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English 382 – Research Paper Capstone Project

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10 May 2022

A Growing Need for Technical Communicators: Analyzing the Historical Background of Technical Writing and the Role of Intercultural Communication in Documentation

Technical writing and communication are such a pivotal skill set in contemporary society as there is so much continuous growth and expansion in a plethora of fields such as engineering, science, and international business. Despite these developing trends in industry and trade there is a serious lack of quality technical communicators available to fill positions and jobs that require them. In looking towards the historical background of technical writing better insight can be gained as to why this skill set is so essential to the advancement of society and the success of my desired career path as a technical writer post-graduation. Early forms of technical writing most notably the impressive work of Leonardo Da Vinci during the Renaissance period and the takeoff of documentation amid the World Wars provide a far-reaching development of the technical writing discipline. These World Wars were such dynamic events in the history of technical writing because they saw the first large scale demand for documentation through the military and manufacturing industries. Also fundamental to the technical communications curriculum is the role of intercultural communication in documentation with the ever-increasing global economy where companies serve products internationally. This international business of engineering and scientific work requires an

adequate understanding of the diverse cultures and backgrounds of customer to navigate through both language and cultural barriers. Through analyzing these means there is considerable potential to benefit the all-around understanding and importance of the technical writing profession.

Considering the Historical Background of Technical Writing and Communication

In considering the historical background of technical writing and communication there must be a view towards the availability of the discipline in modern day society. Professor Miles A. Kimball of Rensselaer Polytechnic Institute explains this relationship in his article for the Journal of Technical Writing and Communication "The Golden Age of Technical Communication" stating "Some time ago, I had a conversation that made me reconsider the state, substance, and history of technical communication. A technical publications manager … mentioned that he did not care if he hired people with technical communications degrees; he just wanted people who could think, communicate, and solve problems" (Kimball 330). Here Kimball an expert in the field of Communication and Media explains that our view of the history of technical writing should be shifted by the value in which the skill is instilled into today's society. From his experience Professor Kimball shared that technical communication is not appreciated enough even by recruiters of a technical publications team.

The issue which this illuminates is that our present education system does not direct enough time and energy towards preparing students to 'think, communicate, and solve problems' such as the manager wanted at a sufficient level for a career as technical writer or associated field. Professor Kimball projects a resolution for his concern in arguing "that we should engage with this broad scope of technical communication by revising the focus of our

academic programs to offer technical writing instruction more broadly as a set of skills everyone should learn – not just professional technical communicators, not just engineers and scientists, not just business-people or symbolic-analytic workers, but everyone" (331). This equitable approach details the philosophical dilemma of technical communication as far too many fails to grasp how the application of the study of technical writing transformed the historical perspective of the world and included a wide array of people not just professionals. Such perspective can be gained through analyzing the historical background of technical writing.

The Profound Impact of Leonardo da Vinci

Leonardo da Vinci as a technical writer far ahead of his time produced numerous works as both an engineer and scientist especially through his renowned notebooks of drawings and journals on a variety of subjects. English Professor Ronald J. Nelson of James Madison University reflects on da Vinci's accomplishments for the field of technical communication writing "that da Vinci was a superb technical writer. He was fascinated with matters mechanical, as is everywhere apparent in his notebooks. In these notebooks we can refresh ourselves on the range of his technical contributions – from a jack to a file cutter to a wire-testing device to a variable-speed drive to a hydraulic screw to a spindle-shaped hull to a two-level bridge … we can only be amazed at the workings of this man's mind" (Nelson 80). Professor Nelson's detailed look at Leonardo da Vinci's accomplishments here is a testament to the immense transformation of our modern-day society that we owe to the technical writing industry.

Also is the matter that these early forms of technical writing share many of the same principles and guidelines we follow today. Remarkably “among the now-standard technical writing techniques that [da Vinci] employed were technical graphics of his many inventions, definitions, descriptions of devices, explanations of processes, classifications and divisions, and careful recordings of his myriad observations of the world around him” (80). Leonardo da Vinci’s approach to technical writing shared many of the trends we come to see in installation manuals, user manuals, and service manuals. There was a momentous level of intrigue towards the world around us which raised important societal questions that allowed us to evolve and develop.

Further, da Vinci’s “proclivity to work toward progressive clarification is a technique that we as technical writers would do well to incorporate in our writing … The care and accuracy of his measurements … His words seem to invite acceptance – appoint that we need to remember when writing to achieve a certain purpose with a certain audience … straightforward language …” all these elements displayed that the technical writing discipline could be made available to a wide array of people not just professionals (80). In terms of writing towards a particular audience this idea relates to our more modern term of user groups while straightforward language refers to the assertive and direct voice a tech writer should use towards their user group. Conclusively, the early work of Leonardo da Vinci facilitated how the application of technical writing transformed the historical perspective of humanity and provided a stable structure for mass accessibility to a throng of lesser educated people in forthcoming periods other than experts such as da Vinci and his contemporary Michelangelo.

Takeoff of Documentation Amid the World Wars

Such as Leonardo da Vinci's impact on the function of technical writing the entrance into the two most substantial global conflicts in history in the World Wars were similarly effective in progressing the discipline. For example, author Ken Baake explains the documentation of World War I era weapons in his article for the Journal of Technical Writing and Communication "Writing the Trenches: What Students of Technical Writing and Literature Can Learn Together" stating that "We began with an overview of the war and then quickly focused on the Western Front experience and the new technologies of battle – machine guns, flamethrowers, gas, airplanes, battleships, and tanks. Essays on the war discussed these specific weapons, while manuals of the time provided simple but effective cut-away diagrams … this war was so savage because it came at a time of prolific technological and industrial growth" (Baake 287). From these sentiments Ken Baake supports the notion that World War I symbolized a crucial milestone in the expansion of technical writing.

During the First World War there was a 'prolific technological and industrial growth' which required soldiers and other personnel to be equipped with documentation that would teach them how to operate these new weapons and machines. As Mr. Baake wrote this documentation came in the form of 'cut-away diagrams' which worked to label the different descriptions of devices, definitions, and explanations of processes through careful recordings such as the work Leonardo da Vinci undertook by himself. The drastic change in this modern circumstance was simply the sheer volume of documents that had to be put together to assist crews from multiple nations.

As the First World War progressed there was less violent technology that required documentation as well “take the wrist watch, which was easier for soldiers in the trenches to use in coordinating attacks than was the statelier pocket watch” (288). This example provides evidence of non-lethal inventions which the technical writing field had a factor in during the immense production of manufacturing for the global conflicts. Also, important to note is the system by which military documentation standards changed the industry. With these rapid developments in technology “much technical writing involves classifying, describing, and defining … the lexicon of military technology, the many terms that appear in the texts to describe weapons and their users … Unclear meanings of terms such as ‘projectile,’ ‘diffusion,’ and ‘unnecessary suffering’ allowed for liberal interpretations … of what was acceptable … Both technical communication and literature students saw the irony of trying to use writing – however clearly stated – to regulate and make orderly the violent chaos of war” (288). These military documentation standards of attempting to clearly state the intended usage and effects of lethal equipment did not always prove to be successful.

Through these experiences in writing manuals and other literature for weapons and other equipment during World War I there was a demonstration that a more precise structure must be put in place to ensure the safety of the user groups. In other words, the stable structure from which early technical writers such as Leonardo da Vinci had established was found to be insufficient during the World War I era. This realization was a critical step in the history of tech writing because the military industrial complex had discerned that more stringent standards of documentation must be necessary to increase the accessibility of information and the profession at large.

Introduction of the Society of Technical Communication

Following the enormous shift in technical documentation needs during the World Wars was the introduction of the Society for Technical Communication (STC) to administer the proper standards that were essential to increase the accessibility of information for the profession. The story of the STC states that though "The origin of technical communication has been attributed to various eras: Ancient Greece, the Renaissance, and the mid-twentieth century … the professional field was firmly established during the First World War, growing out of the need for technology-based documentation in the military, manufacturing, electronic, and aerospace industries" (Society of Technical Communication). The STC organization provides a tremendous dedication towards the advancement of technical communication and was instrumental in the history of technical writing for instilling proper standards. Aiding members achieve these standards to "understand these changes in the field and to help them adapt their skills to the needs of the marketplace" (Society for Technical Communication). The history of the STC organization founding in 1953 was pivotal to the future growth of the technical writing industry and beneficial to the all-around accessibility and understanding of the profession to those interested in the field.

Looking at the Technical Communication Profession Across the Ages

Going back to Professor Miles A Kimball's consideration of further professionalizing the technical communication field there is a distinction that can be drawn between the discipline and profession. While Kimball mentions that "technical communication degree programs have grown 231% to meet a perceived demand for professional technical communicators … the *discipline* of technical communication has experienced tremendous growth, the *profession* of

technical communication looks less rosy. The most striking indicator is membership of the Society of Technical Communication … early 2000's STC boasted … over 25,000 … [in 2017] its membership ha[d] fallen to about 6,000" (Kimball 331). This precipitous drop in membership is an extremely discouraging sign to Professor Kimball of the health of the technical writing profession. The historical development of the profession is determined to be the cause of the current downwards trajectory of the craft. Kimball sees "four trends in the historical development of the profession, the first three of which [he] calls the *Brass Age,* the *Beige Age*, and the *Glass Age* of technical communication … They spawn a boom, then become incorporated into the next wave" (334-335). Analyzing the development of these ages of technical communication will allow for a clearer picture of the complications the professional tech writing industry faces.

According to Professor Kimball the first age is the *Bronze Age* which consists of a relationship between technical communication and war. He writes about the *Bronze Age* that "War has long been a primary generator for technical communication. As scholars … have proclaimed, technical documentation started as a *profession* by explaining weapons to American soldiers during the 1940s and 1950s – in World War II and its continuation in the Cold War … but also participated in the adaption of military technology for civilian uses – most notably, the Internet … World War II and the Cold War created a boom in the profession" (335). Most important from this quote is that the initial surge of tech writing began with a reliance on war and that the profession helped to establish quite possibly the most influential invention of modern history, the Internet. With this revelation is the idea that the historical background of

technical writing is in fact more momentous to society than many realize and thus the value of the profession should be consistently high to the present.

The second age known as *The Beige Age* concerns the innovation of computers following the surge of Internet creation following the adaption of military technology. Though there were not many American conflicts following the fall of the Berlin Wall and prior to September 11, 2001 employment had remained persistent as America "had embarked upon another huge round of public and private investment: the microcomputer revolution, including the growth of desktop publishing in the 1980s and the opening of the Internet … to a public utility in the 1990s" (336). Kimball notes this era as 'beige' due to the color of many of the computers of the time. There is an additional finding here in that the technical writing industry was able to survive through periods without war if there was large scale investment in some type of modern technology. This was true during the first boom of the Internet. More recently was *The Glass Age* when "fiberglass and fiberoptic network [was] relied upon to share technical information, and because of the resulting dependence upon the global database …" (338). From these technical innovations spawned further needs for documentation to explain the processes and definitions of the latest technologies to developers and builders. These three ages of the history of technical communication detail the profound importance of tech writing on the context of the entire world and affirm the immeasurable value of the technical writing profession to this very day.

Finally, our current technical communication era is known as *The Golden Age*. As Professor cites "the Brass, Beige, and Glass ages are not so much over, as they are eclipsed by the *Golden Age* of technical communication. At no time in human history have more people, or

a greater proportion of living people, been involved in helping to accommodate each to technology … They instruct, they demonstrate, they hack, they modify, they tweak … they share with the entire world how to do what they did" (341). *The Golden Age* is the pinnacle of technical communication because access to information and documentation standards has never been more accessible. Technical writers own the responsibility of ensuring that these accessibility principles remain intact so that everyone shall be able to connect with the ever-growing technological innovations. Given these different ages of technical communication in the development of the technical writing profession there is a considerable case to be made for the future success of the industry and careers. A good reminder of the value of technical communication is that "Not all human communication is technical communication – but technical communication is a large and growing part of human communication. We are all technical communicators" (341). For this reason, Professor Kimball's assessment that the technical communication profession must be valued more and that we can accomplish this goal by establishing technical writing more broadly as a set of skills everyone should learn.

Introduction to Intercultural Communication

With the ever-increasing global economy where companies serve product internationally understanding the diverse cultures and backgrounds of customers is necessary to navigate through language and cultural barriers. This study is known as intercultural communication (IC) and is difficult to define as research continues to develop. Intercultural communication refers to the study of how people from diverse cultural backgrounds and social groups communicate similarly or differently from each other. Professor Katie Rieger from Oklahoma State University expands upon IC research in her article for the Journal of Technical

Writing and Communication “Intercultural Communication: Providing a Working Definition of Culture and Reexamining Intercultural Components in Technical Writing Textbooks” stating “sensitizing students to diverse cultures can lead students to better understand and respect these cultures. This respect and knowledge can lead to better communication that lessens the chance of stereotyping or ‘Othering’ behavior … Othering is the view of believing someone is different to you, usually while viewing yourself as ‘normal’ ‘civilized’ or ‘superior’” (Rieger 136). From Professor Rieger’s explanation IC confirms itself as a prominent part of international relations which could be extremely beneficial in the servicing of product with customers internationally. As a technical writer accessibility is the most crucial principle to practice. Allowing your customers and user groups to have straightforward communication with the product and company is vital towards achieving your tasks.

Four Common Critiques of the Definition of Culture

As Professor Rieger contended culture is a difficult term to define in the context of intercultural communication. One early and widely accepted definition of culture describes it “as patterned ways of thinking, feeling, and reacting” (139). To properly prepare documentation for an intercultural audience the issues with this and associated definitions of culture must be acknowledged. This confirmation of internal bias and bigotry allows technical communicators to better understand members of diverse cultures and social groups from their own. According to Katie Rieger there are “four common critiques related to many definitions of culture … [including] ones that lead to Easy answers, Othering, Essentialism/Reductivism, and a Eurocentric, Western-only, or ethnocentric lens” (140). The issue with easy answers is that these reflect an individual’s stereotypical thoughts of a diverse culture and most importantly

refuses to recognize human complexity. An easy answer diminishes the value of other cultures to a very base level understanding based on prejudice. “the term Easy answer is the umbrella term for many other issues that can occur, such as Othering, essentialism, reductivism, and issues that arise when using a Eurocentric … lens” the three other critiques of the different interpretations of culture (140).

Second is the Othering of differing social groups and which certain definitions of culture can lead to. The process of Othering establishes stereotypes as a normal measure of society and fails to question the inherent belief that one may have of their culture being inherently superior or considered normal. Othering does not require that the person be part of a dominant culture as “if one is not part of the dominant culture, they can still believe their culture is superior or ‘normal’ as compared to the dominant culture” (141). From this mentality of a less prevalent culture considering themselves ‘normal’ suggests that the ‘Eurocentric lens’ for which Professor Rieger also criticizes is not the only metric of superiority in intercultural communication. For example, America and European nations tend to consider themselves a segment of the western world and yet by the assertion that cultures outside of this ‘Eurocentric lens’ can practice Othering it is plausible that eastern nations notably in Asia might use this same tactic in return towards western societies. This equivalency of stereotypes about both western and eastern nations further cements the magnitude of intercultural communications in documentation in our present global economy.

Critiques of essentialism and reductivism allow the description of differing cultures into both a universal thought and diminishing behavior into an elementary causation. From these types of easy answers there could be a view that a culture does certain stereotypical acts or an

abbreviation of a culture into nothing more than these distinct behaviors. An example of this critique of culture could be that "All Russians are blunt [which assumes a] Static [idealization of culture] and consequently … [an inability to] grasp processes of cultural innovations [and] … emphasizing the normative force of traditional patterns of knowledge" (141). This quote elucidates the problem with essentialism and reductivism in terms of intercultural communication because there is the essential assumption that all members of a society act the same way while these same cultures are shortened from the ownership of innovations that disprove long held beliefs and stereotypes. Technical communicators should find irony in being blind to cultural innovations because the primary role of a tech writer is to improve the accessibility of modernizations and other additions to society so that everyone is able to understand these technologies.

The final critique of definitions of culture which highlights the importance of intercultural communication in technical documentation is the focus on the 'Eurocentric lens.' This phenomenon of a Euro-centric perspective is explained well by postcolonial theorist Anne McClintock who writes that "The word 'post,' moreover, reduces the cultures of peoples beyond colonialism to *prepositional* time … Other cultures share only a chronological … relation to a Euro-centered epoch that is over (post-), or not yet begun (pre-) … The world's multitudinous cultures are marked, not positively by what distinguishes them, but by a subordinate, retrospective relation to linear, European time" (McClintock 86). In looking at the role of a technical communicator with McClintock's analysis in mind there is a clear understanding of the role Othering plays in intercultural communication in our global economy. The influence of the European or western perspective can be perceived as dominant against

other cultures to the point where these other cultures can feel a sense of subordination to a western point of view. Given the long-term effects of cultural, political, and economic implications and exploitations of the eastern world because of colonialism and western empires there might be a perception or expectation of submission towards the western world. With this power dynamic in place there is reason to question the true effectiveness of intercultural communication in documentation when the primary culture is often seen to be European or otherwise English speaking.

Looking at the Effects of Intercultural Communication in Documentation

Culture now being affirmed as a difficult term to define given the many stereotypical beliefs and assumptions of distinct cultures from a 'Eurocentric lens' these effects should be looked at in how they affect technical writers and documentation. As a result of the long-term effects of colonialism and western imperialism in human history there is a meaningful relationship between the extraction of resources and labor from many eastern nations and our postcolonial world through globalization in how cultures communicate differently. One such example of such an effect is the clash between the individualistic cultures of the west and the interdependent cultures of much of the east. The individual is mostly separate from the environment while interdependence focuses on the surrounding environment and relationships. Stemming from this difference is an extension of cultural barriers over the language barriers in terms of importance.

With these stereotypical differences in place based upon the 'normative force of traditional knowledge' it is important to consider the various manners by which diverse cultures may perceive the importance and usefulness of technical documentation. As a member of the

individualistic culture of western society I can contend that we often tend to distance ourselves from our surrounding environment and rely more heavily on systematic approaches to solve problems think critically through documentation. These acknowledged stereotypes of western civilization may not always translate well to the traditionally dominant interdependent cultures of much of the east. Those in eastern civilizations who focus more on the extension of themselves to their surrounding environment and relationships may feel less of an inclination to utilize documentation or standardized approaches to solve disputes and questions. Though presumptive these intercultural differences in communication styles must be given proper attention as a member of a global technical communications team. In doing so we will be ensuring the benefit of the all-around understanding and importance of the technical writing profession for future generations.

Conclusion

Considering the historical background of technical writing from the early impact of Leonardo da Vinci's work during the Renaissance era, to the takeoff of documentation amid the World Wars, and the introduction of the Society of Technical Communicators to provide improved documentation standards, and the overview of the different ages of the technical writing profession there is a comprehensive outlook for why the field is such a pivotal skill set in contemporary society. The continuous growth in a plethora of fields such as engineering, science, and international business help advocate for the forthcoming need of technical communicators and educators to further advance society. Also, fundamentally important to the technical writing industry is the role of intercultural communication in documentation. This international business of engineering and scientific work requires an adequate understanding

of the diverse cultures and backgrounds of customer to navigate through both language and cultural barriers. Acknowledging the critiques of different definitions of culture and the excess of stereotypes which dilute the distinctive perception of the usefulness of technical documentation is key to successfully communicate with customers internationally in our ever-increasing global economy. Through the analysis of both the history of technical writing and the recognized judgement of society's unfinished work towards improving intercultural communication there should be efforts to expand the access to technical writing and communication skills so that everyone not just professionals will be able to achieve a more equitable society.

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