Opinion

Analytical, theoretical microbiology and industrial subject teaching philosophy

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My philosophy of teaching analytical results bases my perception of today's industry needs (Environmental Industry, Petrochemical Industry, Bio-Pharmaceutical, Clinical/Diagnostic Industry and Food Processing Industry). My teaching plan is straightforward: teach your students as you would want to be taught - with enthusiasm, and with a passion for the subject combined with respect and understanding for the student.

At the early undergraduate level, the student population consists largely of students who are not microbiology or industrial experiences majors, but require chemical knowledge as part of their chosen fields of work, including medicine, engineering, food sciences, etc. These students take industrial for one or two years and may subsequently encounter very little formal microbiology in their lives. They will, however, be exposed to many facets of day-to-biosciences as part of their lives. This may include contact with microbiology as part of their jobs, but more likely the use of "common" theory and practice and biological technic in industry-knowledge when considering issues such as substance compatibility, use of medication, personal safety and environmental responsibility. I feel that it is the responsibility of chemistry teachers at the freshmen and sophomore levels to equip students with such "common sense".

On the other hand, I have observed that many students continuing in the field of chemistry have not learned basic chemical tools, for example, proper wet analytical techniques, because their courses emphasized state-of-the-art instrumentation. Even though it is important to keep course material up-to-date, this cannot occur at the expense of basic understanding. Another area of chemistry that has been neglected in recent years is descriptive chemistry of classes of materials. Knowledge of the properties of guides the students not only in the use of such materials, but also gives them the ability to design new materials with materials specific properties.

In order to combine the above goals of preparing people for everyday life and preparing young chemists for excellence in chemical research, I consider taking a classical chemical curriculum that provides fundamental chemical skills and tools, and wrapping each concept in the context of an area where the concept is being used. By reducing the abstractness of many concepts one helps the student to recognize their importance, apply them to real situations and remember them more easily. Some areas of context include the environment, energy technology, materials science, household chemistry microbiology, chemical and manufacturing industry, clinical chemistry microbiology, health and food microbiology and chemistry. Such an approach lends itself very well to train students in individual thinking and problem solving. By portraying the multidisciplinary aspects of the above areas and the specific role of chemistry in the overall picture, the teacher can instill in the students a mentality of lateral thinking, which is highly important in today's rapidly progressing global society.

At higher undergraduate and graduate levels, most students have decided to make chemistry and microbiology and biochemistry their careers. While I found those courses that teach basic tools and concepts most useful, students at these advanced levels should be given the opportunity to identify themselves with their scientific community, by greater exposure to the cutting-edge of the field. This involves use of the scientific literature, opportunities to be involved in seminars and conferences, as well as chances to carry out independent research projects. I have observed that the transition into graduate school or a non-academic career was much easier for students who worked in research labs during their undergraduate studies, either as summer students, co-op students, or for their senior research projects. Besides teaching the students "real" chemical art characterization methods used in materials chemistry. Analytical aspects involve Method development, Method validation, Method transfer Instrumental Chemistry microbiology, biochemistry, Separation techniques, microbiological isolation technique, aseptic technique sterility in industrial purposes, Chromatographic techniques, Hybrid Analytical instruments (LC/MS/MS, GC/M & UPLC etc.) or Molecular extended network structures. Expertise in some of these techniques and familiarity with many other techniques will allow the students to become versatile scientists, well equipped with the technical prerequisites necessary for creative work and lateral skills, work experience in a laboratory shows them that research is not always smooth, and requires ingenuity, sometimes improvisation, and interaction with other "specialists". Thus the students develop problem solving and team-player - skills.

Independent thesis research is the main avenue of learning for graduate students. My area of research in solid state chemistry, microbiology and pharmaceutical sciences provides a broad, interdisciplinary training platform for graduate and undergraduate students, which offer students an educational experience with an unusually wide variety of types of materials and state-of-the-thinking.

Much learning occurs through the direct interaction of students with faculty. Frequent interaction with scientists outside the students' area of expertise is a necessity in the multidisciplinary work proposed here, and helps students develop the communication skills that are vital in their professional careers. Students' experiences can be broadened

if the students are given opportunities to have access to several role models, not only their direct advisor. This is made possible and necessary by the multidisciplinary nature of the proposed research.

A plan for myself and the philosophy of pharmaceutical industries: My Industrial Experiences.

Through my long time working here at USA in pharmaceutical industry I understood following idea. The idea is about working in the pharmaceutical industry. You have to know where to start and you have to put your skill set to enter the sector.

I enjoy the science behind things and don't like just learning things at face value but I also like the attraction of being at the forefront of medicines technology and being able to affect people's lives positively on a global scale.

I understood that working in the industry may not provide the day to day patient contact of other sector but if you are working on a medicine it has the potential to bring benefits to a whole population of patients, so, it's a different way of thinking.

In my philosophy change after working in pharmaceutical industry, working in pharmaceutical industry-microbiologist has a broad knowledge which is helpful within the developments of medicines, especially antibiotics. Obviously the patient is key in the industry. However, microbiologist may have greater insight into the needs of the patients and how practical the medicine would be from a patient's perspective.

My experiences show that the first time was completely different to the 2nd time, which I spend in the industry. My first months were very flexible, managing my own workload, having the responsibility and autonomy of directly my own project and generally feeling very knowledgably in my specialist area.

The laboratory part is a lot more structured with set time and rotations in some of the different areas of industry.

I have a Ph D, I am more qualified to work in industry. However, that is not, necessary to have a higher degree to be able to join the pharmaceutical industry sector, despite what many of my colleagues believe seeing my extraordinary abilities. As I am a scientist having a Ph.D. to work in research and thus you have to prove your credentials from a research point of view or teaching point of view.

To seeing some newcomer in industry, my experiences says, it is true that starting salary can also put students off working in the sector people got a bit frightened because they come out of university with massive debt and when start in the industry don't come out with the same starting salary as somebody starting in hospital community.

It is fact my experiences says that science graduated entering industry can command a slight premium over a biochemist, microbiologist, chemist who has just graduated.

So, example but it will not make up the difference with starting up the difference with starting salaries in other sectors. It took five years for salary to catch up with the salaries of those who graduated at the same time as anybody. Once pharmacist/microbiologist/biochemist has begun work in another sector they often believe that means. They will never be able to join the industry, however May pharmacist/microbiologist /biochemist do entire the sector once they have some experience and are often make valued because of it.

Excellent communication skills are vital in the industry sector. Often in the industry you are working in cross functional teams, so you need to be a good communicator you need to be able to work well with others bearing how to prepare effective presentations that deliver the right messages, giving those presentations and adapting to feedback given essential. Other relevant skills include managing time effectively, meeting deadlines, appraising literature, being creative and solving problems. My experience gives following ideas while working in the pharmaceutical industry how to solve problems: in solving problem we should know how to play piano, in playing piano if we put our finger categorically it will gives us sweet melody, so, for solution, we have to solve our problem step by step.

My relevant industrial experience is defined as work of a technical nature that is related to the subjects, theory, practice, teaching, training and research studied in the practical matter and the manufacturing.

Most of the practical experience in industry depends on diligent recording, aseptic technique, recording, keeping standard log book. I understood in my practical experiences in industry that industry experience is one of the first requirements in job posting and a distinctive asset for professional and if you are a business applying for funding or bidding for a contract, industry expertise grants credibility.

On the above discussions may be appropriate to resolve important subject matter, but as employers and employees, we should first reach a mutual and explicit understanding of industry experience. What my experience say, because what expressed as industry expertise in conversations is no always limited to work experience or specialization in a given industry as many expect.

I constantly noticed this in many occasions during my 15 years career home and abroad instead a verily of qualities are actually sought or offered, which are not necessarily inherent in industry experience. A honest consideration of the following assets could be a productive starting point to identify communicate, and satisfy your needs. This condensed hast might even help discover unconscious real desires a recruiter or genuine strengths as an applicant. So, what remedy do really seek or purpose?

Through year after year industrial experiences I found following principle:

A. Influence: Power within industry or public institutions, which preferably yields some privileges and unfair advantages. Unfair advantages should be avoided otherwise it will brings negative development.

B. Lead: A transferable customer data or supplier portfolio that another business can immediately benefit.

C. Network: Strong connections in an entrepreneurships ecosystem that can maintain access, outreach and virility.

D. Direction: Professional strategic opinion, if possible, insider information on markets, customers, trends or regulations in progress.

E. License: Compulsory certification or official permit required to operate a business, apply for a grant, or enter bidding.

F. Persuasion: Supportive expert view to defend and justify thesis in public or to feel the safety of having an expert on board.

G. Intelligence: Informal account of the business relationships in the market and the major players agenda.

NOTE: Classification does not only help to choose the right provides or customers but also to build the right relationship with the. Because full-time employment or per time employment may not always be the best choice or even possible to exchange above asses. So it may prefer a consultancy or transaction relationship with the university related to the industrial pharmaceutical science faculty must be obligatory. May be, as business matter, would be realize that denied is somewhat different from industry expertise through not relevant.

Then, may change direction to a lobbyist or a market research firm. Since industry experts in its extended meaning is not entirely out sourcable. It is necessary to figure out the extent to which should develop these assets on own as well. In my experience, I hope this post helps better put everything in place. I have had experienced incident that a more honest and straightforward conversation could results in mutual more beneficial relationship to develop industrial progress which will bring economic welfare to the industry indirectly country will be in progress in industrial revolutions.

Moreover I gained experiences on medical products and problems, medical device quality manual, quality control manual for manufactures in pharmaceutical industry of medical devices providing compliances (ISO: 1348, 2003 & ISO: 9001, 2000). Canadian CMD CAS requirements, medical device directive 93/42/EEC of the European union and quality system and FDA-ISO 13485 which is acceptable for all regulatory and quality assurance globally.

Moreover, my work experiences in pharmaceutical industry, I understood the quality management system will also be continually improved for effectiveness ISO: 13485, 2003 standards or existing country's food and drug administration's regulations.

In my experience in pharmaceutical industry criteria and methods needed to ensure that both the operation and the control of this process are effective.

My experienced shows and proved that the quality management system is documented and includes a quality policy and quality objective, a quality manual, documented procedures internal documents and quality records. Quality records are controlled according to SOP and quality management system.

Responsibility, authority and communication are addressed in SOP.

Management responsibility

It provides information on quality management system through SOP. Industrial management responsibility and resources man agent, product realization, measurement analysis and improvement as per ISO guidelines.

Key performance indicators in my experience is: key performance indicators also known as KPI or key success indicator in pharmaceutical industry's help an organization industry define and measures progress towards pharmaceutical industrial goals. Once an industry has analyzed its mission, identified all its stakeholders' and defined its goals, it needs a way to measure progress towards those goals.

In my experience in pharmaceutical industrial experiences, I always give priority to the pare to analysis. In my eye pare to analysis a technique used for decision making based on the pare to principle, known as 80/20 rule. It is decision-making technique that statistically separated a limited number of input factors as having the greatest on an outcome either desirable or undesirable. In my experiences I saw pare to analysis is based on the idea that 80% of a project benefit. Can be achieved by doing 20% of the work or conversely 805 of problems are traced to 20% of the cause.

Based on my industrial experienced I reached the following conclusions which is acceptable and applicable because I performed my work as per GMP and followed fishbone diagram when utilizing a team approach to problem solving, I found there are often many opinions as to the problems root cause. I found way to capture these different ideas and stimulates the teams brainstorming on root causes is the cause and effect diagram. My ideas come from commonly literature called fishbone. The fishbone always helped me to visually display the many potential causes for a specific problems or effect. I saw n my industrial experiences it is particularly useful in a group setting and for situation in which little quantitates data is available for magic. I got the fishbone has an ancillary benefit as well. Because people by nature often like to get right to determining what to do about a problem, this can help bring out a more through exploration of the issue behind the problem which will lead to a more robust solution to construct a fishbone, start with stating the problems in the forms of question such as why? Why is the helpdesk abandon rate so high? Framing it as a why question with help in brainstorming, as each root cause idea should answer the question. The team should agree on the statement of the problem and then place the question in a box of the head of the fishbone.

Fishbone suggested categories as follows

Sggested industries are 4 (four)

a. Policies.

b. Procedures.

c. People.

d. Plant /technology.

Manufacturers and industries the 6Ms(six)

a) Machines.

b) Methods.

c) Materials.

d) Measurements.

e) Mothers nature(environment)

f) Manpower/people.

At the end I like to draw final remark as per my experiences in industry: it is about established trust by doing right thing in right time and by doing it with confident righteously.

My industrial experiences discover my philosophy in the light of my knowledge

During my education, I focused my efforts on the fundamentals and methodologies of microbiology and related disciplines. In my research I focused on devising a protocol to isolate microbial species which has ameliorated my understanding on practical as well as theoretical knowledge of microorganisms, how they interact with the environment and human hosts to cause infectious disease.

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Other work involves studying the basic processes by which micro-organisms adapt to their environment. This has relevance in understanding mechanisms of not only the microbes but also the internal micro system of human body.

I am organized, enthusiastic and adaptable individual. Combining writing article in journal with full time work has not only improved my time management skills but also developed my work ethic as well as good laboratory skills developed through my degree, e,g paying close attention to detail and organized, methodical approach to my work. I am ready to set up best microbiology laboratory as per USP and FDA with my Deligent team.

Being an articulate communicator and writer with an enhanced understanding of microbiology has developed my presentation and oratorical skills in my reports and speech. I have learned to work effectively with colleagues both from work and with fellow scientists. From my experience, clarity of purpose, frequent communication and flexibility are essential requirements for working well with others.

I am writing this statement to express my potentiality and discover myself after gaining knowledge through my studies and interest as a potential candidate for environmental expert position quality control, quality assurance or regulatory affairs in any USA institution I strongly believe that having more than 15 years of experience as a microbiologist and environmental expert specialized in Biological sciences. My academic background in Biological and pharmaceutical sciences sterility and environmental control utilizing code of federal EPI and ICH code and regulation in one of the leading pharmaceutical industry as a Microbiology Manager, current experiences of working as a professional scientists, Teaching and Research and Development and Trainer, provides a good match for the duties required for any suitable position. As my experiences indicate while employed with Microbiology Department for more than 15 years I specialized in duties related to:

I. Advanced system integration, upgrade and modification.

II. Preparing modification orders, inspection, upgrade and modification as FDA(food and drug administration, code of federal regulation USA).

III. Ensuring that results complies with the requirements national health and public health and diseases control and public safety regulations.

IV. Evaluate technical and commercial proposal, updated modification orders and diseases control and prevention change request.

V. Prepare medical product and problems specification, assist in preparing standard operating procedures (SOP), protocol, reasonable justified documents and protocol for selection of new technique or components and systems.

VI. Investigating and reporting on component or system failures, identified root causes and prepared recommendation for corrective and preventive action.

VII. Providing troubleshooting and problems solving support to the overhaul problems places.

VIII. Liaising with other internal departments, manufacturers, vendor, regulatory and quality assurance authorities for decision-making on certification aspects of modernization in the light of sciences and technology.

Given my technical knowledge and skills as well as Trainer and teaching to the departmental new comer and to qualify them to work and make trainees as per CFR. I would like to take the challenge of being associated with USA-FDA regulated more than 15 years and the world's fasted growing science and technology as a microbiologist the safe gourd of development. I am confident that my experiences, skills and qualifications would be an asset and add value to your esteemed institution.

I look forward to meeting you to participate in a personal interview to answer any of your questions and better present my skills and qualifications.

Along with my self-belief, I have the maturity, skills and abilities to contribute positively to an organizational whilst developing additional work based skills for my own future. I hope providing me with an opportunity to demonstrate my ability to make positive contribution to any organization. I look forward to hearing from you in due course and if you require any further information, please do not hesitate to contact me directly.

My objective is to pursue a scientific career in one of the many microbiological areas within a research-oriented biotech/food/medical industry or in the academia or university/school/college/institution. Being organized and having the ability to work to deadlines I can use my initiative, creativity and commitment to solve problems and would like to join a team where my skills can be utilized effectively in a setting that encourages personal and professional growth. during my 15 years experiences here at USA, a one of the most leading industry in all over United States, I trained as a trainer, lot of young scientist, specialist in the light of my Best Laboratory Practices as per code of federal regulation and thus I proved that I am the extraordinary scientist.

During my education and work, I have gained valuable experience in Laboratory Methods and Instrumentation, Specifically in Medical Products and Problems and in Nutrient Analysis, Molecular Biology and Microbiology and chemistry and biochemistry. I am familiar with Sterile and Aseptic Procedures and I am aware of the special protocol when dealing with different types of samples as well as product development and formulation in the light of USP, BP and GMP.

My strong points are analytical work in product development or Quality Control as well as Standard Operational Procedures and Test Methods Policy writing. In addition, I am proficient at Biological and Statistical analysis and summaries. Researching, compiling results and reporting conclusions are my particular strongpoint. My strengths also include computer literacy in both word processing and analysis programs, and an ability to easily adapt to new software systems.

I have had varied employment in the public relations sector including social works and have superior communication and interpersonal skills. In the light of my professional and academically background I delivered lecture in the different countries of the world.

My language abilities in English, Bengali and Russian and other languages as a polyglot have enabled me to undertake interesting international work experiences. I have worked successfully, both independently and as part of a team both my dedication and commitment to providing reliable, responsible service and my international background and experience, demonstrate that I would be an asset to your institution.

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I am very regular, polite, creative, a self-starter quick learner and a team player. My hope is to continue my career in an environment, such as yours that offers challenges and opportunities. I am looking forward to the opportunity to work in your industry as per your requirement and in the light of my qualification and experiences.

As a Trainer and Educator, as a Scientist and as a Manager in Pharmaceutical Industry.

Based on my work I can reach following conclusions:

i. Solutions-focused.

ii. Diligent professional with a comprehensive management background in manufacturing, research and development, and quality assurance.

iii. Quality control, specializing in the pharmaceutical and nutritional industries. Calm demeanor in the face of difficulties, ability to manage multiple projects while working under pressure in fast-paced environments.

iv. Highly versatile; adept at quickly mastering new roles and responsibilities. Reputation for integrity. Perseverance and work ethic. Continuously pursues opportunities to learn and takes on challenges for further professional development and growth.

Moreover, during my 15years service here at USA (2003-2016), I worked following project and written many test methods which are implemented and exercised by many other USA scientist, my trainee. These evidences can find anybody or FDA. That's why I said to FDA director: Dr. Robert Herren while he visited for inspection. I told him: this training log book was written by scientist about the scientist. (Training Log Book: 1TL, 2TL, Issued and written by: Dr. Sherajul I. Shelley, Altaire Microbiology Department (2013-2014) and many other evidence available in Altaire and Watson you care Americas-pharmaceutical in document control archive during the above mentioned years after years.

I like to mention some of important project that I worked out: Recent years (2003-2014) PROJECT: Test methods for Microbial Limit Tests (TMQM 06 Page: 165-174. ALT-MIC.LAB). PROJECT: Test methods for disinfectant effectiveness (TMQM01, Page: 175-181). PROJECT: Viable Bioburden monitoring of aseptic and non aseptic areas: environmental concern(s-02. Page: 182-192). PROJECT: Sterility facility clean room GMP training session Page: 202, sterility. PROJECT: Class 10,000 viable air microorganisms monitoring location follow-up, Page: 202.PROJECT: Determination of the total viable spore count for *Bacillus Atrophaeous* ATCC# 9372, paper strip biological indicators for the utilization of dry heat and for ETO sterilization. Page: 199-201. PROJECT: Investigations of out of specification results and medical products defects. QA-11, Page: 1-32. PROJECT: Monitoring of laboratory and stability units, retention and storage rooms MT 01, Page: 1-18. PROJECT: Response to spills of hazardous waste P-08, Page: 1-13. PROJECT: Testing and disposition of raw materials/components QC-02, Page: 1-7. PROJECT: Disposition of rejected materials: QA-21, Page: 1-5. PROJECT: Change control system QA-03, Page: 1-7. PROJECT: Correction to written documents QA 27, Page: 1-4. PROJECT: Quality control department training in analytical methods QC, Page: 1-10. PROJECT: Contingency plan, May 2013, Page: 1-10. PROJECT: Contingency plan, September 2012, Page: 1-10. PROJECT: The validation study of the pall flurodyne II DFL filter used in the manufacturing of levefloxacin ophthalmic solution, (USP) 0.5 % (A0360) PRT0971, Page: 1-28, 2012. PROJECT: Validation of the pall fluorodyne II filter pall part number; ABIDFL7PH4 for sterilization of the tropicannide ophthalmic solution, USP, 0.5%, ref: PROTO969, Page: 1-17, 2012. PROJECT: The microbiological integrity testing of the 15 cc natural DDPE oval bottles fitted with a 13mm natural LDPE controlled dropper tip and a 13/425 natural pp cap(bottles manufactured by micron plastiques, ref: PRTO988). Page: 1-6, 2012. PROJECT: The viability study of tropic amide ophthalmic solution, USP, 1% filter validation using bacteria; Brevendimunas Diminuta, atcc; 19146, Formula A0362, REF PRT0967, Page 117. PROJECT: The two stage filter challenge validation of the penyphrine hydrochloride ophthalmic solution, USP 10%, formula # AO359, PRTO879, Page: 1-14. PROJECT: Contract sterilization of power raw materials of power raw materials gentamicin sulfate preparation, shipment, receipt and control procedures. qm 28, Page 1-9, Dept micrbiology 2012. PROJECT: Environmental monitoring of non-sterile production areas, qm 35: 2012. PROJECT: Non-viable environmental monitoring program, operation and handling of the met-one laser particle counter s-05, Page: 1-9. PROJECT: Quality control department training in analytical methods qc-44, Page 1-10. PROJECT: Disposition of rejected materials, qa 21, Page: 1-5. PROJECT: Study of antimicrobial effectiveness testing of lubricant eye drops refresh tears after exposure to ambient environment. prt1090, Page: 2013. PROJECT: Media fill qualification and requalification study for the aseptic addition of pre sterilized powers challenge sterile mix area, v128.lot 12343, Page: 1-11, 2012.

NOTE: During my many years works here at USA, I workout different projects and those are fully acceptable and acceptable by the USA-FDA and thus company used them for the teaching purposes and for the continuation work. So worked as a professor for training, research and development and practical implantation.

I am the scientist as a professor. I have some many years of experiences in the research and development and expert teacher of biological sciences especially microbiology both in running a c GMP and as microbiologist. In fact, my initial training and beginning in the intuition was in teacher, trainer was in microbiology.

Accordingly, I have had occasion over the past several years to closely observe new scientific and research and development and to develop a familiarity with high level skills and competency.

It is my opinion that I have ability to apply my knowledge of microbiology, biochemistry and chemistry or biological sciences to the practical applications of university or college students even to guide Ph.D students and ready to take students for Ph.D courses and this made me a significant contribution to any institution's compliance program. I continually played an important role in ensuring quality and meet the established quality specifications and demonstrating the compliance the high quality specification for teaching and research purposes and any control testing and teaching program.

As a scientist, I like to state that students required to maintain continued compliance with the requirements as established by the well-known guide lines, regulations enforced by the world famous Universities and the established practice accepted within the university itself. Such requirements are generally expressed as current ICH guidelines and current information technology.

I specifically defined process to develop for teaching and establishing method and evidence which provides me a high degree of assurance that a specific process and hope will consistently produce a quality meeting its predetermined specification and high quality characteristics.

I hope, in this regards, I am the top percentile in my field. as such I further believe that my continued services with any university or institution will be benefit to such national interest. Your prompt consideration of this matter is greatly appreciated.

Experiences in the application of advanced principle I am ready to teach following subjects which are compliance program for the students, teachers, and scientist: for accuracy and reliability:

1) History and scope of microbiology and the chemical and molecular basis of life.
2) Equipment and techniques and cellular organization
3) Survey of microorganisms and cellular metabolism and energy pathways.
4) Microbial metabolisms and nutrition in plants and animals transport of molecules and gas exchange in plants and animals.
5) Bacterial growth, circulatory systems of animals.
6) Excretion and homeostasis and control of microbial growth, disinfection and antisepsis
7) Excretion and homeostasis and control of microbial growth and antimicrobial chemotherapy and hormonal control in animals and plants.
8) Microbial genetics and stimulus receptors in animals. Role of microbes in diseases and the nervous systems.
9) Locomotion the skeletal and muscular systems, elements of behavior, reproduction of cells and organisms, genetic inheritance, embryonic development, evolution, and ecology, Microbes in the environment and microbes in industry.

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Conflict of interest

The author declares no conflict of interest.

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