
Plenary

Transcending ESP Boundaries¹

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English for Specific Purposes (ESP) began as a way of teaching nonnative English speakers how to function in a world in which English had become the lingua franca. Over the past half a century, ESP practitioners and researchers have developed a field of study enriched by theory and practice. This paper will propose taking the ideas and methods garnered from this work to teach even native English speakers how to communicate better in professional situations. The need for good communication skills is especially urgent in the sciences, where experts can influence policy making in a post-normal science world. To reach a wider audience, the use of narratives is suggested in order to transcend disciplinary boundaries.

English for Specific Purposes (ESP), as noted by Dudley-Evans and St. John (1998), enjoyed an:

original flowering...from general developments in the world economy in the 1950s and 1960s: The growth of science and technology, the increased use of English as the international language of science, technology and business, the increased economic power of certain oil-rich countries and the increased numbers of international students studying in the UK, USA and Australia. (p. 19)

The field, since its beginnings in the late 1960s, has been enriched by more than 50 years of research and practice. Today, the methods that have been developed to teach the skills needed for professional communication can even be useful for native speakers of English.

This paper will argue that ESP has no native speakers and that rather than rely on “nativeness,” the aim should be for effective communication with members of a discourse community, one of the important concepts in ESP. Such communities have developed “genres,” or communication events that recur

among their members. Genres possess distinctive features, which can be used to aid teaching and learning. Finally, while progress in science and technology played an important role in the flowering of ESP after World War II (Hyon, 2018), we are now finding the need to shift to STEAM (science, technology, engineering, arts and mathematics) and the use of narratives to transcend disciplinary boundaries and deal with the issues of post-normal science.

ESP Has No Native Speakers

Here we are focusing on ESP but all languages have genres that can be used for specific purposes (LSP). For example, a native Japanese speaker with no training in medicine would find it almost impossible to understand a medical treatise written in Japanese. Orr (2002) stated that “The ESP that is primarily taught or researched consists of spoken and written discourse in academic and workplace settings, which is unfamiliar to most native and nonnative speakers and thus requires special training” (p. 2).

As an example of what can occur when a native speaker with no training in a specific field attempts to deal with its specialized language, here is what happened with the editing of a medical research paper abstract (Petersen, 2002, pp. 24–26). A Japanese speaker wrote the following two sentences to start the abstract:

Calcineurin inhibitors such as cyclosporine A and FK506 have been used for transplant therapy and autoimmune disease. However, the inhibition of calcineurin outside of the immune system has a number of side effects including hyperglycemia.

A native English speaker edited it according to the following points: Using “however” at the start of a sentence is not stylistically good; the phrase “such as” should be separated with the noun placed between the two words; the first two simple sentences should be combined. The edited result was:

“While such calcineurin inhibitors as cyclosporine A and FK506 have been used in transplant therapy and autoimmune disease treatment, the inhibition of calcineurin outside of the immune system has a number of side effects,

including hyperglycemia.”

However, examination of a corpus (database of texts) of medical abstracts revealed that about 60% of the instances of “however” was at the beginning of the sentence; almost all instances of “such as” did not separate the two words; and research paper abstracts usually start with the keyword to quickly inform the reader of the field being covered. In other words, the nonnative speaker, a medical researcher, had prepared a text which met the expectations of that discourse community and would have a better chance of being accepted for publication than the version edited according to native speaker intuition.

The Discourse Community Is The Communication Target

The discourse community was defined by Swales (1990, pp. 24–27) as having a broadly agreed set of common public goals, having mechanisms of intercommunication among its members, using its participatory mechanisms primarily to provide information and feedback, utilizing and hence possessing one or more genres in the communicative furtherance of its aims, having acquired some specific lexis, and having a threshold level of members with a suitable degree of relevant contacts and discursual expertise. The “mechanisms of intercommunication” are the “genres.”

Successful communication among discourse community members thus necessitates fulfilling discourse community expectations and does not rely on “nativeness.” Even for oral communication, Trippe and Baese-Berk (2019) advise that “...all learners of Aviation English, regardless of their native language background, will benefit from dedicated exposure to the prosody of this register of English” (p. 42). While acknowledging that native speakers will probably be able to learn with practice, they urge training to reduce “the risk of lack of language proficiency contributing to an aviation accident. ... regulators cannot assume that native speaker English fluency entails Aviation English fluency.” Specialized language, both written and oral, requires specialized training for efficient acquisition.

A Socio-Cognitive Perspective Supports Genre Teaching

The concept of teaching the genres used by the communities that a student hopes to enter finds support from many sources. Paulo Freire, a Brazilian educator and philosopher who advocated critical pedagogy, is well known for his book *Pedagogy of the Oppressed*. In a filmed interview, Freire (1997) talks of the “dominant syntax” as follows: “The more the oppressed, the poor people, grasp the dominant syntax, the more they can articulate their voices and their speech in the struggle against injustice...It’s impossible to think of language without thinking of ideology and power.” Freire recognizes that teachers need to teach the “cultivated” pattern to empower their students with the ability to send out effective messages.

The proper use of genres also enables participation in the construction of knowledge. Canagarajah (2002) refers to this as participating in a *language game*: “It is the linguistic activity of the members in debating, revising, and legitimizing the ‘paradigms’ that make sense to them that constitute knowledge” (p. 30). In other words, the community decides on what is accepted and, to become a member, one must use its accepted genres. Gross (1990), in *The Rhetoric of Science*, states that, “The truths of science...are achievements of argument... Facts are by nature linguistic—no language, no facts” (p. 103). Myers (1990) recognizes this knowledge construction process by stating “I argue...that writing produces biology” (p. xii). Thus, knowing the genres for a target discourse community is essential for professional communication.

Genres Can Be Deconstructed For Efficient Learning

Fortunately, genres, because they are repeatedly used, have assumed patterns which can be deconstructed to facilitate learning. Swales (1990) points out that a discourse community must have certain types of texts, or *genres*. To better grasp the concept of a genre, let us turn to Miller (1984): “A rhetorically sound definition of genre must be centered not on the substance or the form of discourse

but on the action it is used to accomplish” (p. 151). She states that the impact of a genre, or its action, on the community is its most important feature. Thus, for a researcher, publishing a research article in a reputable journal would have the most impact. From the viewpoint of teaching ESP, the other two components of *substance* and *form* are crucial features.

Recognizing the difference between the substance and form of a genre text is crucial for an ESP practitioner. This means that to teach a class of medical researchers, the ESP practitioner does not have to be an expert in medical science. What the ESP practitioner should focus on is the form, or the genre features needed to effectively present the *substance*, or knowledge of the field. The responsibility of deciding what information should be presented lies with the medical researcher. The job of the ESP practitioner is to know what language features are needed to properly package that information.

STEAM And Narratives Are Needed For Post-Normal Science

As explained above, ESP received its initial impetus from developments in science and engineering. For most of the 20th century, much emphasis was placed on STEM (science, technology, engineering, and math) education, but now there are calls for STEAM (science, technology, engineering, arts, and math). Gunn (2017) explains why: “This sequestration of knowledge into categories that don’t connect is ultimately detrimental to our students because in the real world, all of it blends together” (para. 10). In other words, a scientist who makes an important discovery must be able to communicate this effectively to gain funding for the work and to collaborate with others to develop it. “This multi-skilled individual is a representation of a student who understands how academic subjects are meant to be a genuine symphony and not a collection of discordant solos” (para. 10).

Scientists must now be able to describe and explain their work to those outside of their exclusive research communities. Dahlstrom (2014) points to the need to build trust in society, to ensure that the facts do not get mixed with fake news and opinions in social media, and to help people base their decision-making on accurate information. Stanchak (2016), in a report on the “Top 10

Trends Driving Science,” considers that “communication is at the heart of many of the biggest challenges facing scientists today” (para. 3). It is their expert testimony that can affect laws and regulations.

The science of today is different from the classical science that many of us encountered in our schooling. Kuhn (1962), in *The Structure of Scientific Revolutions*, talked about how “normal” science, which is based on rules, is replaced when a paradigm shift occurs to change the rules themselves. For example, the Copernican revolution caused such a shift, after which there was “new normal” science. However, Ravetz and Funtowicz (1999) claimed that we are in an age of “post-normal” science where we are confronted with complex issues for which there is no conclusive scientific evidence. A *Nature* editorial (2016) warns that “Urgent science touches on issues that rank high on the social agenda. Theorists have classified fields such as climatology and global-change research as post-normal science, in which socio-economic stakes are high and decisions are pressing” (p. 7). To resolve such issues, we need to harness the knowledge and wisdom of “extended peer communities” (Ravetz & Funtowicz, 1999, p. 642), which includes not only experts but the lay public.

This leads to the question of how to reach nonexpert audiences. One answer lies in “narratives.” Dahlstrom (2014), in the *Proceedings of the National Academy of Sciences*, writes that “Although storytelling often has negative connotations within science, narrative formats of communication should not be disregarded when communicating science to nonexpert audiences” (p. 13614). He contrasts logical-scientific communication with narrative communication, noting that the former follows deductive reasoning with the aim to provide abstract truths to generalize and predict. Narrative communication, on the other hand, follows inductive reasoning from a specific case and has been suggested to be the default mode of human thought.

Science News Podcasts Offer Narratives Of Science

One way to learn how to talk to a nonexpert audience is by explaining your research as though it were a news broadcast. For example, 60-Second Science by

Scientific American (<https://www.scientificamerican.com/podcast/60-second-science/>) presents examples of short (one- to three-minute) news items describing cutting-edge science from the specialist journals in a very easy-to-understand radio-program-like format with audio and transcript. A recent podcast is entitled “Artificial intelligence learns to talk back to bigots” (Intagliata, 2019). Analysis of such podcast texts reveals that they usually have an eye-catching title, a hook at the beginning to catch the attention of the audience, an explanation of who is doing this research and where it was published. Understanding the language features of such texts can help a researcher prepare a lay explanation of his or her own work.

Conclusion

ESP began in an effort to find effective ways to teach nonnative English speakers how to participate in global discourse communities but is now ready to transcend this boundary to help even native English speakers with professional communication. Another boundary to transcend is that of the specialist discourse community. Scientists must be ready to address an extended peer community that includes the lay public in order to help resolve the post-normal science issues that confront us today.

Notes

1. This paper is based on a plenary talk given at the 2019 JALT CUE & BizCom ESP Symposium held at Uchida Yoko Osaka on Sept. 20, 2019.

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