**Writing in Technical Fields**

In my late teen years, everyone was discovering themselves through the form of education. They were deciding on what to do, which fields they have interest in, and establishing goals for the near future. High school education played a vital role in their decisions; people started choosing Biology over Chemistry or both at the same time. Among a few other classmates, I took Chemistry as a core subject. The decision of taking Chemistry over Biology was inspired by the Academic Principle, Dr. Katarzyna Ewa Buga. She acquired a PhD in Chemistry from the Warsaw University of Technology, has over 16 years of experience in teaching, researching, contributing to the scientific journals, and has been guiding me ever since the start of High School. When questioned what could be the possible daily writing tasks an Academic Principle/ Chemistry professor, she responded by saying that “Emails, writing instructions for the labs, PowerPoint presentations and executive summaries that are presented to your higher ups play a vital role in our day to day tasks.” Through her guidance, The European School has managed to expand its Science programs and the school as a whole. In the moment of expansion, writing played a vital role in acquiring donations, promoting, and gaining support of the higher ups to allow her to expand at a private educational intuition.

In order to gain donations, grants, and expand the school’s science programs, communication played a vital role; in specific, communicating through electronic mails and letters. Effectively communicating and being direct to the point are the two main aspects of the email genre for getting an approval or a positive response from your target audience. Hence, the use of a proper and formal language in an email, in the words of Dr. Buga, “increases your chances of acquiring what you are seeking.”

Furthermore, the tone of an email also plays a vital role in communicating your goal towards a target audience. For example, an email to a higher up for a proposal would be professional, descriptive and would have a certain type of a “hook” to it to allow the target audience to be interested. While an email to students, would be friendlier and normally consist of information about upcoming activities and deadlines. In addition, an email to the student’s parents would be strictly professional, formal, and direct to the point; as it is an unknown person that could be considered a customer of the private educational institution. Although when communicating internally with a staff member of a particular organization, it is friendlier, yet keeping it professional. This is because after a while the staff members begin to have a personal relationship with each other, allowing them to “loosen up” on the formality of their communication. Hence, there is a lot of room to make errors, which, is tolerable to a certain extent. However, it is completely intolerable to have an email consist of errors, in terms of language and grammar, to a higher up and/or parents. Communicating towards an internal audience can be looser on the formality of the email, while communicating with an external audience needs to contain professionalism due the email itself reflecting the image of the institution/organization.

PowerPoint presentations also carry a great deal of importance in communicating to a target audience. At the educational institute, Dr.Buga presents using a PowerPoint presentation to other staff members on the progress and conduct of each and every one of the students. Although, she believes PowerPoint should only be used as a “visual aid”, such as charts, graphs, diagrams, and statistics. She doesn’t believe in “having words or points written on the PowerPoint.” She would rather have the key points and explanations printed out and take it as a reference during the presentation. Dr.Buga brings a valid point about PowerPoint presentations; a scientist not only has to communicate through emails and articles, but also has to communicate verbally. However, this does not imply that the language, grammar, and tone should be any different than when writing a formal and professional essay or email. A scientist must present to staff members or a group from the scientific community exactly the same way as they are writing an essay to the target audience. Formality, professionalism, etiquette, and respect should still be considered important factors when presenting a PowerPoint presentation verbally, exactly as a technical essay or email should be written.

In addition, when presenting a business proposal or scientific proposal to group of higher ups, an executive summary must be written. An executive summary contains the milestones for the proposal, in the case of Dr.Buga, she includes the blueprint on how to implement the overall design/product (such as creating a new Chemistry lab at the educational institute), highlighting the subcomponents of a high level design product, and how those subcomponents interact with one another. After the executives or higher ups have accepted the proposal, a high-level design document is presented with the full explanation of the design that was mildly explained in the executive summary. The writing style for each and every one of these documents have to strictly professional, formal, and direct to the point aided by visual diagrams, charts, and data. These two documents have zero tolerance for errors, as it is a proposal leading to an overall product in the future.

Dr. Buga not only has contributed to an educational institution, but also to several scientific journals over the years. An article in a scientific journal has other scientists as their main target audience. Majority of the articles include new findings, new methods, and/or recreation of experiments done by other scientists in the past. When asked which kind of citation format is used, Dr. Buga responded by saying that “very often the journals have their own citation formats.” They also have their own templates, which, the scientists submitting their articles to the journal have to follow. The format/template is different for almost every journal, as well as are the citations formats. These articles allow other scientists to expand and develop an idea proposed by the article in the journals. Hence, the articles have zero tolerance for errors. In order to avoid errors, “scientists have to be extremely professional, no spelling and/or grammar mistakes, and direct to the point.” If, by any chance, there was an error in conveying the method of the experiment conducted by the writer, the other scientist recreating and/or expanding on the experiment might contain different results. Leading to a decrease in “the writer’s credibility among the scientific community.” Dr. Buga went on to express “not to mention how embarrassing it will feel”. In addition, she considers it to be vital for every one of her students to understand the value of well-structured and detailed instructions for each lab experiment and its final results of the experiment in a lab report.

Emails, lab reports, articles in scientific journals, PowerPoint presentations, and executive summaries are all part of almost any technical field. Writing and the writing style plays a vital role in all of these genres, and aids in acquiring a grant, to be acknowledged by the scientific community, acceptance of a proposal, donations, and/or simply to get work done. Dr. Katarzyna Ewa Buga has acknowledged that the writing style in any genre can make the difference between acquiring a positive or a negative feedback. Writing is an essential part of communication, which has been used by her successfully and has brought her success in her technical field as a teacher, researcher, project manager, and an academic principle. Lastly Dr.Buga gave one essential advice as a successful person in this technical field that I’m pursuing: “*Read a lot of scientific journals and familiarize yourself with the style used. Never rush things; if you rush things or do things at the last minute, you are bound to have errors that could be exposed to multiple audiences. And in a scientific article and lab experiment/ lab report, never improvise even if you believe the end result is completely wrong. As there are no right or wrong answers. A theory is right until it is been proven wrong.”*

**Interview with Dr. Buga**

**Does the field require lots of writing or a little?**

*(Dr. Buga): Chemistry does require a lot of writing – in terms of publications - new discoveries are constantly made and published by scientists. In terms of every day work chemists usually keep lab journals to document their work.*

**Who are some typical audiences?**

*(Dr. Buga):Other scientists, students, etc. Also writing plays a huge role when you present something to your higher ups. The writing can actually determine whether the response would be in your favor or against. Formal vs informal.*

**What are some typical genres?**

*(Dr. Buga): Scientific journals, posters, progress reports, email, and executive summaries*

**In your career, what is an important piece of writing you have contributed to? Why was this document important? What did you learn from doing it?**

*(Dr. Buga):Several articles to scientific journals, e.g. Macromolecules – the articles were written together with my supervising professors, to publish work I have done during my PhD studies. Several other scientists in their works later cited these publications.*

**Is first- or third- person voice preferred? Why?**

*(Dr. Buga):Third person. Traditional approach, allows you to explain what you are doing objectively. Giving the reader the idea of objectivity. More credible.*

**What organizational pattern is predominant?**

*(Dr. Buga):It depends on the journal the article will be published in. There are usually templates available to download and used for preparation of the paper.*

**How are visuals used?**

*(Dr. Buga):Graphs, diagrams, photos – to present data: either raw or processed.*

**What evidence is considered convincing? What evidence is not?**

*(Dr. Buga):If the experiment and findings can be repeated (based on the data presented in the article) then it can be considered convincing. If however, after following instructions completely, one cannot reach the same outcomes, evidence can be questioned.*

**What citation format is used?**

*(Dr. Buga):Scientific citation, some journals may ask for a very specific style of citing. Very often the journal has their own citation formats.*

**What is the field’s tolerance for errors in content or method?**

*(Dr. Buga):Less reliability, more criticism.*

**What is the field’s tolerance for errors in writing?**

*(Dr. Buga):All manuscripts sent to the publisher are reviewed by specialists in the field and either accepted or not to print.*

**What are the editing requirements?**

*(Dr. Buga):Depends on the journal. Journal gives you a format to follow, more like a template.*

**If I wanted to write an article in a journal, what would the guidelines be? How would I learn to do that? Are the guidelines published or just passed on from person to person?**

*(Dr. Buga):Guidelines/templates are published, depending on what you are writing.*

**What could be the possible daily writing tasks as an Academic Principle/Chemistry professor?**

*(Dr. Buga):* *Emails, writing instructions for the labs, PowerPoint presentations and executive summaries are presented to your higher ups play a vital role in our day to day tasks.*

**What are the benefits for a good technical writing style in your profession?***(Dr. Buga):It certainly is a plus when communicating to the target audience, especially higher ups. It increases your chances of acquiring what you are seeking. Lets say if I write a sloppy email and I am all over the place, it will most certainly decrease my chances of acquiring my goal of that email. Instead, if I use proper language, grammar, and format, I would be increasing my possibilities of acquiring an approval for my proposal through the email. In addition, the email to a higher up vs an email to students have different tones. Different tones have to be used for different target audiences.*

**What is the tone or format of writing an article in a scientific journal?**

*(Dr. Buga):When a scientist writes an article for a well known scientific journal and its actually published, it is considered to be quiet an honor. However, scientists have to be extremely professional, no spelling and/or grammar mistakes, and direct to the point. If there is even a slight mistake in article, the other scientist who might be trying to recreate your experiment might contain a different result due to lack of explanation or informal writing. Hence, decreasing your credibility among the scientific community. Not to mention how embarrassing it will feel.*

**What are the different forms of emails that you send to your higher ups, teachers, students, and parents?***(Dr. Buga):Obviously, if it is a new teacher it would be very professional but after a while you could include a few friendly comments and it becomes a little less formal. Having to send an email to a parent is completely formal, professional and direct to the point. Same with a higher up.*

**How are PowerPoint Presentations vital for communicating a certain aspect to a target audience?**

*(Dr. Buga):PowerPoint presentations are extremely helpful when presenting a specific idea to a group of people. In my case, every Monday and Thursday we have a staff meeting in the afternoon where I present using a Powerpoint. We reflect on each students progress, conduct, grades, and how to make the students’ lives easier as well as ours. Although, I do not believe in having words or points written on the powerpoint. I use powerpoint presentations for visual aid, it contains a headline and graphs, charts, data, etc. The written points are printed out on a piece of paper that I prepared and I use it as I am presenting.*

**What is the one piece of advice you would offer a beginning writer in this field?**

*(Dr. Buga): Read a lot of scientific journals and familiarize yourself with the style used. Never rush things; if you rush things or do things at the last minute, you are bound to have errors that could be exposed to multiple audiences. And in a scientific article and lab experiment/ lab report, never improvise even if you believe the end result is completely wrong. As there are no right or wrong answers. A theory is right until it is been proven wrong.*

**Writer’s Memo**

After completing the essay, I revised it quiet a few times. My most common mistakes since High school were run-on sentences. I took Dr. Dahlin’s advice on reading it out loud several times and using OWL to go over the comma usage (main cause for my run on sentences) and I fixed them based on my comprehension. Another issue that I faced was writing about a writing style and having to explain it. At a point I went all over the place and wasn’t able to stick to the point. I managed to fix that, and also removed a few genres and elaborated more on a select few. Since high school, Dr. Buga was my Chemistry and Mathematics teacher, however everyone, including me, called her “Ms. Kasha”. I never really knew that she had these many achievements and this much success in such little age compared to most scientists I know. Thus, my first draft addressed her as “Ms. Kasha”, her nickname and informal, instead of “Dr. Buga”, a more formal approach giving her the respect she earned. I also had to correct a few spelling and grammatical errors, such as writing “give” instead of “giving” or missing a “t” in “style” as a typing mistake.

I am glad that I was in the same country as my professor to have a face-to-face interview with Dr.Buga and observe her all day, allowing me to grasp the importance of writing in her daily tasks. Furthermore, I managed to learn a lot about writing styles, different genres, some that I’ve never even heard about, such as Executive Summary and High Level Design Document. These take extreme importance in meetings and business proposals, hence having no tolerance for errors. This assignment also allowed me to reflect on my previous writing styles, on emails and lab reports, as I used to be quiet informal compared to the level of formality it should actually be.