

To All Current and Potential Colleagues

Dear Colleagues,

At the top of my Russian career, before I moved to Boston (in 2002) I ran an institution which was an analytical branch of the City Department of Education of a large city with about 1,000,000 citizens and about 130 schools (most of which would represent an equivalent of the combination of American elementary, middle, and high school together). And before that I was in the field of a teacher professional development (please, see below for the details).

But my main professional achievement is being a *good* teacher. I am a highly experienced educator. I have been successfully designing and teaching my courses and helping to design various courses to many educational professionals. As an instructor, I am definitely above the average level, with a solid formal proof of that fact in the form of my student evaluations (<http://www.teachology.xyz/evvv.html>); with a strong conceptual view on what teaching is and how to teach effectively, efficiently, and sufficiently (<http://www.cognisity.how/2016/10/book.html>); with a strong experience in teacher professional development (<http://www.cognisity.how/2016/10/facilitating.html>); with an experience in inventing and implementing into a teaching practice new and effective teaching instruments helping students develop deep understanding of the subject (physics), (<http://www.cognisity.how/2018/04/MOCC.html>); <http://www.cognisity.how/2018/02/Algorithm.html>; creativeness, and critical thinking <http://www.cognisity.how/2018/02/thinkphy.html>; <http://www.cognisity.how/2018/03/ZPD.html>).

The rest of this letter details my experience in the field.

“He is a master. I think all professor should be able to teach as him. That way students would not have to spend hours reading off of lectures.”

“I can honestly say I had never seen a professor who cared more for his students and how they do, as well as what they learn.”

“Thank you, thank you, thank you! Mr. V, thank you for putting up with all of us this summer!! I feel much more prepared for the MCAT. And I loved the demonstrations! Thanks for putting all the time + effort!”

“Professor V, You designed this class so that those who put in the effort would succeed, so I gave it my all and sure enough. I want to say thank you for creating such a conducive learning environment for me to succeed. I hadn't taken a physics class since my freshman year in high school, so I was very nervous going into your class. I did not expect this course to become my favorite science course so far at BU. Physics is a hard subject, but you explained everything well and made sure we, as a class, had the tools necessary to succeed with enough hard work on our end.”

These are quotes from many nice words said about me by my former students (this link GoMars.xyz/evvv.html provides more examples, including the latest).

I believe, such a feedback is one of the greatest rewards any teacher can have.

Three times since my university graduation, I had to re-start my professional career from a square one. This feedback is one of the proudest achievements of my professional life.

Dear Colleagues,

I believe your view of an educator, is similar to mine, i.e. at the core of **an educator is a person who loves learning, who is good at teaching**, good at understanding the logic of learning and teaching processes, one who can clearly express that logic to students and to colleagues, the one who can think outside a box, who can create non-obvious solutions to non-traditional problems, one who can help colleagues becoming the best teachers they can be.

A good teacher is a teacher who can teach not only memorizing and repeating various – even very complicated – patterns (that is essentially no different from training animals doing tricks – BTW: that is what all current AI-systems do); but also *beyond*; i.e. a good teacher is a teacher who, in addition to solid knowledge and skills, can teach *how to think creatively and critically* – which is the essence of Human intelligence. Currently the AI field has no common definition of Intelligence, that is why I have developed my own. **Intelligence is an ability to create a solution to a problem which has never been solved before** (by the host of Intelligence; Cognisity.How/2018/05/AHLI.html). My definition not just grasps the quintessence of intelligence, but is also operational, i.e. measurable (hence, teachable). For me, the vital and ultimate goal of teaching is helping students to advance their intelligent abilities, i.e. helping them become truly human (and I teach this to my students, no matter what specific subject I teach at the time; using my own technique: Cognisity.How/2018/02/Algorithm.html; Cognisity.How/2018/02/ThinkPhy.html).

“I have a very particular set of skills, which I have acquired over a long career”. My student evaluations are the result of my extensive and successful professional experience in the field of education.

I have no doubt, I would be a good fit as a member of any professional team of educators.

What may make me stand out of some other educators is the breadth and deepness of my professional experience.

I have a deep knowledge of the main subject I teach (M.S. in Theoretical Physics), as well as augmented subjects (math, logic, problem solving, human psychology, methods for teaching); I am an expert in teaching methodology and teacher preparation (PhD in Education, experience in consulting teachers and administrators); I have a deep knowledge of Human Intelligence; I have an extensive and successful tutoring, teaching and research experience; I believe, all this makes me a *teach-smith* (so to speak; GoMars.xyz/TeachSmith.html).

I have a successful experience in designing and teaching courses for middle school, high school, college and university students, pre-service and in-service teachers. I have a clear vision of the structure of an effective on-site or online science courses (the latter should be more than a standard combination of “talking heads”, hyperlinked texts, screen simulations, and chat rooms).

A joke “those who cannot do – teach; those who cannot teach – teach teachers” is definitely not about me.

I could have become a physicist. To prove it to myself, in 2010 (not ever doing physics before that) I read some papers on high temperature super conductivity, and then wrote mine own, which was published in a peer reviewed specialized magazine (<http://www.sciencedirect.com/science/article/pii/S0921453410006179>).

I love working with teachers, but not because I cannot teach students – on the contrary, my student feedback tells me that I am a good teacher. I love working with teachers because I am good at teaching, and I have professional experience I would love to share. A large portion of my experience in the field of teacher professional development was summarized as a chapter in a book (Cognisity.How/2016/10/facilitating.html).

There is, though, the seed of truth in the joke. It is just a fact that *when someone is good at doing something, it does not necessarily mean that the one can also clearly explain what the one does, and why the one is good at it*, because “clear explaining” is also a special skill. I am lucky to have this skill, and happy to offer it to students and colleagues.

My professional goal is very clear – I work hard to maximize my professional output by applying all my skills and experience. Three times since my university graduation, I had to re-start my professional career from a square one (GoMars.xyz/vv.htm) and but I think I may be ready to my last transition.

When I was receiving my MS diploma in theoretical physics, I thought I would be becoming a physicist. However, when the Russian economy collapsed, in order to feed my family, I turned to tutoring, and later to teaching middle and high school students, and then college and university students, and then teachers. At the time, schools were some of few places where the government sometimes paid some money. Soon I realized that students liked my teaching, and I liked teaching students, and I started my second career – as an educator.

I joined a team of innovative teachers, administrators, researchers, and consultants. Our team has been running various teacher professional development activities, including a year-long projects involving teams from multiple schools, with the end of a year [bootcamp](#) for students and teachers. As the result, in addition to teaching, I also entered the field of teacher professional development, and educational consulting, and got my PhD in Education (specialization in andragogy, concentration in teacher professional development). However, I did not like the changes in the political atmosphere. In 2001 a miracle happened – I won a Green Card.

When I moved in the U.S. I started my third career from a square one (my first job was a janitor at a supermarket). Since no one knew me, and I knew no one, and I spoke just very basic English (which I learned myself from books, tapes, TV and radio shows), the journey to reestablishing myself as an educator was not quick and easy. But today I teach, I write, I research.

I am proud of my current achievements, but I am not afraid of making the next step in my professional journey.

I have been involved in many collaborative projects which had led to the development of new curricula, new course content, efficient tools for managing teaching activities and learning experiences, facilitating teacher professional development, running professional development workshops for teachers and administrators.

I started my teaching career as a tutor. Tutoring may be very helpful for gaining a deep understanding of numerous reasons for different students to have various difficulties with getting a good understating of math and physics.

Some tutors would help a student to do the homework, and then a student would come back with a new homework, and then again, and again. For me it felt like cheating. I wanted to teach my students how to do their homework on their own. My goal was to help a student reach that level of understanding so he or she would not need me anymore. It may have looked counterproductive – money-wise. But in reality, it worked for me very well, because parents of my students told about me to other parents, and I had plenty of clients.

Tutoring helped me to initiate the development of my teaching toolbox tailored to students with different background. People usually are eager to talk about gifted students, and how to help talented students to realize their potential. Struggling students do not often attract the same attention as gifted ones. Tutoring is like having a clinical practice. All good students are good due to mostly the same reason (a good background), but when a student struggles there might be numerous possible causes for that.

Teaching and tutoring physics, algebra, geometry, trigonometry, problem solving, logic helped me acquire an integrative view on various difficulties students may have and effective approaches to guide students through those difficulties. My Doctoral work was focused on the approach for igniting and supporting teacher’s sustainable desire to grow professionally, and on methods for helping educators to design the most effective path for their continuous sustainable professional development (teaching teachers about teaching requires deep and wide understanding of learning, teaching, and of the teaching subject).

In Russia I was a member of “Moscow – Perm Socratic group” – a collaboration of educators dedicated to promoting the [Socratic Method](#) of teaching (Cognisity.How/2018/02/Socrates.html).

I have a long and successful experience in teaching various mathematics and physics courses, courses for pre-service and in-service teachers and school administrators. I have been teaching Mathematics and Physics to almost all possible categories of students (i.e. to middle- and high- school students, 2-year and 4-year college students, university students, to students with learning difficulties, and to school teachers). I also have been teaching various courses for in-service teachers (in parallel with teaching math and physics).

For a number of years, I had been working at a regional institution for teacher professional development, providing various courses and training to teachers and school administrators. Individually and as a member of a team I was consulting and auditing individual teachers, schools, and school districts regarding educational policies, teaching technologies, learning outcomes, and quality of education in general. Alone and with my colleagues, I was traveling to towns and villages of the Perm Region to meet with teachers and administrators and helping them with adjusting teaching and administrative strategies and techniques in order to achieve better learning outcomes of their students; including preparing strategic plans for systemic development of a school, a district and a regional education system.

My administrative experience involves running a department of computerization at Perm Institute for Continuous Teacher Education, working as an assistant to the President of the Faculty Assembly of the Institute, and later running the Center for Development of the School System of City of Perm, which was an analytical branch of the City Department of Education (my last position before moving to the U.S.).

I was hired by the Perm State (a.k.a. Region, a.k.a. Oblast') department of Education as a consultant to help draft the "Program of the Development of the State Educational System for the five-year period". This was one of the highest levels of the recognition of me as a professional educator and a consultant.

After I moved in the U.S. and re-entered the field of education, I have been teaching Boston University PY105/106 Elementary Physics courses, as well as College Mathematics, Physics and Problem Solving at ITT Technical Institute (Norwood, MA), Wentworth Institute of Technology, Bridgewater State University, BU High School Academy.

During the years of my teaching practice I have developed numerous math and physics middle-, and high- school and college curricula, syllabi and lesson plans; problem sets, worksheets and hands-on activities. I have an experience in developing websites and using such ones as webct, moodle, blackboard, webassign, masteringphysics, wileyplus; creating new demonstrations, filming movies and posting them online, using Java applets and audience responds systems (eInstruction, Turning Technologies); developing laboratory experiments and writing manuals. I have been and am using different teaching strategies, including different media to motivate students to learn and to help students to master a subject.

My years of personal tutoring and teaching provided me with invaluable insights into how people learn and how to help them to master a subject and to become a more efficient learner (my teaching philosophy is summarized at Cognisity.How/2017/11/method.html). I have been sharing this experience with many students, teachers, and colleagues. I have strong communication skills, deep understanding of pedagogy, wide teaching experience, and competent in using a variety of educational software products.

I firmly believe in a scientific approach to teaching and to research on teaching. A teacher should be able to state specific goals, list the assumptions, formulate the criteria of a success, and establish measuring tools and procedures, and a researcher should be able to do the same as well. I am also convinced that contemporary technologies will allow to bringing teaching to a new level.

My personal teaching experience has always been entangled with my research and consulting practices, and this entanglement represents one of the most helpful assets I have and use when working with students, colleagues, teachers, and administrators, because I usually know what students, colleagues, teachers and administrators may want or need, what obstacles they may encounter and need to overcome, and how to help them to do that.

I am a team player, the goals of my team always set limits and directions for my personal professional goals. Throughout all my professional life as an educator I have always had good relationships with my students and colleagues. I always respect all my students and they know it, and they respect me back even if at the end of the course they do not have the grade they would like to have.

I am confident that my teaching, research, and administrative experience would let me to be a serious asset for a team of innovative educators, specifically, effective instructional designer.

Sincerely, Dr. Valentin Voroshilov (Cognisity.How/2018/02/Iam.html)

P.S. What usually confuses HR associates is the fact that never in my life I was holding only one professional position. Since the time when I was a middle school student, in addition to taking classes or having a full-time position, I had always had some additional job on a side, and then later in my professional career I held at least two official positions, and sometimes even three. And I firmly believe that my "extra" experience only amplifies my experience, no matter which specific professional position I would hold.

Dr. Valentin Voroshilov
Physics Department; Boston University
Physics Department; Bridgewater State University
valbu@bu.edu GoMars.xyz/vv.htm

Education:

PhD in Education: “Methods for Motivating Teachers Towards Continuous Professional Development”
Moscow Academic Institute for Innovations in Education; Moscow, Russia, 2000

M.S. in Theoretical Physics: “Homogeneous Relaxation in Weakly Non-ideal Non-equilibrium Bose Gas”
Perm State University, Perm, Russia, 1985

Areas of expertise:

A) administrative practices related to running a unit of an administrative structure, such as a department, or an institution, including but not limited to:

1. strategic and tactical planning
2. observing, guiding, coordinating, evaluating the performance of employees
3. analyzing individual reports, preparing and presenting cumulative
4. managing everyday workflow

B) consulting on developing teaching practices at different levels (individual teachers, teams of teachers, schools, school districts)

C) auditing teaching practices of individual teachers, teams of teachers, schools, school districts

D) public relations – representing the team of developers to different groups of prospective clients (teachers, administrations of different levels)

E) analytical practices:

1. developing and employing various analytical tools – surveys, interviews, tests
2. conducting analysis and presenting reports

F) developing and teaching various courses for pre-service and in-service teachers, including but not limited to:

1. philosophy of education
2. role of teaching in human practices
3. curriculum development and lesson plan preparation
4. assessing learning outcomes of students
5. classroom management with and without differentiation
6. how to become an effective teacher (the role of self-reflection in professional development)

G) developing and teaching various Math and Physics courses for undergraduate students (non-physics majors, including pre-service and in-service teachers):

1. preparing a syllabus (structuring the course, building up learning paths)
2. writing/composing lecture notes and problem sets
3. developing problem solving strategies and guiding techniques
4. lecturing, guiding, tutoring students (including teachers in service)
5. developing, testing, performing physics demonstrations and laboratory experiments
6. video and audio capturing, editing, posting, streaming

H) teaching creative courses as such “Lateral thinking”, “Problem solving strategies”

I) as a faculty member of a research university: facilitating, monitoring, consulting faculty on developing curriculum, preparing lectures, incorporating various teaching activities into a course, analyzing the learning outcomes of students.

J) using and consulting on using online teaching instruments (blackboard, webassign, mastering physics, etc.) and personal response systems

PROFESSIONAL EXPERIENCE

Education Advancement Professionals: www.GoMars.xyz

Boston University, Boston, MA; Physics Department: 09/2007 - present time

Lecturer (PY105/PY106 courses):

Responsibilities: Curriculum development; developing and editing lecture notes, homework assignments, laboratory manuals, exams; lecturing, overseeing work of teaching fellows and learning assistants.

Boston University, Boston, MA; Physics Department: 03/2007 - present time

Lecture Enhancement Coordinator (Physics Department Demonstration Facility Director)

Responsibilities: Cooperating with the faculty on using existing and developing new physics demonstrations and helping faculty with implementing contemporary teaching research-based techniques into the teaching practice.

Bridgewater State University, MA; 2010 - present time

Visiting Lecturer: Algebra Based Physics.

Wentworth Institute of Technology, MA; 2008 - 2012

Adjunct Lecturer: Algebra Based Physics.

Boston University, Boston, MA; Physics Department: 08/2012 – 08/2013

PDGK12 program/ Program Manager:

Responsibilities: Organizing and guiding teaching fellows – participants in GK12 project – on the use of physics demonstrations in Boston schools.

Boston University, Boston, MA; Physics Department: 08/2012 – 08/2013

BU ERC Lecturer:

Responsibilities: Curriculum development for and leading workshops “Physics - Demystified” for BU students.

BU Academy, MA; 2009 - 2012

Substitute Lecturer: Elementary Physics

ITT Technical Institute, Norwood, MA; 06/2004 – 2011

Adjunct Physics Instructor:

Responsibilities: Teaching Physics, College Math I and II, Problem Solving

Boston University, Boston, MA; Physics Department and School of Education: 09/2006 – 06/2007

Adjunct Instructor

Responsibilities: Teaching Physics to in-service high school teachers

Boston University, Boston, MA; Physics Department: 09/2004 – 03/2007

Lab Tech Coordinator

Responsibilities: Coordinating a preparation and carrying out of undergraduate teaching labs; managing the equipment; developing new teaching labs; consulting TFs

Boys and Girls Club of Boston, Roxbury Clubhouse, Boston, MA; 07/2004 – 11/2004

Teacher’s Assistant, Math and Science tutor:

Responsibilities: Tutoring in Math and Science to Club Members

Wentworth Institute of Technology, Boston MA: 01/2004 – 05/2004

Physics Laboratory Instructor: Department of Applied Mathematics and Sciences.

Responsibilities: Guiding students through a variety of Physics I and Physics II laboratory work

Tutor: Academic Resource Center. 01/2004 – 05/2004

Responsibilities: Tutoring students in Mathematics (Algebra, Geometry, Trigonometry, Calculus) and Physics

Center for Development of City School System, Perm, Russia: 2000 – 2002,

Interim Director:

Responsibilities:

managing teams of professionals of an institution responsible for development of analytical documents and policy recommendation for the department of education of the City of Perm.

Institute for Continuous Education, Perm, Russia: 1997 - 2000

Associate Professor: Department of Teachers' Skill Development. (1995 -1997 as a part time employee)

Responsibilities:

Taught a wide spectrum of courses to school teachers and principals of the city of Perm and Perm region
Examined teachers' curricula, Evaluated of the quality of teaching in physics and mathematics

Courses developed and taught included:

Methods for Problem Solving in Mathematics and Physics

Modeling of Mental Processes of Students while Problem Solving

Methods for Preparing Educational Tests

Planning Effective Teaching Activities

Director: Department of computerization and information technologies.

Perm State Technical University, Perm, Russia: 1988 - 1997

Assistant Professor: Physics Department.

Responsibilities:

Teaching a wide spectrum of courses to undergraduate students

Training students in Math to prepare them to study Physics

Developing physics and math curricula

Developing educational aids for students

Courses developed and taught included:

Mechanics; Thermodynamics; Electrostatics; Magnetism; Optics; Atomic and Nuclear Physics

Fundamentals of Quantum Mechanics; Algebra, Geometry, Trigonometry, Pre-Calculus, Calculus

Methodological development included:

Curricula in Physics for Undergraduate Students; Midterm and Final Physics Exams;

Collection and compilation of Physics Problems and solutions for Undergraduate Students

Perm State University, Perm, Russia: 1985 - 1988

Hardware Engineer: Department of Computerized Calculations:

Responsibilities: Various type of a technical support for effective running large computers based on IBM-type architecture

Middle and High Schools, the City of Perm, Russia: 1991 – 2001

Teacher/Tutor:

Teaching a wide spectrum of courses to students

Developing curricula and midterm/final tests for courses taught

Training students to Math/Physics competitions

Developing and testing learning tools for students with learning disabilities

Courses developed and taught included:

Algebra; Geometry; Trigonometry; Fundamentals of Probability Theory; Physics

Methodological development included:

High School Curriculum in Physics with Elements of University-level Physics

Math Curriculum for High School Students in Physics Classes

Introductory Lectures on Basic Quantum Phenomena for High School Students

Midterm and final physics exams

SELECTED CONFERENCES AND PUBLICATIONS
(more at Cognisity.How and GoMars.xyz/lc.htm)

What is “Teaching” and “Learning”? A short essay, where I summarize my views on what is teaching, what is learning, and why everyone should learn physics these days: Cognisity.How/2017/11/method.html.

[Becoming a STEM teacher: a crash course for people entering the profession](#) // amazon.com

[What does “thinking as a physicist” mean?](#) // 2011

[The fundamental laws of “Teach-Ology”](#) // 2016

[Project-oriented form of teacher professional development](#) / Presentation at 2016 PhysTech conference:

[Professional Designing as One of Key competencies of a Modern Teacher](#) / 2016

[Materials from a one-day workshop with Prof. Novak for teachers: “Educational concept mapping”](#)

[A general algorithm for creating a solution to a physics problem](#) // 2012

[What is the mission of education?](#) // 2018

[How much of “cyber” in “cyberthinking”?](#) // 2018

[An actual level of difficulty of test problems and its subjective perception by students](#) // 2009 AAPT Winter Meeting, Chicago, Feb. 15 (2009).

[Making the Transition from Introductory to Upper-Level Courses](#) // 2009 AAPT Winter Meeting, Chicago, Feb. 15 (2009).

[On a Definition of Work](#) // The Physics Teacher, Val. 46, May 2008, p. 260.

[Energy from nothing?](#) // Physics Teacher, Vol. 45, No. L1, p. L1, July 2007.

[On Putting Physics First](#) // “Interactions”, March/April 2007, p. 6 -7;

[Physics First or Physics in Parallel?](#) // 2007 AAPT Summer Meeting, Aug. 1 (2007)

[The Comparison Between Russian High School And American College Curricula](#) // 2007 AAPT Winter Meeting, January 2007.

[Constructing Learning Aids for Teaching Algebra-based Physics](#) / Poster, AAPT summer meeting, 2006

[Learning aides for students taking physics.](#) (a broader version of Phys. Educ. 50 (2015) 694-698, <http://stacks.iop.org/0031-9120/50/694>)

[A Map of Operationally Connected Categories as an instrument for classifying physics problems.](#) // (Mar. 2015)

[Critical reading of “Making sense of confusion” by Eric Mazur et al.](#) // (Mar. 2015)

[“To test or not to test?” This is NOT the right question.](#) // edutopya.org (Mar. 2015)

On electron pairing in a periodic potential // Physica C: Superconductivity, V 470, # 21, November (2010), pp. 1962 – 1963 // <http://dx.doi.org/10.1016/j.physc.2010.08.007>.

Classification of Educational Self-Determination of Students // in the journal “School Principal”, Moscow, Russia, 2001.

Universal Algorithm for Solving School Problems in Physics // in the book "Problems in Applied Mathematics and Mechanics". - Perm, Russia, 1998. - p. 57.

On the Necessity of Modeling by a Teacher of His/Her Own Pedagogical Activity // in the book “Development of Scientific Intercommunications in Eurasia”. - Berezniki, Russia, 1997. - p. 172.

Application of Operationally-Interconnect Categories for Diagnosing the Level of Students' Understanding of Physics // in the book “Artificial Intelligence in Education”, part 1. - Kazan, Russia, 1996. - p. 56.

Quantitative Measures of the Learning Difficulty of Physics Problems // in the book “Problems of Education, Scientific and Technical Development and Economy of Ural Region”.- Berezniki, Russia, 1996. - p. 85.