CURRICULUM VITAE

NAME: Zhanna Dedovets

POST: **Lecturer, School of Education**

QUALIFICATION :

Ph.D. in Mathematics Education	Saint-Petersburg Pedagogical State University	
	Saint-Petersburg, Russia	2000
MS in Mathematics	Karelian State Pedagogical University	(KSPU)
	Russia	1985
Diploma of Education	School # 20 Petrozavodsk, Russia	1980

PROFESSIONAL EXPERIENCE:

2007- present **Lecturer**, School of Education,
The University of The West Indies St. Augustine.

2006-2007 **Head of Geometry Department**, Associate Professor,
Faculty of Physics and Mathematics,
Karelian State Pedagogical University, Petrozavodsk, Russia.

2004- 2006: **Senior Lecturer**, Department of Mathematics, Physics and Statistics,
Faculty of Natural Sciences, University of Guyana,
Georgetown, Guyana.

2002-2004 **Head of Geometry Department**, Associate Professor,
Faculty of Physics and Mathematics,
Karelian State Pedagogical University, Petrozavodsk, Russia.

1995-2002 **Senior Lecturer**, Department of Geometry,
Karelian State Pedagogical University, Petrozavodsk, Russia.

1991-1995 **Assistant Lecturer**, Department of Algebra and Informational Technology,
Karelian State Pedagogical University, Petrozavodsk, Russia.

1986-1991 **Teacher of Mathematics**, Secondary School # 187, Kiev, Ukraine.

CURRENT DUTIES:

Lecturer, Bachelor of Education:
Basis Introductory Mathematics (MATH 1140),

Mathematics Around Us (EDMA 3901),

Problem Solving in Mathematics (EDMA 2901),

Mathematics for Primary Teachers (EDMA 1902),

Mathematics Appreciation (EDMA 1721)

Tutor, Diploma in Education
Teaching of Mathematics (EDMA 5260)

Supervisor M.Ed, Mhil, PhD Students

TEACHING RECORD:

Faculty of Technology, Karelian State Pedagogical University, Petrozavodsk, Russia

Basis Introductory Mathematics (1991 - 1996, 2000-2002, 2007)

Mathematics for Secondary Teachers (1994 – 2003, 2007)

Mathematics for Primary Teachers (1994 – 2003, 2007)

Problem–solving in Mathematics (1994 – 2003, 2007)

Vector Analysis and Mathematical Analysis (1991-1994, 1995-1998)

Mathematical Methods (1998-2001, 2007)

Topology, Analytical Geometry (998-2001, 2001-2003)

Faculty of Natural Sciences and Faculty of Technology, University of Guyana, Georgetown, Guyana

Trigonometry (2004, 2005-2006)

Linear and Modern Algebra (2004, 2005-2006)

Groups, Rings and Fields (2004, 2005-2006)

Vector Analysis (2004, 2005-2006)

LIST OF MAIN PUBLICATIONS

Publications

(a) Books – NO

(b) Monographs –NO

(c) Article published in refereed journals:

1. Significance of Problems in Cutting in School Plane Geometry Course // Journals "Teaching Mathematics and Physics in Secondary and Higher Education". - Joensuu University Press, 1998. – P.145-146.

2. Independent Work of Pupils in Studying new Material on the Topic "Polygon Areas" // Journals "Teaching Mathematics and Physics in Secondary and Higher Education". - Joensuu University Press, 2000. - P.125-129.

3. Applying The Method of Cutting in The School Geometry Course // Journals "Teaching Mathematics and Physics in Secondary and Higher Education"//Mathematics and Science Education in the North-East of Europe - Joensuu University Press, 2003. - P.111-1116.

4. Cut, combine and prove. //:Journals "Mathematics" №3, 2007 P. 27-36

5. The Cutting of Geometrical Figures Method in the School Mathematical Course // Materials of International Scientifically conference "Education system: mathematics, physics, computer science, technology", Tajikistan, Dushanbe, State Pedagogical University Tajikistan (TSPU), 2010. P 220-226

6. Increasing Learner's Level of Motivation in Mathematics Education through the Use of Uncompleted Situations // The Literacy Information and Computer Education Journal (LICEJ), Volume 2, Issue 2, ISSN: 2040 2589 (Online), UK, 2011 (Podionov) http://www.infonomics-society.org/LICEJ

(d) Article published in other journals:

1. Problems on Cutting as One of the Ways of Teaching // Problems of theory and practice of teaching Maths. (Materials of All-Russian Scientific Conference. St.-Petersburg. 2001. – P. 98 - 101).

2. Problems on Cutting as One of the Ways of Teaching // Problems of theory and practice of teaching Maths. The Collection of Scientific and methodical articles of regional Scientific and practical conference. Pensa. 2001 – P. 157 – 163.

3. Logical prove at studying of geometry //Problems of theory and practice of teaching Maths. The Collection of Scientific and methodical articles of regional Scientific and practical conference. Kirov. 2001 – P. 64 – 69

4. Problems on Cutting when Studying Geometry in School // Mathematics, its Applications and Mathematical Education: Reports of International Conference. P.2. Ulan-Ude, 2002. – P. 206 - 214.

5. Stirring up of Students' self-work in Studying Geometry // Problems of theory and practice of teaching Maths. (Materials of International Scientific Conference. St.-Petersburg. 2002. – P. 204 - 207.)

6. About the Necessity of Development of the Reflexive Activity in Teaching Maths // The developing potential of Maths and its realization in teaching Maths.The Collection of Scientific and methodical articles of regional Scientific and practical conference. Arsamas. 2002 – P. 142 – 146.

7. Problems on Cutting as One of the Means of Teaching Geometry in Secondary School // Humanitarian approach in secondary and high mathematical education: methodology, theory and practice. (Materials of All-Russian Scientific Conference. Saransk.2002 – P. 192 - 198.)

8. Collection of Excises in Plane Geometry. Petrozavodsk. 2003.

9. Education of Guyana // Bologna process in mathematical and natural science pedagogical education: tendencies, perspectives, problems (Materials of International Scientific Conference. Petrozavodsk -Sortavala. 2005. –P.26-31).

10. The External control as a tool of improvement of quality of students training // Materials of the All-Russia scientifically-practical conference, dedicated to the 115 anniversary to Academician P.A.Larichev. Vologda 2007 P 146-148

11. The Organization of students' research activity at studying of geometry. // Materials of scientifically-practical conference, Petrozavodsk, KSPU, 2005. P 5-11

12. The Cutting of Geometrical Figures Method in the School Mathematics Course // Russia, Pensa, May 2007 P 148-11

13. Theoretical and practical aspects of using logic problems at mathematics lessons// Materials of the International Scientifically-Practical Symposium "Modern education: scientific approaches, experience, problems, prospects"/ Penza, V.G. Belinsky Penza State Pedagogical University Russia (PSPU), 2010. P 8-13

14.'Uncompleted' Situations as the Tool for Developing Motivation in the Mathematics Classroom at Secondary School // Proceeding of Canada International Conference on Education (CICE – 2011) Canada, University of Toronto, 2011.

15. The organization of students research activities for geometry learning // Proceeding of the Conference “Modern education: scientific approaches, experience, problems, prospects”/ Penza, V.G. Belinsky Penza State Pedagogical University Russia, Russia (PSPU), 2011. P.46-47

16. The analysis of typical mistakes at the solution of problems of a rate of school mathematics: the equations, trigonometry, plane geometry// Proceeding of the Conference “Modern education: scientific approaches, experience, problems, prospects”/ Penza, V.G. Belinsky Penza State Pedagogical University Russia, Russia (PSPU), May ,2012

Manuscripts in preparation

1. Dynamic Peculiarities of the Establishment of Pupils' Valuable Attitude towards Mathematical Demonstration and their Application in School Practice (London International Conference on Education (LICE-2012) November , 2012, London, UK)
2. Usage the effect of an uncompleted situation to raise the motivation in the process of educating mathematics in the secondary school.
3. Actualization of motivational actions of students’ educationally - search activity during the mathematical problems solving

Papers presented at Conferences

1. I participated in the International Scientifically-Practical Symposium:

“Modern education: scientific approaches, experience, problems, prospects” at V.G. Belinskiy Penza State Pedagogical University Russia (PSPU) in Penza. At this symposium, I made two presentations. My first presentation was at the plenary meeting. I told them about the education system in Trinidad and Tobago. The second presentation was at the section. The Title: Theoretical and practical aspects of using logic problems at mathematics lessons (May, 2010).

Theoretical and practical aspects of using logic problems at mathematics lessons// Materials of the International Scientifically-Practical Symposium “Modern education: scientific approaches, experience, problems, prospects”/ Penza, V.G. Belinsky Penza State Pedagogical University Russia (PSPU), 2010. P 8-13

2. Canada International Conference on Education (CICE-2011)
The Title of my presentation: “Uncompleted” Situations as the Tool for Developing Motivation in the Mathematics Classroom at Secondary School. This presentation was at the Session #19 Science Education. My research dedicated to developing motivation in the mathematics was published in the proceeding of the Canada International Conference on Education (CICE-2011) (www.ciceducation.org)

Other papers:

1. Instructive materials for teaching practices of mathematics faculty students (the methodical instruction. Student handbook) Petrozavodsk, KSPU, 2005 P30

2. To the Teacher about a management of student teaching practice for mathematical faculty (the methodical instruction. Teacher handbook) Petrozavodsk, KSPU, 2005 P 30

LIST OF RESEARCH ACTIVITIES

The research proceeds in the following two directions:

1) The nature and development of student motivation in Math.

One of the most important indicators of student's personal enhancement is the level of developing of require – motivational sphere which predetermines efficiency of educational process in a great measure.

School mathematical education has got a range of specialties that influence on motivational processes passing to the number of which it is possible to take: leading role of problems, the opportunity of description studied facts and regularities with the terms of different mathematical languages, strong expressiveness of intra-subjective connections. Having in mind all these factors is necessary condition of successful formation of objective motivation.

In psychologically – teaching literature it is mentioned that studying motivation as the aimed selected activity of the efforts of solving educationally – cognitive problems directly depends on two interrelating factors: student's personal importance of appropriate problem situations and the ways of it solving and also an estimated probability of achieving success in the time of this activity realization.

The first of mentioned factors is the result of internal taking of this problem and the way of search of problem solving and the second one supposes the possession of the defined operating range of ways and methods of objective activity that provides relative approximation of valuation structures of its different types.

The most important condition of taking the problem by the student is provide him the opportunity to take part actively in its selection, formulation and in search the way of problem solving. In particular formation the problem could be made by students under the teacher's direction on the basis of analysis of given geometrical configuration, generalization and specification of original problem situations, attraction consideration of inductance and analogy, substantial interpretation these situations in terms of real or another objective languages. As the results the whole blocks of problems which are linked with the single motivational canvas on the basis of actualization of different types of relating (inclusion, intercrossing, consecution and others) in the student's mind.

Among the methods that are often used for creating and solving problems at school it is possible to mention the next ones:

- ✓ Generalization - it is a look at the situation of the task form a more common perspective supposing preliminary substantial generalization (obvious or unobvious) of this situation on the basis of widening the size of using notions and relating between them.
- ✓ Identification – discovery unclearly expressed conceptual rationale of problem situation.
- ✓ Unification – it is finding out "relationships" between the statements and common factors which are originally subjectively divorced from each other.
- ✓ Parameterization – a reversible conversion from actual statements to sentences containing a running.
- ✓ Introduction – attraction new connections to evaluation that allow discovering firstly invisible relating between the elements of objective area of the problem.
- ✓ Transposition – straight transfer the problem from one school mathematic department into another accompanying reformulation of its content in the terms of appropriate mathematical language.
- ✓ Specification – is separation critical or degenerated case that allows students to imagine essential for problem solving factors more relief.
- ✓ Misalignment – is rethinking the elements of the problem's objective area for the purpose of alternative configuration.
- ✓ Reduction – is the process of direct transformation the original problem into the chain of sub-problems which are easier.
- ✓ Alteration – is partial change of one or several task options with the purpose of transforming the appropriate geometrical configuration into subjectively known type.
- ✓ Reduction - is reconstitution original configuration till integral image that helps to think about the possible direction of further search.

Mentioned methods are oriented not to formally – logical but to substantial, semantic problem analysis finding its reflection in the same nature of creative thinking. Also as more is the set of methods that the student can use discussing one or another problem situation, than the

diapason of choosing directions of search is wider and than the subjective prospectively assessment of each of these directions is adequate.

2) Students' perception of mathematical problem during demonstration and their application in classroom practice.

The role of demonstration in school mathematical education is most brilliantly expressed by Polya G., who considers it to be the most essential point contributed by Mathematics into the general cultural level of a person. Accordingly, it is of vital importance from the motivational point of view to pave the way for pupils' full evaluation of this significant contribution. Otherwise, as the above mentioned author points out "the pupil, who has not been influenced by the impressiveness of mathematical demonstration, misses one of the most important intellectual experiences".

There are different approaches to the analysis of mutual influence of logical-deductive line of school mathematical education and "motivational-valuable mechanisms" of material activity. On the one hand, the question arousing much interest is motivational-valuable significance of different from the point of view of their principal construction ways of arrangement of school courses of Mathematics. On the other hand, there exists one more question connected with the revealing of the opportunities of establishment and optimum actualization of motivational component of school activity which are directed towards mastering of the deductive method of reasoning.

The effectiveness of the chosen way of school mathematical courses arrangement is greatly determined by the correspondence between the accepted logical precision level of the executed demonstration reasoning and the actually formed intellectual and motivationally required potential of a pupil's personality. The question about an expedient precision level on a certain cognition level supposes that logic should harmoniously combine with intuition, what provides an opportunity to include the deductive component of mathematical activity into the system of a person's valuable attitudes in conformity with the subject's content. Conformably to school this combination is initially expressed in the nature of certain notions and theorem proofs, which should be as logically precise as possible and rest upon the available for pupils' descriptive-intuitive notions.

The problem of optimum balance between visual materials and strict mathematical proof in school math programs has not yet been fully solved. In this respect the following points have been offered to be viewed as the determining regulators of precision:

1. the role of the given notion or fact in the further course structure ("the more important the role is, the more precise the approach should be");
2. Students age abilities ("the older the pupil is, the higher precision is");
3. Material specifics ("Geometry should be taught at school more precisely than Algebra");
4. correspondence with the available notional base ("to prove what can be proved at the given stage of schooling, and either to put off for a later stage or to accept without proof what cannot be proved").

In the real world of school teaching the question where to draw the borderline between the two tendencies mentioned above are still the prerogative of the author of the textbook and the teacher who has chosen this textbook.

While highlighting levels of strict demonstrative reasoning in educational processes and corresponding levels, one can proceed from the motivational value status of such reasoning for the subject of activity. According to this viewpoint it is possible to state three basic precision levels of demonstrative reasoning, corresponding with the three levels of reflection development.

1. "Demonstration for oneself" level (reasoning based on "the common sense").

2. "Demonstration for others" level (reasoning based on elementary intellectual experience).

3. "Demonstration for oneself through demonstration for others" level.

Without describing the theory of demonstration reasoning teaching in general, for it is variously represented in a great number of publications on correspondent subjects, i am going to touch upon its valuable-motivational aspect. This aspect presupposes consideration of two principal points, determining the main conditions of purposeful establishment and actualisation of the considered component of mathematical activity motivational mechanisms:

- ✓ Determination of opportunities to choose the appropriate for the given situation level of precision and selection of an adequate (to) this level methodical apparatus.
- ✓ Stating and actualization of motivational means, providing natural moving along the "level scale".

Execution of the mentioned conditions presupposes diagnostics of pupils' demonstration reasoning reflection nature (on the basis of the above described criteria) and this nature's detailed and obligatory consideration in the process of reasoning teaching level determination. As is demonstrated by school practice, the most considerable difficulty in this respect is the one caused by the presence in one age group of children with different correlation of reflection types. This difficulty can be partially overcome through appropriate combination in different age periods of reasoning correspondent to different levels of precision.

OTHER ACTIVITIES:

Member of Organization Committee for School children Olympiads on Mathematics, Karelian State Pedagogical University, 2000-2003, 2007

Co-Chairman of Organization Committee of the International Conference: "Mathematics and Science Education in the North-East of Europe: History, Traditions & Contemporary Issues", Joensuu, Finland, 2005.

Co-Chairman of Organization Committee of the International Conference: "Bologna process in mathematical and natural science pedagogical education: tendencies, perspectives, problems", Sortavala, Russia-Finland, 2004.

Chairman of the Examination Committee on Mathematics, Karelian State Pedagogical University, Petrozavodsk, Russia (2000-2003, 2007).

Coordinator of 75th anniversary of the Karelian State Pedagogical University (2007)

Member of Organization Committee for School children Olympiads on Mathematics, Karelian State Pedagogical University, 2010 -2011

Member of Sub- Committee. That a Sub-Committee be convened to examine the problem of the weak performance of students in Mathematics and to offer recommendations for corrective action at both the CAPE and secondary school levels, 2010

Member of Organization Committee of the International Scientifically-Practical Symposium "Modern education: scientific approaches, experience, problems, prospects" at V.G. Belinskiy Penza State Pedagogical University Russia (PSPU) in Penza (2010).

Member of Organization Committee of Mathematics Symposium "Mathematics Education in the 21st Century: Embracing Possibilities", The University of The West Indies, Faculty of Humanities and Education, School of Education, June 2012

Public Service

I participated in a panel discussion on "What makes an Effective Mathematics Teacher?" Faculty of Humanities and Education, School of Education, 2011

Collaboration with Trinidad math teachers/ math association (MMERITT - facebook), 2011- 2012

GRANTS FOR SCIENTIFIC RESEARCH

1) Grant of the scientific program “Mathematics and Science Education in the North-East of Europe: History, Traditions & Contemporary Issues” by Russian State Scientific Fund, Moscow, 2003, Joint Project of Karelian State Pedagogical University and the University of Joensuu, Finland.

2) Grant of the scientific program “Bologna process in mathematical and natural science pedagogical education: tendencies, perspectives, problems”, by Russian State Scientific Fund, Moscow, 2005, Joint Project of Karelian State Pedagogical University and the University of Joensuu, Finland.