Novice university educators: professional, psychological and motivational spheres of adaptation

I. A. Karpovich¹*, T. N. Krepkaia², L. S. Voronova³, P. Combarros-Fuertes⁴

¹²³Peter the Great St.Petersburg Polytechnic University, St.Petersburg, Russian Federation
⁴ University of León, León Spain

*E-mail: karpovich.ia@flspbgpu.ru

Abstract. The article is focused on the issue of adaptation of novice university teachers. The purpose of this study is: 1. to assess the professional readiness of the novice university educators; 2. to find out the problems they face in professional, psychological and motivational spheres; 3. to compare the frequency of the detected problems within the groups of novice teachers with 1-3 year and 3-5 year experience. The article presents the results of a study conducted among novice educators (N 40) at Peter the Great St. Petersburg Polytechnic University. Results made it possible to figure out the main problems teachers face in professional, psychological and motivational spheres of induction process. Comparison of novice teachers (1-3 year experience) and young teachers (3-5 year experience) resulted in the findings that although there is a positive tendency in all the spheres of adaptation, the difference between the values of novice and young teachers is in most cases statistically insignificant. It makes it possible to conclude that university educator with experience of about 5 years still need support that can be provided by mentoring and individual assistance, performed in the form of on-the-job training, instructional interactions with mentors and experienced colleagues.

1. Introduction

Difficulties novice face at the stage of induction can increase the general tension, lead to emotional burnout and result in intentions to give up teaching. Solving this problem is regarded as an urgent task both for education authorities and pedagogical community [1]. Novice teachers no matter whether they work at school, college or university are commonly reported to face problems with workload manageability and difficulties related to coping with stress and emotional burnout. Studies focused on the relationship between self-efficacy and feelings of burnout show that the participants' self-efficacy has a reverse relationship with their burnout [2]. Burnout is defined as a result of long term job-related stress, especially among human service workers such as teachers [3]. This tendency can be noticed in educational establishments all around the world. [4-13]. Research in general education has indicated that 24% of novice teachers leave teaching within the first year, 33% drop out after three years and between 40% and 50% leave within the first five years. This indicates that novice teachers may experience a difficult beginning to their teaching career [14]. Despite the fact, that this issue is studied there is no single solution on how to cope with this problem.

It is a well-known fact that if novice teachers do not receive appropriate support at the initial period of their career it can lead to the felling of low self-esteem, personal dissatisfaction, high level of anxiety, increased fatigue and as a result emotional exhaustion and burnout [2;5;15-17]. Burnout is
usually referred to as a work-related syndrome entailed by the individual's perception of a significant gap between expectations of successful professional performance and an observed, far less satisfying reality [15]. This state can be entailed by the nervousness related to the fear of being appraised and possibly criticized by more experienced colleagues. Research focused on the novice teachers’ perceptions of their professional agency during the initial years of work concluded that most of the educators who took part in the experiment felt that they would have to renegotiate their professional identities and re-assess their professional ideals and ethical standards. It was explained by the lack of competence in providing learners with psychological support. Close collaboration and support from other teachers in difficult everyday situations is often seen as crucial for the teachers’ survival in the practical school context [11].

These psychological difficulties overlap with the workload and responsibilities novice teachers face. As it was found by Bettini and colleagues (2017) there is an obvious relation between workload manageability and emotional exhaustion. Generally speaking, if a novice teacher regards workload as less manageable, he or she is more likely to experience emotional exhaustion and less likely to intend to continue teaching [4].

Induction of a novice teacher can be referred to as a process and a result of active self-adjustment to the new working environment, which is linked to formation of new social relationships and learning how to manage workload and cope with new responsibilities. The results of studies suggest that the cultures of an educational institution and the system applied there are much more important than the individual teacher's ability, as they enable novice teachers to apply the teaching methods they were trained to use [13]. The comprehensive nature of the process makes it possible to talk about professional and psychological spheres of novice educators’ adjustment. Besides that, we consider it important to define one more aspect – a motivational one.

Under the term of professional adjustment, we understand both the process and the result of self-adjustment to new professional responsibilities and working conditions that makes it possible to achieve high working efficiency as soon as possible. This term is closely connected to workload manageability. Besides that, this sphere is closely related to the concept of prior knowledge. The comparative case study carried out with the novice and expert teachers shows how novice and expert teachers understand the concept of prior knowledge and how they use this knowledge to make instructional decisions. Findings suggest that expert teachers have a more complex conception of prior knowledge and make use of their students’ prior knowledge in significantly better ways than their novice colleagues [18]. Researchers investigate the relevance of such indicators of teachers’ sense of their professional identity as job satisfaction, occupational commitment, self-efficacy and change in level of motivation. Suggested results show that classroom self-efficacy and satisfaction with the established relationships influence the relation between the indicators [19]. Self-efficacy is regarded as confidence in being able to engage in the social interaction, initiate and maintain interpersonal relationships. Professional sphere can be regarded as a difficult one since it requires experience. It is proven by the fact that the level of visual expertise differs within the groups of expert and novice teachers. As a result expert teachers are more likely to be able to simultaneously perceive and interpret classroom situations. Results of the study show that novices’ viewing is more dispersed and scattered across the classroom whereas experts are more focused on the areas with relevant information. Experts also tend to monitor more areas than novices, and their word usage is associated with a higher frequency of words referencing cognition, perception, and events than novices [20].

Psychological aspect of adjustment is related to the self-adjustment to the norms, rules and patterns of social behavior typical for a group of people, who comprise the working environment [21]. This aspect also deals with the problem of fairness. The studies suggest that issue of "fairness" troubles most novice teachers. It can be concluded from the data obtained from examining teachers' concerns about fairness. According to the researchers it refers to such areas as dealing with students, classroom applications (e.g. grading) and negative views [22]. Individual personal qualities and such characteristics as absence of conflicts, stress resistance and satisfaction with working conditions and established relationships can be used for evaluation of the induction process [23 - 26]. Experiments
prove that the resilience building process is closely linked to teacher retention. Results suggest that the interaction between stressors and protective factors acts as a primary force in the resilience process and elimination of negative effects of stress [24]. Moreover, the problem of linking teacher effectiveness and retention to factors observable at the recruitment stage is regarded as an acute one, since it is important to be able to assess personal qualities of novice teachers objectively. Researchers suggest that personal qualities can be estimated by collecting biographical data connected to the issue of perseverance and passion for long-term goals, obtained through the analysis of college activities and work experience extracted from teachers' résumés. Such information (e.g., SAT scores, college GPA, interview ratings of leadership potential) is helpful for candidates' assessment at the recruitment stage. The results show that novice teachers who outperformed their colleagues were less likely to leave their classrooms mid-year [27]. These data were used in our research at the interview stage in order to evaluate the readiness of the novice teachers to carry out their professional tasks.

Motivational aspect of adjustment is connected to the positive attitude to work and willingness to carry out professional duties and activities. It involves the comprehension of their experience, personal development and self-improvement, the desire to improve the level of knowledge of the taught discipline and skills [19; 26; 28-30]. It is often connected with the perception of working responsibilities and expectations. According to self-reports of novice teachers' experiences in their first year of teaching their expectations differ a lot from what they get in reality [15].

All these spheres can be examined with the help of COR theory, which has been widely used for examination of employees' responses to workloads [31]; [32]; [33]. This theory concludes that the more resources an employee has the better he or she manages workload and meets demands. To the contrary those whose resources are insufficient to meet demands tend to experience negative consequences, such as emotional exhaustion, fatigue, burnout and attrition. Education studies have demonstrated the utility of COR theory for examining novice educators' workload manageability [4; 34].

According to the study carried out by A. Bettini and colleagues, to support novices in managing their workloads, educational authorities could either (a) reduce demands or (b) provide more resources. The first option cannot be applied to university educational process, as the employment contract states both the workload and job responsibilities, so that they are not supposed to be changed. Another option for helping novices to improve their workload manageability would be to provide more resources. The concept of resources is understood as anything necessary to attain goals, including material, temporal, and social resources [35].

The aim of this work is to define the problems university novice educators face, assess the process of their professional self-adjustment and to figure out the resources that can be used in order to provide social, professional and psychological support to the novice teachers. The aim of this research was to describe the difficulties novice teachers have at the initial stage of their working experience and based on the detected problems find out the resources that can be used for facilitation of the self-adjustment process. Research questions are as follows:

**Research Question 1 (RQ1):** How to assess the professional readiness of novice university educators?

**Research Question 2 (RQ2):** What problems do novice teachers, with experience of less than 3 years, face in professional, psychological and motivational spheres of induction?

**Research Question 3 (RQ3):** Do these problems remain the same within the group of university educator with the working experience from 3 to 5 years.

## 2. Methods

An exploratory inductive approach was adopted in this study aimed at determining 1) problems a novice teacher face in professional, psychological and motivational spheres of induction, 2) resources that can be used to eliminate the detected problems. The researchers applied the quantitative method to collect data using a questionnaire and an interview with the Head of department. The questionnaire, we believe, is the most appropriate instrument for the present study, which will ensure insights into the
problem, maximize the use of respondents’ time and facilitate the data analysis. The study involved quantitative data analysis followed by the descriptive statistical analysis and the correlation analysis, which provided the researchers with new insights and detailed results. The study was conducted in two stages. At the first stage (spring semester, 2017-2018 academic year) the researchers assessed the readiness of novice educators to carry out their professional duties. The assessment was based on the results of a computer-based appraisal and the interview with the Head of Department. At the second stage (2018–2019 academic year), the researchers identified the problems of the novice teachers’ induction and evaluated their level of adjustment in the professional, psychological and motivational spheres. The conclusion of the study was based on the analysis of teachers’ professional activities and the data obtained from the survey. The obtained results made it possible to make recommendations on how to facilitate the process of self-adjustment of the novice educators.

The first part of the study was carried out among teachers of SPbPU with the work experience in an educational institution of less than 3 years (16 people). According to the results of the analysis of their activities during the year, the level of their professional adaptation and readiness for professional activities was assessed. The second stage was held with the participation of teachers who took part in the first stage (16 people) of the study and other teachers of the Institute of Humanities with working experience of 3-5 years (24 people) whereby it became possible to trace the general patterns associated with the process of novice teachers’ adaptation.

The first stage of the study involved collecting data on professionals working in the field of education for less than 3 years obtained from the results of the computer-based appraisal and the interview with the Head of Department. During the interview, the Head of department was offered to complete a form on the novice teachers evaluating their success in fulfilling professional activities according to the following scale ranging from 1 to 10 points, where 1 signifies the lowest level and 10 suggests the highest level of success in professional performance. The collected data revealed the level of their readiness for professional activities. In other words, as part of the study, an attempt was made to assess how clearly the teachers were aware of their area of responsibility, job duties and responsibilities and the timeframe they needed to meet in order to successfully fulfil their duties. The analysis was carried out based on the assessment of the following parameters:

- professional competence, i.e. the sufficient level of training, professional knowledge of the subject and pedagogic (results of the computer-based appraisal on three modules: professional sphere; regulations and laws in education; information technologies in the learning process); 30 points (10 points for each section)
  - implementation of individual plans (10 points);
  - results of the survey containing students’ evaluations of teachers (10 points);
  - absence of complaints and conflict situations arising in the process of interaction with students and the Directorate of institutions (10 points);
  - absence of violations of labour discipline and deficiencies and the completion of the working documentation (10 points);
  - results of lesson observations by curators (30 points – 10 points max. from each of 3 attendees).

The level of participants’ professional readiness was assessed according to the following scale of total score points: 90-100 points referred to the high level of professional readiness, 60-89 points – to the medium level and 0-59 points were considered as the low level of professional readiness.

The collected data were tabulated and processed in MS Excel and entered into SPSS Version 23 (IBM Corp., 2016). The quantitative data analysis was carried out by applying the descriptive statistical method and running frequencies and cross tabulations to provide information for the interpretation. The results of the data analysis are presented in Table 1.

The second stage involved the study conducted in the fall semester of the 2018-2019 academic year, which was based on the results of a survey on the problems of the socio-psychological and value-motivational areas of adaptation of novice teachers. In order to address the research questions stated above, a questionnaire was developed to determine the problems novice teachers face in professional, psychological and motivational spheres of induction. The questionnaire consisted of closed-ended
multiple-choice questions; also, most multiple-choice questions included the multiple response option and contained the field “Other”, so that the respondents could share their view or opinion on the matter in question. An online survey was applied to collect data from the faculty using Google Forms, which is an effective and convenient tool for recruiting and processing data. Two groups of respondents participated in the survey: 16 novice teachers with teaching experience of 1-3 years, who took part in the first stage of the study, and 24 young teachers with teaching experience of 3-5 years. This would allow us to identify the problems, general patterns and tendencies associated with the process of novice and young teachers’ adaptation. A recruitment email was distributed to forty faculty members and forty completed sets of responses were collected. Afterwards, the data were entered in SPSS, and the descriptive statistical analysis using frequencies and cross-tabulations was run to calculate the frequencies in participants’ responses from closed-ended questions and present them in the form of numerical data to be critically analysed and objectively interpreted by comparing them to other findings within this research. Thereafter, the correlation analysis of the acquired results was carried out by conducting the chi-square test of independence and the Fisher’s exact test of independence for each questionnaire item in SPSS to identify the statistically significant difference between the results of two groups of respondents. The statistically-significant difference was assessed by the Fisher’s coefficient with the admissible error limit of 0.05. Then, the researchers applied the comparative method to analyse the obtained results, which allowed them to make recommendations on how to facilitate the process of self-adjustment of the novice educators. The results of Stage 2 helped address Research Questions 1 and 2.

3. Results and Discussion
At the first stage of the study, the level of readiness of novice teachers to the implementation of professional activity was revealed. The results of the data analysis demonstrate that the level of readiness to perform professional activities can be assessed as high (31%), medium (56%) and low (13%) (Table 1) and is mostly sufficient. However, 19% of novice teachers experience difficulties with the implementation of individual plans, labour discipline and deficiencies and the completion of work documentation as well as with the methodological aspects of conducting lessons. The results show that these teachers require advice and support from teachers that are more experienced and the administration of the educational institution.

| Professional readiness                                                                 | Novice teacher (count, percentage) | Total |
|---------------------------------------------------------------------------------------|-----------------------------------|-------|
| Knowledge of the subject and pedagogy                                                | High (5 (31%)) Medium (11 (69%)) Low (0 (0%)) | 16 (100%) |
| Regulations and laws in education                                                    | High (1 (6%)) Medium (15 (94%)) Low (0 (0%)) | 16 (100%) |
| Information technologies in the learning process                                     | High (9 (56%)) Medium (7 (44%)) Low (0 (0%)) | 16 (100%) |
| Implementation of individual plans                                                   | High (5 (31%)) Medium (8 (50%)) Low (3 (19%)) | 16 (100%) |
| Students’ evaluation of teachers                                                     | High (5 (31%)) Medium (11 (69%)) Low (0 (0%)) | 16 (100%) |
| Absence of complaints and conflict situations arising in the process of interaction with students and the Directorate of institutions | High (13 (81%)) Medium (3 (19%)) Low (0 (0%)) | 16 (100%) |
| Absence of violations of labour discipline and deficiencies and the completion of the working documentation | High (6 (37%)) Medium (7 (44%)) Low (3 (19%)) | 16 (100%) |
| Lesson observation by Curator 1                                                       | High (5 (31%)) Medium (9 (56%)) Low (2 (13%)) | 16 (100%) |
| Lesson observation by Curator 2                                                       | High (2 (12%)) Medium (11 (69%)) Low (3 (19%)) | 16 (100%) |
| Lesson observation by Curator 3                                                       | High (4 (25%)) Medium (11 (69%)) Low (1 (6%)) | 16 (100%) |
According to the survey conducted at the second stage of the research, 87.5% of the novice teachers (1-3 years of work experience) and 70.8% of young teachers (3-5 years of work experience) faced difficulties at the initial stage of work. Based on the results of the survey, it was possible to identify the following problems.

**Professional sphere:**
- heavy workload;
- uncertainty in the level of professional training;
- the lack of technical skills in teaching;
- a large amount of important information that is not directly related to the preparation and conducting of classes (the structure of the Institutes, the location of their directorates, the correspondence of study groups to specialties and curricula, the location of educational buildings, etc.);
- the lack of practice in maintaining documentation (working with curriculums, drawing up an individual plan, filling out journals keeping records of students’ progress during the term);
- the adverse work-life balance.

**Psychological sphere:**
- experiences associated with the need for a new role distribution;
- anxiety associated with the establishment of interpersonal contacts;
- inability to establish an optimal distance with students and maintain discipline;
- fear of the opinions of others;
- negative emotional states;
- experiences associated with the need to demonstrate their capabilities;
- high level of anxiety, lack of confidence in their abilities.

**Motivational sphere:**
- misunderstanding of the purpose of professional activity;
- uncertainty about the motivation, the choice of professional activity and place of work;
- weak motivation for learning, self-development and self-improvement, due to the limited amount of time.

They results of the survey are described more precisely in Table 2.

**Table 2. Problems that novice and young teachers face in professional, psychological and motivational spheres of adaptation at the initial stage of work**

| Problems                                      | Novice teachers (1-3 years) | Young teachers (3-5 years) | F-test p-value (2-sided) |
|------------------------------------------------|-----------------------------|---------------------------|-------------------------|
| **Professional spheres of adaptation**        |                             |                           |                         |
| increased fatigue and decreased performance  | 50%                         | 33.3%                     | 0.339*                  |
| lack of confidence in the level of professional training | 66.7%                      | 37.5%                     | 0.106*                  |
| problems with students’ discipline           | 43.8%                       | 25%                       | 0.305*                  |
| difficulties in working with documentation   | 66.7%                       | 37.5%                     | 0.106*                  |
| difficulties with adequate assessment of students | 87.5%                      | 62.5%                     | 0.148*                  |
| difficulties in managing the workload        | 75%                         | 50%                       | 0.114*                  |
| **Psychological spheres of adaptation**       |                             |                           |                         |
The results of the chi-square test and F-test reveal that the difference between the values of novice and young teachers is in most cases statistically insignificant, although the decline in the fear of students and establishing the optimal distance with them is statistically significant ($\phi = 0.004$; $\alpha = 0.05$). Nevertheless, it can be seen that the level of the problems in professional, psychological and motivational spheres faced by novice teachers tend to decrease with experience.

To overcome the difficulties novice university teachers face it is important to use proper social resources. Concluded from the analysis of the detected problems, one of the most effective ways of novice professional induction can be the professional and psychological support provided by mentoring and individual assistance performed in the form of on-the-job training, instructional interactions with mentors and experienced colleagues [36]. According to Caspersen, teachers often describe their first teaching job following graduation as a shocking experience. Studies found differences between novice and experienced teachers in terms of the levels of collegial and superior support and collaboration. In addition to receiving a lower level of professional support from their superiors, novice teachers are found to lack ways to articulate their own needs to colleagues [37]. Studies, carried out by Faez, suggest that novice teachers increase their perceptions of preparedness by gaining experience in the classroom. Although their sense of efficacy to perform within certain teaching expectations was task-specific and varied with the situations. The practicum and “real” teaching experiences were found to be the most influential aspects of the induction programs [38]. That is why it was decided to include training sessions in which novices attended classes conducted by expert teachers, took notes and analyzed them. According to some researchers novice teachers’ competence can be improved through the use of instructional activities such as a guided public rehearsal [39].

It is necessary to carry out work on the adaptation of newly recruited staff, to improve the quality of education [40-42]. Despite the fact that the employee is ready to master their professional skills independently, nevertheless, at the initial stage of their work activity, professional support is necessary. Authorized representatives of educational organizations need to consider issues related to the adaptation of new employees. It is fallacious to place full responsibility for the effectiveness of the process of adapting a new influx of employees only on an educational organization. One of the most important conditions for successful adaptation of a specialist, as well as its consolidation in the teaching profession, is their personality and professional training.

The analyzed data include information on beginner specialists of the Higher Education Institute who have undergone professional training in the specialty "Theory and Methods of Teaching" and who have received the specialty of a teacher. In this regard, the research participants initially had a higher level of readiness to carry out the activities of a teacher, by studying the disciplines of the teaching cycle. Henry and colleagues proved that the effectiveness of high-school science and mathematics teachers increases substantially with experience but exhibits diminishing rates of return.
by their fourth year. The teachers who continued teaching for at least 5 years were more effective as 
novice teachers than those who left the profession earlier.

At the same time the results of the extensive research show that novice teachers of physics; 
chemistry; physical science; geometry; and biology exhibited steeper growth in effectiveness than did 
novice non–science; technology; engineering; and mathematics teachers [43]. This means that the 
pattern of adaptation and the problems novice teachers face in the field teaching of technical discipline 
skills can differ and needs further research.

Thus, the obtained results may not apply to young professionals who teach technical subjects, 
studying in graduate school and not having teacher education.

In the future, in order to develop scientific and methodological guidelines on the organization of 
pedagogical support, it is necessary to assess the level of readiness for the professional activities of 
young teachers with technical education who teach various disciplines at SPbPU.

4. Conclusions

The aim of this research was to study the process of adaptation of novice university educators. To 
achieve the objective it was needed: 1. to assess the professional readiness of the novice university 
educators; 2. to find out the problems they face in professional, psychological and motivational spheres of 
induction process; 3. to compare the frequency of the detected problems within the groups of novice teachers 
with 1- 3 year and 3-5 year experience.

We have achieved the following results:
1) We have assessed the professional readiness of novice teachers. It resulted in the following 
findings: 31% of novice have a low level of readiness, 56% and 13% are found to have an 
average and a high level respectively.
2) We have defined that the main problems novice teacher face are the following: increase in 
workload; uncertainty in the level of professional training; bad life-work balance; need for a new 
role distribution and establishment of interpersonal contacts; inability to establish an optimal 
distance with students and maintain discipline; high level of anxiety and lack of confidence; 
uncertainty of the career choice motivation; limited amount of time for self-development and self- 
improvement.
3) We have compared the frequency of occurrence of the mentioned problems in groups of novice 
university educators with the working experience of 1-3 years and 3-5 years, and figured out, that 
although the level of the problems in professional, psychological and motivational spheres faced 
by novice teachers tend to decrease with experience, the difference between the values of novice 
and young teachers is in most cases statistically insignificant.

As problems faced on psychological spheres of adaptation seem to be the most acute ones, it is 
important to use proper social resources, presumably provided by mentoring and individual assistance 
performed in the form of on-the-job training, instructional interactions with mentors and experienced 
colleagues. The achieved results can be used for: preparation of evaluation and measurement materials 
to determine the level of the teacher’s readiness for pedagogical activity; justification of the need to 
support young teachers in the first years of their professional activities; preparation of a program for 
the provision of pedagogical support to beginner teachers in certain structural units of the university.

Acknowledgement

The authors express their gratitude to the reviewers who carried out the analysis and constructive 
criticism of the submitted article, as well as to all participants of the experiment.

References

[1] Golikov A, Kudaka M, Sergeev V, Tishin P and Tumakova E (2018). Human Capital as a 
Basis for the Development of a Modern University. MATEC Web of Conferences, 193.

[2] Yazdi M T, Motallebzadeh K and Ashraf H 2014 The Role of Teacher’s Self-efficacy as a
Predictor of Iranian EFL Teacher’s Burnout. *Journal of Language Teaching and Research*.

[3] Jennett H K, Harris S L and Mesibov G B 2003 Commitment to philosophy, teacher efficacy, and burnout among teachers of children with autism. *Journal of Autism and Developmental Disorders* **33**(6) 583-593

[4] Bettini E, Jones N, Brownell M, Conroy M, Park Y, Leite W… and Benedict A 2017 Workload Manageability Among Novice Special and General Educators: Relationships With Emotional Exhaustion and Career Intentions. *Remedial and Special Education*.

[5] Bettini E A, Jones N D, Brownell M T, Conroy M A and Leite W L 2018 Relationships Between Novice Teachers’ Social Resources and Workload Manageability. *Journal of Special Education* **52**(2) 113-126

[6] Ardisa P, Wu Y T and Surjono H D 2018 Improving Novice Teachers’ Instructional Practice Using Technology Supported Video-based Reflection System: The Role of Novice Teachers’ Beliefs. *Journal of Physics: Conference Series* **1140** 012029

[7] Mathews H M, Rodgers W J and Youngs P 2017 Sense-making for beginning special educators: A systematic mixed studies review. *Teaching and Teacher Education* **67** 32-36

[8] Çakmak M, Gündüz M and Emstad A B 2019 Challenging moments of novice teachers: survival strategies developed through experiences. *Cambridge Journal of Education* 147-162

[9] Çam Aktaş B 2018 Assessment of Induction to Teaching Program: Opinions of Novice Teachers, Mentors, School Administrators *Universal Journal of Educational Research*. **6**(10) 2101-2114

[10] Paula L and Grīnfelde A 2018 The Role of Mentoring in Professional Socialization of Novice Teachers. *Problems of Education in the 21st Century*.

[11] Eteläpelto A, Vähäsantanen K and Hökkä P 2015 How do novice teachers in Finland perceive their professional agency? *Teachers and Teaching: Theory and Practice*. **21**(6) 660-680

[12] Löfström E and Eisenschmidt E 2009 Novice teachers’ perspectives on mentoring: The case of the Estonian induction year. *Teaching and Teacher Education*. **25**(5) 681-689

[13] Shin S K 2012 “It Cannot Be Done Alone”: The Socialization of Novice English Teachers in South Korea. *TESOL Quarterly*. **46**(3) 542-568

[14] Farrell T S C 2016 Surviving the transition shock in the first year of teaching through reflective practice. *System*. **61** 12-19

[15] Friedman I A 2000 Burnout in teachers: Shattered dreams of impeccable professional performance. *Journal of Clinical Psychology*. **56**(5) 595-606

[16] Kim J, Youngs P and Frank K 2017 Burnout contagion: Is it due to early career teachers’ social networks or organizational exposure? *Teaching and Teacher Education*. **66** 250-260

[17] Gavish B and Friedman I A 2010 Novice teachers’ experience of teaching: A dynamic aspect of burnout. *Social Psychology of Education*. **13**(2) 141-162

[18] Meyer H 2004 Novice and expert teachers’ conceptions of learners’ prior knowledge.
Science Education. 88(6) 970-983

[19] Canrinus E T, Helms-Lorenz M, Beijaard D, Buitink J and Hofman A. 2012 Self-efficacy, job satisfaction, motivation and commitment: Exploring the relationships between indicators of teachers’ professional identity. European Journal of Psychology of Education. 27(1) 115–132

[20] Wolff C E, Jarodzka H, van den Bogert N and Boshuizen H P A 2016 Teacher vision: expert and novice teachers’ perception of problematic classroom management scenes. Instructional Science. 44(3) 243–265

[21] Stroganova O, Bozhik S, Voronova L and Antoshkova N 2019 Investigation into the Professional Culture of a Foreign Language Teacher in a Multicultural Classroom from Faculty and International Students’ Perspectives. Educ. Sci. 9 137

[22] Berry R A W 2008 Novice teachers’ conceptions of fairness in inclusion classrooms. Teaching and Teacher Education. 24(5) 1149-1159

[23] Tsui A B M 2009 Distinctive qualities of expert teachers. Teachers and Teaching: Theory and Practice. 15(4) 421-439

[24] Doney P A 2013 Fostering Resilience: A Necessary Skill for Teacher Retention. Journal of Science Teacher Education. 24(4) 645-664

[25] Van Ginkel G, Oolbekkink H, Meijer P C and Verloop, N. 2016 Adapting mentoring to individual differences in novice teacher learning: The mentors viewpoint. Teachers and Teaching: Theory and Practice. 22(2) 198-218

[26] Tait M 2008 Resilience as a Contributor to Novice Teacher Success, Commitment, and Retention. Part of the Special Issue, Democracy, Social Justice and the Lives of Teachers.

[27] Robertson-Kraft C and Duckworth A L 2014 True Grit: Trait-level Perseverance and Passion for Long-term Goals Predicts Effectiveness and Retention among Novice Teachers. Teachers College Record (1970).

[28] Nolen S B, Horn I S, Ward C J and Childers S A 2011 Novice teacher learning and motivation across contexts: Assessment tools as boundary objects. Cognition and Instruction. 29(1) 88-122

[29] Odinokaya M, Krepkaia T, Sheredkina O and Bernavskaya M. 2019 The Culture of Professional Self-Realization as a Fundamental Factor of Students’ Internet Communication in the Modern Educational Environment of Higher Education. Educ. Sci. 9 187

[30] Vasetskaya N O, Glukhov V V and Burdakov S F 2018 The Elaboration of the Model of Competences of the Research and Teaching University Staff. In Proceedings of the 2018 XVII Russian Scientific and Practical Conference on Planning and Teaching Engineering Staff for the Industrial and Economic Complex of the Region (PTES) 98–101

[31] Hobfoll S E 2012 Conservation of Resources Theory: Its Implication for Stress, Health, and Resilience. In The Oxford Handbook of Stress, Health, and Coping.

[32] Hobfoll S, Halbesleben J, Neveu J -P and Westman M 2018 Conservation of Resources in the Organizational Context: The Reality of Resources and Their Consequences. In SSRN. 5 128- 132
[33] Schaufeli W B, Maslach C, Maslach C, Hobfoll S E and Freedy, J. 2018 Conservation of Resources: A General Stress Theory Applied To Burnout. In Professional Burnout. 7 15

[34] McCarthy C J, Lambert R G, Lineback S, Fitchett P and Baddouh P G 2016 Assessing Teacher Appraisals and Stress in the Classroom: Review of the Classroom Appraisal of Resources and Demands. Educational Psychology Review. 28(3) 577–603

[35] Halbesleben J R B, Neveu J P, Paustian-Underdahl S C and Westman M 2014 Getting to the “COR”: Understanding the Role of Resources in Conservation of Resources Theory. Journal of Management. 40(5)

[36] Odinokaya M, Krepkaia T, Karpovich I and Ivanova T 2019 Self-Regulation as a Basic Element of the Professional Culture of Engineers. Educ. Sci. 9 200

[37] Caspersen J and Raanen F D 2014 Novice teachers and how they cope. Teachers and Teaching: Theory and Practice. 20(2) 189-211

[38] Faez F and Valeo A 2012 TESOL Teacher Education: Novice Teachers’ Perceptions of Their Preparedness and Efficacy in the Classroom. TESOL Quarterly. 46(3) 450-471

[39] Kazemi E, Franke M L and Lampert M 2009 Developing pedagogies in teacher education to support novice teachers’ ability to enact ambitious instruction. Crossing Divides: Proceedings of the 32nd Annual Conference of the Mathematics Education Research Group of Australasia (Vol. 1).

[40] Rubtsova A V Socio-linguistic innovations in education: productive implementation of intercultural communication. In Proceedings of International Scientific Conference "Digital Transformation on Manufacturing, Infrastructure and Service", IOP Conference series: Material science and engineering, vol. 497; St. Petersburg, Russian Federation, 1–22 November 2018; Sergeev V. (ed); IOP, 2018 Conference Series Materials Science and Engineering 497(1):012059

[41] Trostinskaia I R, Safonova A S and Pokrovskaya N N 2017 Professionalization of education within the digital economy and communicative competencies. In Proceedings of the 2017 IEEE VI Forum Strategic Partnership of Universities and Enterprises of Hi-Tech Branches (Science. Education. Innovations) (SPUE); St. Petersburg; Russian Federation, 15 - 17 November 2017 29–32.

[42] Bylieva D, Lobatyuk V, Safonova A and Rubtsova A 2019 Correlation between the Practical Aspect of the Course and the E-Learning Progress. Educ. Sci. 9 167

[43] Henry G T, Fortner C K and Bastian, K. C. 2012 The effects of experience and attrition for novice high-school science and mathematics teachers. Science. 335(6072) 1118-1121