teaching, the principle of continuity is treated as a "unity of the cognitive and transformative, teaching and training, constant updating of the educational process" [10]. This principle expresses the essence of the new concept of vocational education in Russia, aimed at generating higher-quality results while reducing total public investment of time, training and pedagogical work, material resources invested in this sphere, by one of the educational outcome. This can be achieved by continuously improving the quality of all parties of the educational activity. The personal aspect of the problem of continuity of education reflects the process of identity formation in a consistent promotion of human to ever greater achievements in their educational level, which involves passing several levels: literacy, education, competence, culture [2]. The personal aspect is intended to increase training focus not only on the decision of problems of professional education (increasing knowledge, skills and abilities necessary for independent professional activity), but also to improve quality, enable to increase the activity
of the individual in various spheres and effectiveness of existing professional activity. This is made possible through the use of competence approach.

Considering the definition of competence as a set of necessary knowledge, skills and personal qualities which let us solve problems in the professional sphere [8, p.67], we suggest that the level of development of the personality is associated with its readiness to professional activity and the possibility of self-realization in a professional sphere. So, the essence of the process of lifelong professional education lays in the moving up the stages of training, reflecting various degrees of readiness of person for professional work. An important aspect is to track the intermediate results of the process at different stages of training.

The Russian Federation and Russian society need specialists who are ready and capable of continuing professional self-improvement, that’s why is necessary to develop research-based theoretical and practical recommendations on the direction of activities in connection with the changing socio-economic situation, the labor market needs, changes in the education system and so on.

The importance of this issue is recognized by lectures (according to the survey 76% of college teachers and 82% of university lectures), as well as by the trainees (59% of vocational school students and 81% of university students). However, in the process of questioning, negative points have been identified: the lectures indicate a low level of readiness of students for self-education, a weak awareness of the possible prospects for personal growth at the various levels of vocational training. Students point to the lack of relevant information and a lack of theoretical and practical training.

**The experimental base of the study**

At the stage of training at the University, principle of continuing is realized through the establishment of continuity of the content of training and coordination of curricula in vocational and higher education.

We researched the possibility of constructing a process of lifelong professional education on an example of training students in the field of study “Professional Education” at Shadrinsk State Pedagogical University, the Branch of the Tyumen Industrial University, Bashkir State Pedagogical University with a view of the training of students in the specialty “Vocational training” (Service of Transport and Transport-Technology Machinery and Equipment). At the same time we note that the training is understood by us as an educational system which involves the creation of conditions for the development of the personality of the future specialist on the basis of mastering of the necessary professional knowledge, skills and abilities, and the development of professional and personal-significant qualities that ensure the effectiveness of the chosen activity [5].

To ensure the continuity of the training process in educational institutions of secondary and higher education we have analyzed education curricula, highlighted items, which contribute to the formation of specific professional competencies.

The continuous development of future professional identity is based on the harmonization of competencies, formed in educational institutions database. So, in the conditions of vocational school in this specialty such competence should be formed:
- to organize its own activities, choose the typical methods and techniques for performing professional tasks, to assess their effectiveness and quality;
- to search for and use of the information necessary for the effective performance of professional tasks, professional and personal development;
- use of information and communication technologies in professional activity;
- to determine the problem of professional and personal development, self-education, consciously planned training;
- to carry out professional activities in the conditions of updating of its objectives, content, technology shifts.

According to the federal state standards of higher education of the trainees such competence should be formed:
- the ability to self-organization and self-education;
- the ability to design and implement individual and personal concept of professional activity;
- the willingness to analyze the information to solve problems in professional activity;
- possession of a system of heuristic methods and techniques, and others.

Self-organization is very important in the professional field of competence, as this activity is quite difficult and requires specific actions of both students and lectures.

All the mentioned competences can be successfully formed by teaching such disciplines as: "The General and Vocational Pedagogy", "Foreign Language", "Information Technologies in Professional Work", etc. These items are presented in the curricula of Shadrinsk State Polytechnic Vocational School and Shadrinsk State Pedagogical University with a degree "Vocational training".

The discipline "General and Vocational Pedagogy" has significant potential and provides students with general theoretical knowledge of professional pedagogy (the essence, methods, tools, forms, professional and educational activities, etc.), but also gives an idea of professional lecture competence, ways of its development on the basis of self-education.

At the level of higher education training, basing on the previous level knowledge students broaden and deepen them, indicate possible spheres of professional and personal growth. Students have additional possibilities for the development of the considered competences; they can choose new disciplines (Actual Problems of Professional Pedagogy, Pedagogical Technologies, Methods of Scientific Research in order to develop organization skills and the self-educational activity, to raise the level of theoretical knowledge.

The principle of continuity can be traced in the study of disciplines, which are included in the humanities cycle of higher and vocational education at the department of vocational and higher education of Tyumen Industrial University.

Learning a foreign language forms all the mentioned competencies and provides students with theoretical and practical skills, creates the ability to
communicate orally and in writing in Russian and foreign languages in interpersonal and intercultural communication.

At the level of the higher education at the Branch of Industrial University of Tyumen and Bashkir State Pedagogical University students study disciplines: "Business English" and "Russian and Speech Culture", “Pedagogical Rhetoric”. Studying of these disciplines is based on previously acquired knowledge, the students improve communication skills, master modern production methods, conversion and use of information; improve the skills of independent work with educational, reference books, ability to make and execute scientific, technical and service documentation; realize their creative activity.

It is important to note that the implementation of the continuity of the various levels of vocational education is not the only factor that increases the effectiveness of the process of formation of competence outlined above. The significant potential in solving this problem has the establishment and implementation of interdisciplinary connections [3], allowing to update and integrate all the features of the various disciplines (Table 1).

Table 1: Features of disciplines in the formation of students' competencies related to professional and personal development, self-education

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Level of Education</th>
<th>The goals and objectives</th>
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<tbody>
<tr>
<td>General and professional pedagogy</td>
<td>Vocational Education</td>
<td>The goal - the formation of the theoretical readiness of students to professional and educational activities. Objectives: - the formation of ideas about the teaching profession; - assimilation of the theoretical knowledge on the organization and implementation of professional educational activities (content, methods, tools, forms, etc.); - the development of interest in educational activities; - formation of positive motivation for professional self-improvement, self-education.</td>
</tr>
<tr>
<td>General And Professional Pedagogy</td>
<td>Higher Education</td>
<td>The goal - improving the theoretical readiness of students to professional and educational activities. Objectives: - acquisition of knowledge of the functional characteristics of the teaching profession; - expansion and deepening of theoretical knowledge on the organization and implementation of professional educational activities (nature, content, methods, tools, forms, etc.); - formation of interest in educational activities;</td>
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<tr>
<td>Actual Problems Of Professional Pedagogy</td>
<td>Vocational Education</td>
<td>- encouraging positive motivation for professional self-improvement, self-education.</td>
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<tr>
<td>Actual Problems Of Professional Pedagogy</td>
<td>Higher Education</td>
<td>The goal - improving the theoretical readiness of students to professional and educational activities. Objectives: - acquisition of knowledge about contemporary issues of vocational pedagogy; - formation of interest in educational activities; - encouraging positive motivation for professional self-improvement, self-education.</td>
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<tr>
<td>Teaching Technology</td>
<td>Vocational Education</td>
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<tr>
<td>Teaching Technology</td>
<td>Higher Education</td>
<td>The goal - improving practical readiness of students to professional and educational activities. Objectives: - formation of skills for the organization and implementation of professional educational activities (technologies, methods, tools, forms, etc.); - formation of interest in educational activities; - the development of skills and the organization of the self-educational activity.</td>
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<tr>
<td>Methods of Scientific Research</td>
<td>Vocational Education</td>
<td>-</td>
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<tr>
<td>Methods of Scientific Research</td>
<td>Higher Education</td>
<td>The goal - improving the practical preparedness of students to study professional-pedagogical activity. Objectives: - Formation of skills for the organization and implementation of a research professional and educational activities (methods, techniques, etc.); - Formation of interest in the research of pedagogical activity;</td>
</tr>
</tbody>
</table>
| Foreign Language | Vocational Education | The goal - the formation of theoretical and practical preparedness of students to use a foreign language in professional activity. Objectives:  
- the formation of ideas about the possibilities of using a foreign language in self-education and professional self-improvement;  
- assimilation of the theoretical knowledge on the use of foreign language in professional activity;  
- formation of skills on the use of foreign language in professional activity;  
- formation of positive motivation to use a foreign language for professional self-improvement in activity, self-education. |
| Foreign Language | Higher Education | The goal - improving the theoretical and practical preparedness of students to use a foreign language in professional activity. Objectives:  
- expansion and deepening of theoretical knowledge on the use of foreign language in professional activity;  
- formation of skills on the use of foreign language in professional activity;  
- encouraging positive motivation for professional self-improvement, self-education. |
<p>| Business English | Vocational Education | - |</p>
<table>
<thead>
<tr>
<th>Course</th>
<th>Level</th>
<th>Objectives</th>
</tr>
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</table>
| Business English              | Higher Education | The goal - improving the initial level of foreign language knowledge, achieved at the previous level of education, and master the necessary level of competence for the solution of social and communicative tasks in different areas of cultural, professional and scientific activities, dealing with foreign partners, in the preparation of the scientific work, and to further self-education. Objectives:  
- development of students' ability to self-study for professional communication in a foreign language - raising the level of educational autonomy, the ability to self-education, to work with multimedia applications, electronic dictionaries, foreign-language resources on the internet;  
- the development of cognitive and research skills, broaden their horizons and increase of information culture of students;  
- the formation of ideas about the basics of intercultural communication, education, tolerance and respect for the spiritual values of different countries and people;  
- vocabulary and the formation of terminological apparatus in a foreign language within the professional sphere. |
| Russian language and culture of speech | Vocational Education | The goal - improving the initial level of proficiency in Russian, made at the previous level of education, the mastery of the required level of linguistic and communicative competence for solving a number of social and communicative tasks. Objectives:  
- improving the skills of compliance with the modern Russian literary language;  
- improvement of functional literacy; |
<table>
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<tr>
<th>Pedagogical Rhetoric</th>
<th>Higher Education</th>
<th>- teaching drawing and text editing socially meaningful content.</th>
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<tbody>
<tr>
<td><strong>Russian language and culture of speech</strong></td>
<td>Higher Education</td>
<td>The goal - improving knowledge of the Russian language, made at the previous level of education, and the necessary level of mastery of language, language, communication, cultural studies competencies to address the social and communicative tasks in different areas of professional and other social activities.</td>
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<td><strong>Objectives:</strong></td>
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<td>- the development of a culture of thinking and the ability to formulate and express their thoughts;</td>
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<td>- more complete than the previous level of education, the mastery of the rules of use of Russian as the state language;</td>
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<td>- improvement of functional literacy;</td>
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<td>- teaching drawing and text editing socially meaningful and professional content.</td>
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<tr>
<td>Pedagogical Rhetoric</td>
<td>Vocational Education</td>
<td>-</td>
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<tr>
<td>Pedagogical Rhetoric</td>
<td>Higher Education</td>
<td>The goal - the formation of speech culture of the future teacher.</td>
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<td></td>
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<td><strong>Objectives:</strong></td>
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<td>- improving the skills of compliance with the use of Russian as the state language;</td>
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<td>- teaching drawing and text editing socially meaningful and professional content;</td>
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<td>- formation of public speaking skills of discussion and debate;</td>
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<td>- the development of teaching of speech etiquette requirements.</td>
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Methods of study

We used methods of analysis of the scientific literature, the synthesis of philosophical and pedagogical positions to determine the nature of the continuity principles, methods of mathematical statistics in order to prove the results of the study.

Conclusion

Checking the formation of the students’ competence in the field of self-education was carried out in a higher education. The definition of the impact of the research was associated with the assessment of the formed level of test quality. It was carried out through the integration of its components changes: cognitive, activity, personal components. The main methods were selected: testing (testing and assessment of cognitive readiness components - theoretical knowledge), observation, expert assessment (testing and evaluation of the activity and personal preparedness components - practical skills, personal characteristics).

In the experiment 6 groups were involved: 3 - experimental, in which the totality of activities was implemented and contributed the implementation of the principle of continuity in vocational education and to establish the continuity of vocational training at the levels of secondary and higher education, and 3 control groups, where training of students was carried out without introducing new conditions. The final data were processed by methods of mathematical statistics.

Comparing the input, intermediate, final results in the experimental groups showed that an intermediate data improved. The number of students with a high level of development of competencies has increased by 15.7%, the average rate increased by 10.6%. In control groups, the increase was marginally higher - by 8%, average - 9%.

Thus, the implementation of the principle of continuity of training in the conditions of the establishment of organizational and substantive linkages of vocational training of students in institutions of vocational and higher education determines that it is necessary to build an integrated and variation system of lifelong vocational education that provides personal and professional development of person in different periods of his life.

Disclosure statement

No potential conflict of interest was reported by the authors.

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References