

Dear Dr. V.

Thank you for a great semester!
You are an awesome professor, and
I am so happy I got the chance to
take a course with you! You are very
funny, and you helped me enjoy
physics! Have a nice summer!

Sincerely,

Welcome to my full professional history.

Some of my students essentially called me “[an extraordinary teacher](#)”.

I would not go as far as that, but I would consider myself as a professional with an “out of ordinary” or “unordinary” professional experience, including teaching.

I am aware of the fact that for some HR or other professionals making this statement about myself may be seen as a negative sign. But I do not see the reason why should I hide the fact that I have a talent which

some other educators may not have. It does not make me better than others, but, hopefully, it makes me intriguing. Plus, I do not make a claim that I am good at everything. I like working in a team. The most efficient team is the one which is composed of people with complementary talents ([especially in education](#)). I believe the following ten pages (ten years of teaching!) of good words of what my former students have said about me, represent me better than any official Resume.

The full description of my highly diverse and very unusual professional experience in the field of education is on pages 12 – 27, including:

- * [“Elevator Pitch”](#);
- * [“Executive Summary of Professional Experience”](#);
- * generic [Cover Letter](#);
- * full [Resume](#);
- * my [Teaching Philosophy](#) and finally;
- * my [Reflection on Voices of My Students](#).

The main reason for representing this feedback is to demonstrate that when I talk (and [write](#)) about education, I know what I’m talking about. And I know it not because of books I’ve read, or my theorizing on the matter.

I know it because of books I’ve read, because of my own theorizing on the matter, and because of my own deep, broad, and successful teaching experience (more on this in my Reflection).

With best regards,

Dr. Valentin Voroshilov

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Voices of My Students ([the link to copies of some past evaluations](#))

“Prof. Voroshilov, I’m at a loss for words to express my gratitude. In all of my years of school, from elementary, into high school, and through college, I have been blessed with top-notch teachers. But I’m pretty sure you take the cake. I was originally debating between taking physics at Harvard or BU, and all the signs pointed to BU. Honestly, I kind of think it was fate. I am not sure if it was just a good student – teacher match, but I thoroughly enjoined your lectures. You have an uncanny ability to present material, and it’s pretty clear (to me, at least) how much effort you put into your work as a teacher.”

“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.”

“Professor Voroshilov is great – he explains concepts very well, and makes great use of clicker questions, demos, etc. Prof. Voroshilov also uses powerpoint, transparencies, videos, cameras, tablets, etc. very creatively and effectively to reinforce material from lecture.”

“I didn’t like physics before taking this class and now it’s one of my favorite classes.”

"I hated physics before taking this course, and now after taking both 105 and 106 with Mr. V, I actually really enjoy it. He is one of the best teachers I've ever had. Thank you"

“Best physics professor here, only one who cares if students are learning the material. Proves you don’t need a PhD in physics to teach this class. PhD in education is much more effective.”

“Makes concept sound simple.”

“If I could give a 10 for Dr. Voroshilov, I would. Excellent teacher. Makes physics fun (which is a very hard thing).

“I love Mr. V.”

“Dr. V is a great professor. Cares about physics and his students.”

“Loved Dr. V. Wish he taught during the school year as well.”

“Fantastic teacher.”

“Make you work if you want to do well.”

“It’s a generally really cool course.”

“Mr. V was by far the best professor I have ever had at BU. I wish he taught through the school year. He is always enthusiastic, explains topics well, and has great models. I don’t think any other science teacher at BU can match up to him.”

“Fantastic instructor. My favorite science professor I’ve ever had. Amazing at making even the most difficult or boring subjects interesting and fun. Absolutely hilarious. Won’t take physics if not with him. Just needs neater handwriting.”

“He is a master. He knows his material. He wants to help. That’s all I can expect from a teacher. He is great.”

“He tends to challenge us by truly assessing which of my aspects are flawed.”

“He’s great. One of the best instructors I’ve had at BU.”

“He really makes the class enjoyable.”

“Professor V is an excellent professor and by far my favorite I have had in my three years at BU. It would be a delight to have him teaching here during the school year as well.”

“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.”

“Best teacher I’ve had, bar none.”

“Explains things in a way that can be understood – explains why we care. Great and interesting demos. One of the best science professors I’ve had at BU. Actually wants us to do well. Lear expectations.”

“Val was a breath of fresh air after CH109 and 110. Great lecturer; I almost became a physics major because of Val (and the TFs, too). Explains well, is nice, has great presentation.”

“Incredible instructor; best one I’ve ever had at BU. He above puts the chemistry department to shame in how thorough and passionate his lectures are. I would change to a physics major or minor if he taught every class.”

“The examples were very thorough and thought-provoking. The demos were interesting and made of material more applicable to real-life scenarios.”

“Punctual, respectful of class end-time (much appreciated). Extremely knowledgeable about content, very effective at braking things down to digestive pieces, and presenting it in a logical, glowing manner. Highly engaging demonstrations. Great use of tools/props. Good energy (especially for a 9 am class). Professor Voroshilov has a very matter-of-fact/this-is-so obvious aspect to some of his statements, which I personally like, but could be discouraging to some students. If that’s just his personality, then I’m not saying he should change it, just be mindful of how others might perceive it.”

“Honestly, he is one of the best professors here in BU. He's engaging, loves teaching the material, and helps the students out to understand the concepts.”

“Very passionate, good at explaining topics and going through enough example problems, experiments/demonstrations performed in lecture were helpful.”

“I love you Mr. V, you make physics bearable!”

“Fair and quick grader. Has a really funny and dry sense of humor. Felt prepared for tests.”

“The professor is very enthusiastic and has a lot of experiments relating to the topics we're learning.”

“Professor V. presents himself as somewhat cold and calculating, and appears to not care for his students. This is the first impression most people get, likely due to the nature of the material not involving emotional response. In reality, Professor V. cares deeply for his students, and it is apparent when he spends the time to answer students questions, regardless of how complicated or simple it may be. Professor V's teaching style keeps you motivated and engaged, and his presentations are clear and direct.”

“I have always dreaded taking Physics — so much that I waited until the summer after I had completed all the other undergraduate requirements and still hadn't taken it. I am very glad I waited and had Mr. V as a professor; he knows the material extremely well and teaches it clearly and explains well. One of my favorite professors thus far.”

“Mr. V has the most extraordinary way of teaching a topic that most people fear. His sense of humor keeps the class amusing. I'm happy that my physics experience was left in the hands of such a passionate and instructor. The course always felt fair and prepared us for his expectations.”

“Amazing professor. Waited for the summer so I could take PY105 and PY106 with him. Funny in his way and very fair. Always helpful. Would only take this class with him.”

“I think he is very relatable and very funny. I think he genuinely wants people who are willing to work to do well. He is very fair with his grading policy. Many students who complain about him are just taking advantage of him to begin with, and are being unfair to him.”

“The professor explains the concepts very well although of the language barrier, and he tries his hardest for students to understand, he grades the exams fairly.”

“Prof. Voroshilov is very good at what he teaches, his slides are dense and helpful. Prof. Voroshilov is entertaining and teaches well. Prof. Voroshilov is awesome!”

“Prof. Voroshilov is always extremely prepared for lectures. Excellent lecture slides, demos and PRS questions, online class site and resources are excellent and helpful.”

“I appreciated your sarcasm and the way you were teaching us to be very specific with our question because this helped me to become better with my analytical skills.”

“Very enthusiastic and approachable. Genuinely cares about his students. Best professor at BU.”

“Thank you for making physics so much fun, and for being such an awesome teacher! Happy teachers’ day! You were definitely my favorite teacher! You always made our class very entertaining and I was really lucky to have you as a teacher! Thank you for teaching me to check my grades! Have a wonderful summer and stay in touch, I will read your book and tell you what I think!”

“He really cares about his students and provides the appropriate materials for their success.”

“Good instructor. Helps students learn well.”

“Good at breaking things down.”

“Passionate about teaching.”

“Very funny. Genuinely interested in the best ways to teach material.”

“Mr. Voroshilov has a clear understanding of all he teaches and is a master on the subject.”

“Mr. Voroshilov does a good job of doing example problems with a simple approach to make material clear.”

“Enthusiastic and entertaining.”

“Gives very fair exams.”

“Great explanation of concepts.”

“Very enthusiastic. Used lots of demonstrations. Always made time for questions.”

“Gives many question examples. Each lecture has many helpful visuals.”

“Very funny in some way. Goes over the course concepts clearly.”

“Fantastic. Love his humor, makes class fun. Tons of office hour availability which is great. Very good at explaining concepts.”

“Incredibly funny and encouraging. Really enjoyed the class.”

“Very clear and knowledgeable. Funny. Made class fun and attainable.”

“Cares about students. Jokes around with them.”

“Fantastic teacher. I suck at physics and Mr. Voroshilov made it very straightforward, understandable and manageable. Also hilarious.”

“Mr. Voroshilov has a teaching technique that is almost flawless, and I wish more professors had the ability to make a class as lively and interesting as Mr. Voroshilov has done this summer. He was literally ready to risk his life to show us demonstrations, solved as many problems as he possibly could, and was fair in exams. Way to go, wish more professors were like you. Very intelligent, knows material very well.”

“Makes the class entertaining. I find physics to be boring at times but he keeps things fun. Very fair grader and I like his tests.”

“He is clearly passionate about physics. His accent is not a problem, because he genuinely tries to speak slowly and clearly. His class demonstrations are really helpful.”

“Very smart and very funny. Physics is hard but Val made the experience more enjoyable. He’s great. No need to change”

“Great teaching style, and encourages thinking.”

“Russian spy. Knows his stuff.”

“I really enjoyed taking Prof. Val and would definitely sign up to take another one of his course. You can tell he wants his students to understand and do well.”

“Awesome guy. Loved being in his class.”

“Mr. V is awesome. I love his humor and he’s very good at explaining concepts clearly.”

“I love professor Voroshilov. His dry humor is a perfect cherry on top of this course.”

“Weirdly funny. Teaches clearly. Russian.”

“He always asks if we have questions: enthusiastic. Too awesome!”

“I really like Professor Voroshilov. I think he is great at explaining concepts and is very underrated. Very helpful in office hours”.

“The course’s workload gave me the ability to learn a vast amount of material in just a little time: most of science courses do not do that. The professor was approachable, friendly and was willing to spend much more time out of class than most for explaining topics.”

“Teaching - efficient, effective, easy to digest Presentation - funny, honest, blunt (Russian sense of humor is hilarious). Professor obviously cares a lot about the success of his students.”

"He goes through lots of examples in class which allows me to go back and look for reference when trying to do homework problems, very helpful. He has a very dry sense of humor that adds to the enjoyment of the class, and his delight over doing in class experiments really lightens the mood of otherwise long difficult lectures."

"Very funny and entertaining. Clear and to the point. Very detailed course materials, fair exams based on homework problems and lecture."

"Professor V was very passionate about the material and it was evident through his use of frequent demonstrations. He also went through many examples in class which made the theory more applicable."

"He knows the material really well (obviously) and is extremely clear about his expectations and what he wants us to know and get out of the course. The course is predominantly the basics and straightforward, but you get a really good foundation of whatever you are learning."

"Mr. V. Is very clear about his grading criteria. He is clearly enthusiastic about his subject. The homework and exams are a fair representation of what we have learned in class. He knows the material and has a good way of explaining them. Really good at explaining concepts."

"Mr. V is very good making physics less intimidating and easy to understand. His demonstrations of concepts in physics through small experiments are very helpful in understanding the course material."

"He is able to clearly articulate and explain physics. Great guy, and knowledgeable. Sometimes difficult to understand and read handwriting, but it is math not English."

"Mr. V is really nice! He tries his absolute best to provide necessary information for students to pass. He has EXTENSIVE office hours. I legitimately think he is the hardest working teacher I've had at BU - he uses these presentations to explain concepts and is EXTREMELY aware of things that people may not like (fast pace, accent?) and tries his best to accommodate for this. He is doing really, really well as a teacher and I understand why people prefer summer physics because of this."

"He was always prepared for class. He posted the slides in a timely manner and despite the class being an hour and a half long at 8:30 in the morning, he still made a good effort in being enthusiastic."

"The professor does a lot of practice problems which are very helpful for solving the homework and tests. Pretty good enthusiastic. Amazingly brilliant and makes physics comprehensive."

"The live examples he gives in class help. Great Examples helped to explain topics visually knows his students. Knows physics and minds of students. Professor Voroshilov is helpful and covers many examples and makes it simple to understand concepts. Great at explaining very stimulating Good at explaining, uses lots of examples in lecture, very fair exams Presents very clearly and thoroughly. Adds humor, keeps students engaged."

"The webassign homeworks were mostly helpful and the course gives AMPLE opportunity to get a decent grade."

"The course's exams were fair and often tested all the material learned in class. The homework, especially webassign helped prepare for the exams."

"The professor is a lovely person. Friendly and eager to help".

"He can explain concepts really well. Brings in humor to make class more interesting".

"Good professor, I am not naturally good at physics, but he explains things well".

"The homework and discussions helped me learn the material. The professor was energetic and happy to help us learn."

"Shows a strong willingness to help students and meet their needs".

"Availability outside class, always willing to answer questions".

"Much opportunity to get help and improve".

"Very knowledgeable and helpful."

"Homework is relevant".

"Good demos."

"I really enjoyed the course and webassign, homework was helpful".

"Explains concepts thoroughly".

"Funny, explains concepts well."

“Instructor was organized and prepared for the lecture.”

“Explains concepts slowly so easy to understand, great having slides online for reference, in class examples and experiments.”

“The course is very organized and the Web CT content is very useful. The professor is dedicated and explains concepts well.”

“Very good lecturer, extremely helpful during office hours.”

“I really liked Dr. Voroshilov and think he does a good job of explaining the material and does lots of demonstrations that make class more interesting.”

“Very detailed powerpoints – they were very helpful in studying for tests and doing homework.”

“Very nice man, very fair.”

“Good objective grading.”

“Labs are quick, easy and to the point. Homework is generally representative of exams, usually is relevant to material. Discussion is helpful. I like the webassign system.”

“Professor knew material well and was helpful in office hours. Labs were fair, even though I hate labs.”

“Instructor Voroshilov is pretty good at explaining concepts. He’s very funny which keeps people awake at 8 am. His PowerPoint presentations are very thorough and helpful.”

“Fair grading, good TAs, relevant reading, and helpful, accessible labs.”

“Helped to understand how physics is a part of everyday life. The instructor really knew his stuff, and his demonstrations were great.”

“Lots of visual aids to help understanding. The professor is good and funny.”

“I thought he was well organized and explained the concepts well. His emphasis on doing examples in class was very helpful! He is also pretty funny when he wants to be, which is much appreciated at 8 am while trying to learn physics. I found the professor, course and material so much more interesting than PY105!!”

“Very helpful. Wants us to succeed!”

“He experiments with methods to be more effective, very creative, very interesting and straight-forward.”

“The professor really enjoys the subject and has fun teaching – good demos.”

“Professor Val is very effective in teaching concepts, especially because it’s obvious he put a lot of work into it, in terms of visual aids and notes. Very good professor, always available and helpful to students.”

“He knows what he is talking about.”

“Always available and willing to stay beyond posted office hours. Entertaining lectures, effective teaching style, approachable.”

“Wants us to do well in class.”

“Grading is fair.”

“He is an intelligent man.”

“I couldn’t have asked for a better physics professor.”

“His demonstrations are awesome.”

“Loves teaching. Gives great examples and demonstrations in class.”

“Hands down, one of the best professors I had at BU. Great humor, makes physics very fun and exciting to learn, and has fair examinations and grading policies. Great presentation skills.”

“Great instructor – knows concepts well, and can grab our attention and keep it.”

“Very fair exams and homework.”

“The instructor is awesome with technology. He uses it as a very helpful tool in ways other teachers haven’t or can’t.”

“Great instructor – really helps me to understand concepts I am confused about.”

“Good lecturer. Knowledgeable. Better than D*****y”

“Very clear and reasonable expectations.”

“Lab is helpful in understanding material.”

“Much material covered in a manageable manner.”

“Tests were straightforward and expected.”

“Very straightforward, no surprises, and everything he did was relevant to the exams.”

“Good pace for amount of material.”

“The homework and exams were similar so studying was well rewarded.”

“Great class – keep it up.”

“Professor V is great and during class his introduction is most helpful.”

“Amount of homework was good. Just the right amount to grasp/solidify material.”

“Fast, but well taught course.”

“He is able to present a lot of questions that are likely to be present on the exam and he goes over it well.”

“Teaching is clear and concise. Examples on lecture slides are for homework. Demonstrations are cool and help cement concepts.”

“Very effective at explaining concepts.”

“Clear explanations, very good lecturer, nice.”

“Hard class made somewhat easier or more manageable because of Mr. V.”

“Very easy to understand and grasp concepts (even at the faster pace).”

“Straightforward course.”

“Good pace and good amount of time introducing every topic.”

“Challenging course. Covers all necessary topics.”

“Learn a lot in a very short time, but definitely able to master material and comfortable in physics.”

“Lectures were interesting, exams were decent, and homework helped a lot.”

“Summer course is fast paced, but worth taking with Mr. V.”

“Super easy course.”

“Course is challenging but not anything impossible.”

“Tests are extremely fair. Homework and textbook are very helpful.”

“He explains things clearly and labs are helpful.”

“I thought the test were extremely fair. I liked the problems taught and I thought the material on the tests was covered in class.”

“Physics is fun due to this class.”

“Very good. Not difficult for someone not good at math.”

“Teaches what needs to be known in a clear/understanding matter.”

“Course is clear and interesting.”

“Very fair exams/assignments. Improve grading scale – A is 95+, almost impossible in an already hard class.”

“Great at using real life examples and experiments.”

“Clear, easy to understand.”

“Well-paced course despite the course being compacted in time.”

“Organization of material is superb. Professor really really cares about his students’ success and learning. This is a very special, conscious professor, aware of his work and its impact.”

“Loved it, great summer experience.”

“Difficulty of the course is fair. Homework, labs, and attendance help boost exam grades.”

“Strength: his knowledge of the subject, his ability to teach us; labs are too long.”

“Great course.”

“Webassign is a great practice. Well-spaced course out a six week course.”

“Very funny and covers a lot.”

“So interesting. Does relevant problems. Makes exams related to homework questions.”

“He really enjoys physics and the experiments were cool.”

“Fantastic professor, hilarious, great and enthusiastic. Nice guy.”

“There were a ton of examples during lecture which were extremely helpful. He’s funny too and very willing to meet with students in office hours.”

“Knows answers to all my questions. Grading scale is ridiculous.”

“Very enthusiastic and interesting. Knows the material well and can explain it multiple ways.”

“Very good at explaining concepts and keeping students interested.”

“Awesome demos.”

“Professor Voroshilov is excellent. Very clear. Makes students understand.”

“Very clear on the course policy and gives many outlets of problems to do to understand the course material.”

“He knows what he is doing.”

“He emphasized his handwriting was hard to read so he made sure people were following along so that no one would feel lost.”

“Strong points were his mastery of the course material. He was always able to answer questions clearly. His demonstrations were also great, and the slides were well-prepared. Lectures sometimes were dull because we’d just worked through problems together.”

“The course covered a lot of content, but it was presented in a way that made it relevant to life – the real world, so it was interesting throughout.”

“Very clear verbally. Homework helps.”

“Good lab.”

“Fair exams.”

“Homework was very helpful in clarifying concepts.”

“Webassign – great tool.”

“Very fair in terms of time expected on studying and homework. Webassign problems were relevant to tests and useful in conceptual understanding the material.”

“Course is of adequate difficulty. Grading is very fair. Love the class. Great introduction to physics. Don’t see anything to be improved.”

“Exams and homework were very fair. Overall great course.”

“Great professor, though could try to be less monotonous, really funny sometimes. Overall liked him and class a lot.”

“The course was clear and well laid-out. It never felt overwhelming or scary.”

“Labs were great.”

“Great course, loved it.”

“Material is very difficult conceptually, but Val does a good job of explaining it.”

“The homework actually helped and the tests are very fair.”

“Learned a lot. I liked that the labs were for understanding material better.”

“He know the summer term is compressed, so he teaches accordingly and his exams are fair and he clearly has taken that time constraint in his mind. Also awesome physics demonstrations in class that are intriguing and help understand the material better. Improve handwriting.”

“Course was not too challenging, slightly boring, but I don’t really like physics.”

“Office hours with professor and teaching fellows saved me.”

“Course: concise and to the point; could be shorter.”

“Labs are usually very helpful to reinforce concepts, great that office hours last so long.”

“I like the way webassign works.”

“Obviously knows material very well and keeps class engaged. Encourages participation.”

“Great.”

“He clearly cares about not only the material, but his students’ grasp of physics. He did his best to show and not tell. Also, examples in class made up for the fast pace. I respect how his exams clearly reflect material from class and show a true understanding of presented material. Improve: He has mastered how to teach this course. Only important would be closer instruction of TAs.”

“Professor is very knowledgeable and explains concepts well. His demonstrations are useful and fun.”

“He clearly loves physics. While he has typos a lot it doesn’t ever interfere with clarity of lecture.”

“Instructor is passionate about material, quick to answer questions (email and in person). Instructor knows about material well and truly cares about students. At office hours, instructor is extremely helpful and patient explaining concepts clearly. 10/10 experience.”

“The professor is good at explaining concepts. He makes lecture interesting and is funny. He also is available for office hours regularly.”

“Very fun. Some of the funniest moments in my college experience. Great format.”

“Helps walk students through questions, does not mind back-tracking in case a student doesn’t understand. Has a lot of visuals and experiments that he does to help us understand the material better.”

“Very funny and engaging. Inspires interest.”

“Knowledgeable. Morbid humor.”

“Knowledgeable. Provides excellent class materials (PowerPoint, recorded lectures etc.). Assignments indicative of challenge level.”

“Enthusiasm and humor. Explaining how to keep going through problems with variables.”

“Mr. Voroshilov was an excellent professor. He quickly responded to all questions and was often available outside of class. He included demonstrations during almost every lecture that were both helpful and fun.”

“Strong lecture demonstrations. Good paring. Great dry humor. Very knowledgeable and well organized.”

“Very clear. Fair. Encourages questions. Works well with practical problems.”

“Mr. Voroshilov is really good at explaining concepts. He helps me regain my confidence in physics. He is super helpful outside class. I love his jokes.”

“Patient. Useful demonstrations. Useful practice problems.”

“The professor is really clear. His lectures and presentations do not simply gave explanations to memorize but rather comprehend them. He accomplishes this through demonstrations with experiments. Engaged students in problem solving. Also he makes the lectures interesting.”

“The professor is good at explaining concepts. He makes lecture interesting and is funny. He also is available for office hours regularly.”

Elevator Pitch

One of the first statements I tell my students is that the most important ability for succeeding in a physics course (and in life) is not mathematics, or even logic, it is *imagination* (and persistence).

Imagine that you are on a plain (or taking a train, or a bus), and talking to your neighbor.

Turns out, he is in education; for years has been teaching math, logic, problem solving, but lately mostly physics; developed and taught courses to middle school students, to high school students, to college and university students, to students with learning disabilities; has a M.S. in Theoretical Physics and a PhD in Education with focus on teacher professional development; taught courses to teachers; consulted school and district officials on managing innovations in education; was a consultant to a state department of education to help with writing a program for strategic development of the state system of education; was an assistant to a director of a regional institute for teacher professional development, ran an institution responsible for development of analytical documents and policy recommendation for the department of education of a city of the size of Boston (and often did all this at the same time).

No doubt, you would think that this guy was an expert in the field of education: an expert in teaching, an expert in advancing teaching practices.

This guy *is* me, Dr. Valentin Voroshilov. I was wearing all those “hats” in Russia before I moved in Boston. My career was very promising, but I gave it up for a chance to move my family away from a new “Tsar”.

At the time, I had no publications in English. *I didn't even speak English.* I had to start from a square one. First as a janitor. Learning English using books, radio, and TV shows.

Today I have recovered the most of my previous career ([very proud of it!](#)): I work full time at Boston University, I [teach](#) (mostly physics) and [I am good at teaching](#); [I publish](#) (*in English!*). I'm productive. I am also reentering the field of [consulting](#) and [teacher professional development](#).

In the end, I have a very broad teaching and research experience. In one word, I have become a [TeachSmith](#), so to speak. The journey from a teacher to a [TeachSmith](#) was long and wavy, but not unique, has many shareable elements common to every professionally growing educator (and summarized in book [“Becoming a STEM Teacher”](#)).

To get to know me better, I would recommend to check the following three web-links (would not take more than 20 minutes of total time):

[Voices of My Students](#)

[“Backpack Full of Cash”: pointing at a problem without offering a solution](#)

[The Essentials of Teaching Science](#)

[I have five LONG-term projects \(Might take decades to complete! But keeps blood running\)](#)

My connections:

linkedin: <http://lnkd.in/YCKbb2>

facebook: <https://www.facebook.com/VVTeachOlogy>

twitter: https://twitter.com/VV_TeachOlogy

The link to the *full* bio <http://www.teachology.xyz/vvli.html>

Executive Summary of Professional Experience

(I) Teaching

(A) Groups

5th-graders; 6-th graders; 7-th graders; 8-th graders; 9-th graders; 10-th graders; 11-th graders; 12-th graders; 2-year college students; 4-year college students; university students; school teachers; school administrators; district administrators.

(B) Subjects

Physics for Engineers (two semesters); Elementary Physics (two semesters); algebra, geometry; trigonometry; formal logic; problem solving; group theory (discrete and continuous); methods for teaching science courses; methods for advancing individual teaching practice; managing innovations in education (initiation, implementation, growth, support, assessment, audit).

(II) Managing/Consulting

Assistant to Director of an Institute; Director of Department of computerization and information technologies; Director of Center for Development of City School system; member or a team leader of a group of consultants for schools and school districts (initiation, implementation, growth, support, assessment, audit of innovations in education).

(III) Learning

graduated from schools with high GPA; participated in a wide range of extracurricular activities; developed personal approach to teaching (flipped the classroom before the approach was described in any publications); published papers on various aspects of advancing education; converted publications into PhD theses and then found an adviser; moved to a country without knowing the language; learned the language; learned how to teach using foreign language; started publishing in foreign language.

Cover Letter

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. But more importantly, leaving was the only way for me to save my son from being drafted in the Russian Army (which at the time was not much different from Somali pirates). 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 always open to making the next step in my professional journey.

For example, I am always open to more teaching and to a collaboration on development of new approaches to teaching and teacher professional development.

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 Continues Teacher Education, working as an assistant to the Director/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.

Resume

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

Education:

PhD in Education: [“Organizational and pedagogical conditions for helping teachers to master project-based approach for designing their own teaching practice”](#).

(as a part of a study on the methods for motivating teachers towards continuous professional development; [which has become a chapter in a book](#)).

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

An assistant: to the Director/President of the Faculty Assembly of the Institute.

Director: Department of computerization and information technologies.

Member: of the consulting group for schools and school districts.

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.](#)

[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 aids 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.

**In this short essay, I will try to summarize my views on
what is teaching, and what is learning.
(a copy is available at: Cognisity.How/2017/11/method.html)**

What is teaching?

Below is the quote from Google search on: “what is teaching” (the top answer):

teach·ing

/ˈtɛtʃɪŋɡ/ 

noun

1. the occupation, profession, or work of a teacher.
2. ideas or principles taught by an authority.

The second meaning of “teaching” is transparent: “teaching is a synonym for philosophy”. But the first description does not really say much what teaching is. “Teaching is what a teacher does”.

Everyone wants to be healthy and successful and no one wants to be ill and poor. The only difference is how we want to achieve our success.

There are people who use other people as a tool for climbing the social ladder. I would not recommend people like that going into teaching. Children feel when they are being used and always find the way to escape – one way or another. Anyone who wants to be a teacher (or an educator of some sort), should do it to help children to succeed in their life, and they will return the success.

Teaching is an important human practice. Many people think that teaching is simply telling students “do as I say”. This very approach is built in our DNA. Our parents used this approach when teaching us. Animals use this approach when teaching cubs, pups, baby birds (they rather use the “do as I do” version, which is also very popular among humans).

If teaching was indeed merely “do as I do” or “do as I say” practice, then of course everyone could do it! Teaching would not be much different from training animals (“a stick and a carrot” would do the trick). Clearly, teaching is something more complicated than just “do as I say”. Not everyone can become a good teacher. Everyone can cook at home, or drive a car. But not everyone can become a successful chef or a racecar driver. And when we say this out loud, it does not sound controversial – because it’s obvious! Yes, we know that some people are a better fit for some practices than others, and some people are not a good fit for some practices.

In particular, some people are just not fit to be teachers (which is not their fault), and one of the goals of every teacher preparation program should be identifying those people and helping them to find another professional path.

So, what is teaching, or, what does it mean to be a teacher?

I think that the answer to this question forms a fundamental basis for the whole professional philosophy of a teacher and for the practice built on that philosophy.

One of the first indicators of a true teacher is that he or she has a certain answer to this question. I also believe that there is no single correct answer to this question. I believe that every teacher should search for and find his or her own answer (although the answers might sound very similarly).

In this essay, I want to share my answer to the question “what is teaching?”.

To me, teaching is guiding students through a specifically designed set of learning experiences (a.k.a. student activities) to help them to develop or advance desired skills and knowledge – this is my formal definition of teaching.

Hence, a teacher is a person who teaches in accordance with this definition; this link leads to short statements about teaching which I call “Laws of TeachOlogy” at <http://www.cognisity.how/2016/12/handbook.html>.

A teacher might not be the one who designs the whole set of student activities, but should have a deep understanding of the reasons for the activities and measures of the success or failure of the activities.

We all know the old saying that one can bring a horse to water but one cannot make it drink. Well, a teacher cannot make a student learn unless that student wants to learn. Unfortunately, too often students start to learn only to avoid some kind of punishment. This kind of teaching might happen when a teacher does not care much about students, but just functioning to avoid being fired (mimicking/faking teaching).

On another hand, a teacher might be very forceful on students (“It is for your own good”) to become being praised. **I believe, no matter what a teacher does, students should not have any psychological damage (like, “feeling stupid”).** Teachers - like doctors – should take “a Hippocratic Oath” of a Teacher and promise “never do harm to anyone”, because there is always something more important in teaching than merely transmitting knowledge or training skills. A true teacher knows the limits.

Ideally, parents should be the first true teachers. The best gift a parent can give to a child is good habits and love for learning. The same is true for a teacher. Look at infants and little children – they always try things and want to learn something new! Now look at school graduates – so many of them do not want to learn anything new anymore (or cannot learn anything new, which is even worse). If children have lost their curiosity and desire to learn, that only means they did not have a true teacher in their life.

A true teacher is not the one who just loves teaching (“do as I say”), but the one who also loves learning. The art of teaching is based on love for education, and passion for sharing this love (and also on the science of learning).

Every student has his or her own learning style. Every classroom is different from another. Teaching constantly presents challenges: students do not act the way a teacher expects, parents or officials put pressure on a teacher. If a person cannot withstand challenges, that person should not go into the business of education in any form; she/he is not going to be a good teacher, or administrator or a researcher in the field. No one is perfect. Everyone makes mistakes (the difference is what we do after we made it). Mistakes are an inherent part of our life. Mistakes are inevitable and unavoidable. Especially when people learn something new. A teacher should understand that students will be making mistakes. Learning is based on continually overcoming mistakes and learning from them. If a student did not learn something, which he or she was supposed to learn, chances are that it was because a teacher made a mistake. A true teacher never stops learning (mostly because no matter how good we are there is always a room for improvement: new students are different from the former ones, world changes, a new year is never the same as the previous one). And a true teacher is always open about mistakes he or she has done, even (especially!) if it happens in front of a class.

To summarize, what does make a teacher to be The Teacher (or a Teach-Smith, so to speak: <http://www.cognisity.how/2017/12/TeachSmith.html>)?

Patience, love of learning, understanding and accepting personal limits, genuinely caring for students (they intuitively feel if for the teacher they are just pawns in his/her game for personal success), constant professional development – including, but not limited to – having deeper knowledge of the content of the subject he or she teaches, deeper understanding of the fundamentals of the knowledge development within a specific science (each school subject is a projection or a simplification of a certain science), deeper understanding of the fundamentals of the knowledge development in general, understating of human behavior in general and behavior of a child, understanding of the fundamentals of human learning and teaching.

From a procedural point of view, the simplest model of teaching is “teaching = motivating + demonstrating + instructing + explaining + assessing”, hence a teacher should have personal qualities, knowledge and skills which will allow to be able to motivate, demonstrate, instruct, explain, and assess (within the limits placed by “do no harm” rule).

A true teacher is not always the one whose professional description says so. A teacher is a person about whom other people say that they have learned something important from that person.

There is one controversy I would also like to address. Many people (including policy makers, parents, business representatives) think that to be a good teacher one just needs to know the content. But, that is not true. The content knowledge is one of many components of a good teacher, and not the most important one. Firstly, I have met people who had excellent content knowledge but were terrible teachers. I had professors who were at the top of the achievement list in academia, but who could not teach at all (they were very interesting storytellers, though). Clearly, they knew how to do difficult science and they did it. But they could not explain what they did, and why. Secondly, content knowledge is just a result of a certain amount of effort.

Any reasonable person who spends a reasonable amount of time can obtain content knowledge in the amount sufficient to teaching at a reasonable level. Personal qualities like willingness to learn till the first day of the retirement (at least), patience, etc. are also very important for becoming a true teacher. A teacher is - first - a person, and - second - a knowledge storage, a skill presenter, a guide, a trainer

What is learning?

A dictionary tells that learning is:

- * the acquisition of knowledge or skills through experience, study, or by being taught.
- * knowledge acquired through experience, study, or being taught.

For a teacher, this definition may be a starting point for reaching a deeper understanding of how people learn.

The first fundamental notion is that learning is a basic need, like food, or oxygen. There is a “slight” difference, though. With no food or oxygen, a person ceases the biological existence (a.k.a. dies).

Without learning a person ceases the social existence (the reason for all dictators to micromanage education - they are scared of free thinking which comes with true education). Learning - as a process and as a result - is solely responsible for the prosperity of a society (even if the prosperity still is very uneven).

Secondly, learning is a process; it has phases, it has stages (that is why a college does not accept middle school graduates). Learning stages might differ in length and difficulty, depend on many parameters (subjective like age, race, brain development of a student; contextual – what science is this subject about; social – culture, traditions, economics), but they are as objective as stages in the seasons we observe every year. The existence of these stages results in the existence of the specific patterns of learning, which must be reflected in the specific patterns of teaching.

We cannot jump from a spring right into a winter; similarly, we cannot jump into learning quadratic equations right after learning the addition within a hundred (the normal process of giving a birth requires 9 months and should go through well-established phases - from an embryo to a baby: the process of “giving a birth” to an educated person– from having no knowledge and skills to having them - also has specific stages). If despite our best efforts a student did not learn how to solve a quadratic equation, it means that his/her learning path had missed in the past some of the important stages (assuming that students’ learnability is adequate).

Thirdly, learning is a result, it is an achievement. There are many achievements in our life, which – kind of - just happen; learning how to walk, learning how to talk. Achievements like that happen usually in a natural way, they do not normally require special prolonged management, do not have to be controlled, assessed, regularly measured, at least if everything happens as expected.

However, reading and writing, adding and subtracting, solving equations, etc. are skills; and to learn those skills a special and longitudinal effort is required, and hence, these skills have to be assessed. What needs to be assessed, how, when and by whom, however, are some of the most controversial questions of the contemporary research on education.

True learning never happens by just watching and listening (i.e. by merely attending lectures), it happens by doing. One can observe every cycling tour; interview every famous racer, that will definitely help the one to understand the theory of biking, but to learn how to ride a bicycle one has to ride a bicycle. One can watch for hours other people swimming, but if one wants to learn how to swim, the one has to get yourself into water and start trying. In the latter case, it would help having around someone who could explain what one does wrong and how to correct it (a friend screaming “you can do it, you can do it” would not be much of a help).

Active lectures help to boost motivation, develop vocabulary, give a perception that things are not as hard as they seem. Reading (and watching, and listening) also helps to form a vocabulary, to strengthen some relationships between the current knowledge and the upcoming one, to ignite curiosity, to boost imagination, to reinforce self-discipline, to advance mental capacities.

However, skills are only formed by doing.

For example, if the only exercise students had been doing for 12 years is squats, they will not be good at push-ups and pull-ups. If we want students to develop a certain skill, we have to give them an opportunity to practice that skill (ideally – as long as they need to master it).

Our brain is acting in a way similar to how our regular muscles act. Memorization is a mental activity very much different from creating new images, searching for new meanings, describing new phenomena, or developing new approach to solving a problem (during different mental activities a brain does a different work).

Hence, if for 12 years in a school students only have been memorizing facts, it is not reasonable to expect from the graduates an ability to think critically, or to be creative.

Thinking critically is a specific mental activity, which requires comprehensive methodology, meticulous planning, detailed procedures, and designated time (much more time than just memorizing and retrieving facts).

Our brain is a powerful pattern recognition machine. As soon as it recognizes the task, it retrieves from the memory the sequence of the actions, which has to be performed to succeed. Of course, we assume that that particular brain is capable of storing and retrieving the information and governing the actions required for fulfilling the task (otherwise we have to discuss a case of learning disabilities). If a brain does not recognize the task, we have two options: (a) the task is the same but due to some features it is camouflaged as a different one; (b) the task is different and is really new for the brain and the brain does not have the solution (at least in full) in its storage.

Every teacher has to teach students to two different practices: (a) how to perform specific tasks (the set of those tasks should be specified by a curriculum); (b) how to create a solution to a problem which has not been solved in the past (by that person); the latter practice, in turn, requires a practice in making a conclusion regarding the familiarity of the given assignment - is it the same as one from the past (a task) or different (a problem)? Development of that skill also requires specific practice.

Teaching thinking critically (a.k.a. creatively) means teaching how to create solutions, invent actions/procedures which have not been presented/trained before.

In general, the answer to the question “what is learning?” depends on the interpretation of who is asking this question. For example, one can believe that learning is ...

1. memorizing facts and excelling in performing certain task (actions);

or

2. obtaining knowledge and developing skills which will allow to create (a.k.a. “construct” – for those who loves constructivism, as I do) solutions to problems which have never been solved by the person in the past;

or

3. from a procedural point of view, the simplest model of learning is

Learning = goal making + memorizing + reiterating/practicing + thinking/analyzing + self-assessing (reflecting on the actions done during the problem-solving process).

My personal definition of learning is a combination of all the three above.

I believe that teaching how to think critically, teaching how to create solutions to new problems is the most important goal and the most difficult task of the contemporary education. If a person cannot solve any new (for that person) problem, it is hard to expect this person would generate some knowledge (or product, or business) new to the society. However, if a person can solve problems which he or she has not solved in the past, there is at least a chance that that person would give us something absolutely new and unexpected (good or bad – that is a different conversation). We should keep in mind, though, that critical thinking cannot be learned without a solid foundation in facts and skills.

What changes does US education reform need?

Education needs its own “Manhattan Project”, or “Apollo Program”, which would reexamine the well-established paradigms, and would guide a broad search for new connections and correlations; which would combine newly presented advances in artificial intelligence with neuroscience to study and analyze multi-layered universe of individual, group, and institutional learning and teaching; which would bring in education newly developed technologies, including AI, virtual reality, augmented reality, top level robotics. This type of a program can be initiated via institutionalizing a collaboration between various professional and scientific groups by establishing a specific institution –an Institute for Learning and Teaching (the name is tentative, of course).

Within this Institute, professionals from various universities, intuitions, and companies would be able to join their effort and expertise (more at <http://www.cognisity.how/2017/11/PILT.html>).

My reflection to the voices of my students.

First, one might ask why do I post all that feedback, isn't this just bragging?

No, it is not just bragging.

I write on education (www.Cognisity.How), and I want to demonstrate that I know what I am writing about.

I know about education not from books or theorization.

I know about education from books, from my own theorization, and from my own highly successful teaching experience, from my whole educational practice.

I believe that having this type of a feedback shows that overtime I have made a transition from being a teacher to becoming a teach-smith :) (www.GoMars.xyz/teachsmith.html)

The first two paragraphs above are copies of the thank-you cards I got from two of my former students, the rest is the quotes from end-of-a-course (elementary physics I and II) student evaluations from 2008 to 2017 about me and the course I have designed. Those quotes represent about two thirds of positive (mostly) views expressed by students (the other third expresses sentiments very similar to already presented). It is worth noting, that many comments go beyond just "he is a nice guy"; many comments underline the fact that the course is designed to help students to get good understanding of physics.

Do I have any negative reviews from my former students?

Of course! (the copies of full evaluations are available on <http://gomars.xyz/mathhealth/myinfo.htm> but why would I presented *here* everything negative about myself? ☺)

Having only positive reviews is unnatural for a teacher of a large class. When one has several dozen students with different backgrounds, different expectations, different cultural habits and psychological inclinations, it is inevitable and unavoidable to have student who did not like the way one teaches (due to a list of possible reasons).

The first question is – does the teacher have more positive or more negative reviews?

Well, in my case, if I had more negative reviews than positive ones, I would not be allowed to teach these courses for so many years.

Since I am a teacher, it seems natural to me to evaluate my skills by comparing them with the skills of other teachers. Unfortunately, I have no access to statistic on other BU physics department faculty; I would even think that this statistic might not even exist. "Fortunately", www.ratemyprofessor.com gives some glimpses of "comparable" "data". Surly, no one can take seriously what students post on this site, at least until hundreds of students would express their opinions on the same professor. However, even with this amount of "data" we still can see some interesting patterns. There are faculty whose average rating is high because the most of the students' ratings are high; there are faculty whose average rating is low because the most of the students' ratings are low; there are faculty whose average rating is average because the most of the students' ratings are average. But there are also faculty whose average ratemyprofessor rating is average because **students' ratings are very opposite** (some give a high rating but some give a lower one). So far my ratemyprofessor rating is of the latter kind (good thing is that my official BU student reviews aren't such; but one can ask a general questions – what is more important, the average rating or the highest one?).

This is the glimpse of some of the reviews taken from the ratemyprofessor:

GOOD!

Mr. V was honestly the best professor I have had at BU. I never take the time to rate my other professors but Mr. V is worthy of the praise. He made the summer course worthwhile. His demonstrations were great and his humor always made my day. Go to office hours, do the web assign, and you will learn a lot. He is an awesome human. Thank you

BAD!!

Not fair. First exam was easy. But other exams were ridiculously hard. Exams are much more difficult than HW problems. Handwriting is horrible and it is difficult to understand him. Never tells what is exactly on the exam. Expects you to study everything he gives (labs, discussion, lectures, webassign, etc). Not clear at all.

GOOD!

I was very worried coming into this class, having ALWAYS struggled with classes like Physics. I was also worried when I heard Dr. V's strong accent. However, after taking 2 straight summer courses with Dr. V, he has proven to be an incredibly nice, caring, and funny professor who really wants his students to succeed!
GO TO OFFICE HOURS, DO HOMEWORK

BAD!!

Very difficult to understand. Homework questions are not like questions done in class. Goes through too much material far too quickly. Do not take this class over the summer.

GOOD!

I took PY105 in the summer and although I honestly dislike physics, I did enjoy Mr. V's lectures. I guess his accent's gotten better because our class was the first to not complain about it (2016). The exams are generally difficult but graded more leniently than most other BU courses IMO. I'd love to have him for physics again for 106, he's chill.

BAD!!

Very hard professor and moves at the pace of a fast train. he does not go through examples and thinks people understand concepts when they do not really. i really wish he would solidly lecture/explain more.

GOOD!

Val is a great professor. He is somewhat difficult to understand and his handwriting is atrocious, but overall he does a good job getting the concepts across. He has some awesome in class demos which are fun to watch. He tests very similar to the homework problems, so if you understand the homework fully you'll be fine.

BAD!!

Expects you to have read ahead of class and memorized everything. there is no required textbook, but he takes class problems, homework, and test questions from the one that he recommends, which is not helpful at all. he speeds thru things and doesn't give one time to write or properly digest the info. if he's teaching, take physics later.

You would probably prefer having a GOOD teacher, and tried to avoid the BAD one. But the fact of the matter is those two descriptions depict **the same person**, i.e. me (BTW: on the first day of each new class I always show to my new students a much longer list of pros and cons)!

I think this is very solid proof of the fact that different students have different learning styles and different teachers have different teaching styles, and sometimes those styles match and sometimes they don't.

It is clear that students' opinions about me are polarized, and I am absolutely fine with that.

The large part of my first lecture is devoted to presenting to students my views on physics, on teaching, on learning, on grading, and on my expectations about students. (for example, take a look at this short video: <https://www.youtube.com/watch?v=E8776nfGNX8>; over the years I have posted many short youtube videos, including videos on what is physics and how to solve physical problems).

I always mention a simple fact, that different students learn differently, people have different learning styles, and different teachers have different teaching styles, hence, there is always a chance that my teaching style does not match somebody's learning style. What to do if that happens? Well, a student will have to make a decision – stay or go to a different teacher. So far (knock on wood) I represent a good match for the majority of students taking BU PY105 and PY106 courses.

Among negative reviews the most common themes are: an accent (Russian), handwriting (guilty, my handwriting is not much better than the one of a regular doctor), too fast (well, the average speed of covering the material is equal to the total volume of the material divided by six weeks of the course), do not answer questions in full (that is sometimes true, it depends on a question, sometimes I just cannot spend much time on repeating the material learned two weeks ago and only can point at the material which is needed to be reviewed again), too forward with students (for example, when asking direct questions; an interesting observation – you ask a direct question to a student in a lecture and the student “shrinks”, but there is almost no problem if it happens on office hour).

I believe that for any teacher the list of positive reviews from students should present the best recommendation for a teaching job.

When I left my comfortable life in Russia and moved to the US I did not have professional network to rely on, or money, or language. It took me some time to finally land at Boston University physics department as a laboratory assistant. Gradually my English got better, and my knowledge of the new academic environment got clearer. After three years I got a promotion to run a demonstration facility. A year after I started teaching BU elementary physics courses, and I have been teaching physics since then. During the last several years, in addition to my full-time position at the demonstration facility, I also have been teaching, and traveling to different conferences with posters or presentations, and publishing various papers, but my dream has always been to become a full-time physics instructor.

I have an experience in research on teaching physics, I have an administrative experience, I have been helping to school teachers and administrators to improve teaching environment (for the full resume, please, follow this link: <http://teachology.xyz/mathhealth/rezume.htm>), but at my core I am a physics teacher. My teacher philosophy, my views on what is teaching and what is learning are presented in my book “Braking the Mold of Conventional Thinking: a Personal Quest for Teaching Philosophy” available at <https://www.smashwords.com/books/view/665204> (the short version of my teaching philosophy is attached as Appendix I).

P.S. This link <http://teachology.xyz/mathhealth/myinfo.htm> leads to a page with links to copies of some actual evaluations form the past.

Appendix I

Finally (August 17, 2017)!

<http://gomars.xyz/phy.html>

The complete elementary Physics course (two semesters) is available online. Now everyone can see and hear what I do in a class.

This is important for me because of many different reason, one of which is that I advocate for [the maximum openness in education](#).

Appendix II

I always tell to my students that there are science courses which represent the material simply as a collection of a disconnected facts. Courses like that do not represent students with the scientific way of thinking. Many people in the field of education for a long time have been propelling the idea of teaching students how to think critically, but they could not offer the method for how exactly this could be done. However, the method has been around for at least several hundred years, and is called – science thinking. The true science course has to guide students through the scientific way of thinking using the course material (i.e. facts) as the building bricks of the science students learn. This is how my physics course is developed and taught.

<p><u>An Erudite</u> One who has large amount of knowledge stored in memory and can quickly retrieve it. A task executer. Popular TV shows: “Jeopardy”, “Who wants to be a millionaire”, and more.</p>	<p><u>A Scientist</u> One who can produce new knowledge. A problem solver. Popular shows: N/A</p> <hr/> <p>Will be losing the professional importance due to the rise of data science, search engines, AI.</p>	<p>A “pile” (a.k.a. a ← <u>EDUCAION</u> →) of disconnected facts.</p>  <p>A regular thinking development. Regular education.</p>	<p>Structured knowledge.</p>  <p>http://www.cognisity.com/2018/02/Algorithm.html A scientific thinking development. Elite education.</p>
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Naturally, not all student like my approach, the evidence shows that some of them do.

Appendix III (some technical elements of my teaching are described at <http://gomars.xyz/phy.html>)

Teaching Statement (for the broader version, please follow to: <http://www.gomars.xyz/vvli.html>)

Dear Colleagues,

Below you find a very short version of my teaching philosophy, which has been presented in great details in my book “Becoming a STEM teacher”. In chapters “What is Learning”, “What is Teaching”, “How I flipped my classroom without even knowing it”, “What does “Thinking as a Physicist” mean?”, and others I lay down the results of my reflection upon years of my (mostly successful) teaching (individual posts are also available at <http://www.teachology.xyz/lc.htm>).

I believe that learning is more than just acquiring a certain set of skills and prescribed amount of knowledge. Learning is an important cultural process which happens when pupils (students) are being brought into the realm of relationships and traditions which should allow them (a) to prosper in the current society, and (b) to become active agents of the social progress.

I believe that a teacher is more than just a “walking knowledge storage” who imparts this knowledge on students and judge how good students have become at reproducing the knowledge imparted onto them. My definition of teaching is: “Teaching is *guiding* students through a specifically designed set of learning experiences (a.k.a. student activities) to help them to develop or advance desired skills and knowledge.” A teacher is a guide, who had become an expert in a certain field, and now helps students to begin and to walk a path to becoming an expert in the field he or she wants to become an expert. In order to guide students as efficiently as possible, a teacher has to use (and often develop) specific tools/instruments students should use when immersed into situations specifically designed to help them mastering designated skills. A teacher might be not the one who designs the whole set of student activities and corresponded learning tools, but he or she generally should have a deep understanding of the reasons for the use of the activities and tools. Students are not empty vases needed to be filled up with wisdom, not tabula rasa on which a teacher scribbles smart things. Students have certain world views, they have certain understanding of how the nature works, and a teacher cannot ignore ideas, conceptions, preconceptions (some of which might be incomplete or incorrect) students have when starting a course.

The goal of learning is to achieve a higher level of competency. Passive learning does not work. Strictly speaking, passive learning is not really a learning, it is just a precursor for an actual learning. A true learning happens when students are actively trying to merge new knowledge (usually presented to them by a teacher live or via mediating media – books, videos) with the previously internalized knowledge. Very often students run into contradictions, some of which are often called “mistakes”. However, the only truly real way of learning is through making mistakes and reflecting on how those mistakes had been corrected.

One of the most important qualities of a teacher is ability to guide students through mistakes they make (maneuvering *between* giving away the answer and making students feeling desperate).

When assessing student’s progress, a teacher is not a judge, but rather an auditor who has to present to a student the accurate measure of student’s achievement (or a failure).

In the end, the most important measure of a teacher’s success is good feeling students have about themselves, the course, the work students done during the course and the results of the work; and also the reputation of a teacher students pass along to fellow students.

That is why the simplest definition of a **“teacher”** is **“the person about whom someone said at least once – I’ve learned something valuable from that guy!”**.

My ultimate goal is to change students’ aptitudes about themselves and about physics. Many students are afraid of taking physics because they have an impression that physics is only for selected few, that succeeding in physics requires super intelligence. This impression is wrong. Anyone who is capable of solving quadratic equation and knows the multiplication table can learn physics. There are only two requirements for achieving a deep understanding of Physics:

1 - a good teacher;

#2 - a good student.

Being a good teacher means having a proof of a successful teaching (e.g. the voices of my students).

Being a good student means putting effort in learning.

If you are a good student, you don't give up, you try and try again, and you are actively guiding your or learning by making your teacher work for you. If something is not clear for you, if you feel like you don't understand something - it's not your fault; it only means your teacher needs to find the right way adjusted specifically to you to help you to master the subject.

If a teachers does good job, students not only learn the subject, but they also change their attitude to more positive side.

For example, my students always demonstrate the positive shift in their attitude.

www.Cognisity.How

On a scale from **1**
(strongly disagree) to **9**
(strongly agree) how
would you assess the
following statement?

**“I am very good
at physics!”**

or select **0** if you are
not sure.

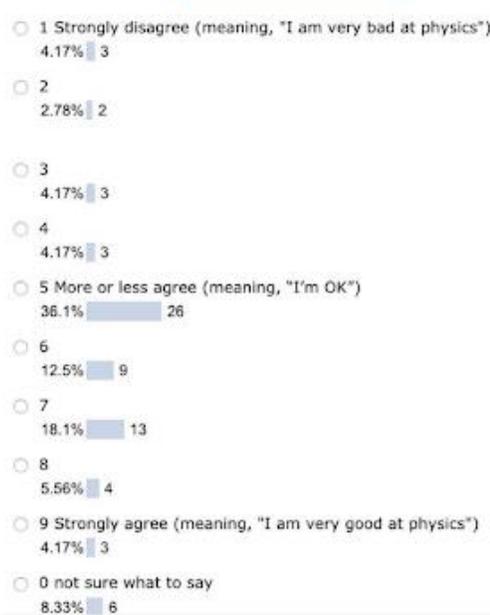
“I am very good at physics”

- 1. Strongly disagree**
(meaning, “I am very bad at physics”)
-
-
-
- 5. More or less agree**
(meaning, “I’m OK”)
-
-
-
- 9. Strongly agree** (meaning, “I am very good at physics”)

The first lecture



The last lecture



Sincerely,

Dr. Valentin Voroshilov

[Education Advancement Professionals](http://www.EducationAdvancementProfessionals.com)