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The American University in Cairo  
School of Humanities and Social Sciences

**Multimodal Writing of University Students: The Case of Academic Posters**

A Thesis Submitted to  
The Department of Applied Linguistics

In Partial Fulfillment of the Requirements for  
the Degree of Master of Arts in Teaching English to Speakers of Other Languages

by

**Noha Ibrahim Fouad**

Under the supervision of

**Dr. Atta Gebril**

May 2021

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## **Dedication**

To my mom, Iman Ibrahim

Your unrelenting love and ongoing support is the secret behind any strength or perseverance I may have. You are my role model whom I always feel very far to imitate.

To my dad, Ibrahim Fouad

You strongly believe in my abilities and are always proud of me. I hope I have satisfied part of your ambitions and great expectations about me.

## Abstract

After having been marginalized for a long time as a second-class genre or “the poor country cousin of papers” (Swales & Feak, 2000), academic posters have recently received remarkable attention as a special multimodal genre that is indispensable for the membership of the academic community. In line with the currently growing interest in multimodal writing, the present study seeks to contribute to the limited body of knowledge on academic posters in two ways: first by investigating the textual and visual communicative strategies employed by novice multimodal writers to facilitate the comprehension of their multimodal texts and guide readers through their discourse and second by exploring the perceptions of those young multimodal writers towards that special genre. To accomplish the first objective, a corpus of 100 academic posters gathered from freshmen university students enrolled in a second language research writing course was compiled and analyzed textually and visually drawing mainly on the framework of D’Angelo (2016a) that distinguishes between interactive and interactional resources. To fulfill the second objective, a questionnaire was filled out by 66 students, and four interviews were carried out. Both quantitative and qualitative methods were used in the analysis. Descriptive statistics was employed in the multimodal analysis of the posters as well as the analysis of the questionnaire responses, and a qualitative thematic analysis was conducted to interpret the responses of the interviewees. The quantitative textual and visual analysis revealed a clear dominance of the interactive resources and, to some extent, a lack of making the best use of all the available visual resources. The analysis of the self-reported data unveiled that young multimodal writers hold quite positive perceptions towards the academic poster as a multimodal genre. Further, they tended to decode the interrelation between textual and visual resources as an illustrative or code mixing relationship where both text and visuals complement each other to communicate the

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intended meaning. The study has pedagogical implications relevant to introducing novice multimodal writers to the available semiotic resources.

*Keywords:* multimodality, multimodal writing, multimodal genre, multimodal analysis, academic posters, second language writing, genre analysis

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## List of Acronyms and Abbreviations

ESP	English for specific purposes
FYC	First-year composition
IMRAD	Introduction, methods, results, and discussion
IRB	Institutional Review Board
JSLW	Journal of Second Language Writing
L1	First language
L2	Second language
M	Mean
NR	New Rhetoric
RHET	Rhetoric
SD	Standard deviation
SFL	Systemic Functional Linguistics
TESOL	Teaching English to Speakers of Other Languages
ZPD	Zone of proximal development

# Chapter 1: Introduction

## 1.1 Introduction

Multimodality, basically defined by Kress (2010, p. 144) as the “representation in many modes”, has notably drawn the attention of many linguists in recent years. Strikingly, it is not solely linguistics which is showing a growing interest in multimodality, but other disciplines, typically marked by their diverse nature, such as musicology, sociology, and anthropology are also increasingly considering multimodality when looking into multimodal texts or media-related products (D’Angelo, 2016a). Second language writing is not in isolation from the current trend. *The Journal of Second Language Writing* (JSLW), a leading publication in L2 writing studies, dedicated its Special Issue of 2020 to “Multimodal Composition in Multilingual Learning and Teaching Contexts”. In that special issue, the contributors tapped into crucial discussions of a special interest to the L2 writing community such as expanding the linguistic and non-linguistic repertoire side by side, exploring both process and product in multimodal tasks, and assessing multimodal composing (Yi et al., 2020). The initiative was even taken earlier in 2015 by *TESOL Quarterly* when it had also released its special issue “Multimodality: Out from the Margins of English Language Teaching” (Early et al., 2015). In line with the remarkably growing interest in multimodal composition, the present study was conducted with the aim of gaining an in-depth insight into multimodal writing of first-year composition students. Being one of the initial academic genres that novice university and young researchers are usually required to master (D’Angelo, 2018) and due to its significant role in transferring knowledge among the academic community, the academic poster has been selected in particular to be the focus of the present

study. Though it may appear simple in its creation, the academic poster may involve some challenges that may render the task daunting (D'Angelo, 2018). In order to create an effective academic poster, the writer has to consider both its textual and visual modes and make the best use of the available resources, albeit in light of what is allowed by the institution. As noted by Briscoe, "It takes intelligence, even brilliance, to condense and focus information into a clear, simple presentation that will be read and remembered. Ignorance and arrogance are shown in a crowded, complicated, hard-to-read poster" (Briscoe, 1996, p. 136). In approaching the poster genre, the present study had a twofold objective: carrying out a multimodal analysis of academic posters, especially those produced by first-year university students, and exploring the perceptions of those novice multimodal writers towards that multimodal genre.

## **1.2 Review of the Literature**

The following two sections are aimed at providing an overview of the two basic concepts guiding the present study: multimodality and L2 writing (1.2.1) and academic posters as a multimodal genre (1.2.2). Section 1.2.1 taps into multimodality and its relationship to L2 writing by first defining multimodality and multimodal texts/ensembles, arguing that multimodal writing is not a novelty, highlighting the role of multimodal writing in education and the need to help students make sense of and produce multimodal ensembles, and finally, shedding light on the main strands of research into multimodality. Section 1.2.2 introduces the main focus of the study, academic posters as a multimodal genre. In this section, the academic poster is briefly defined, throwing light on its significant role in disseminating knowledge across the academic community. An overview is then given on the empirical research conducted on academic posters reaching the research gap that the present study sought to fill.



### ***1.2.1 Multimodality and L2 Writing***

Multimodality is to use, along with the written text, any other mode (e.g., images, sounds, videos, hyperlinks, etc.) to communicate meaning. Multimodal texts, also known as multimodal ensembles, can accordingly be defined as “texts made up of elements of modes which are based on different logics.” (Kress, 2003, p. 35). Those mixed logics, Kress maintains, pose new questions, not only in relation to reading, but also as for writing and its connection to design. And since multimodality is the utilization of a variety of modes to convey meaning, it can confidently be claimed that multimodality has always been there (D’Angelo, 2016a; De Silva Joyce & Feez, 2018; Serafini, 2013). The hieroglyphs intertwined with images on the walls of the ancient Egyptian temples, the sketches illustrating the writings of many renaissance scholars, such as Leonardo da Vinci, and even many ancient writing systems, such as the Sumerian, the Chinese, or the Mayan, reflect a high degree of multimodality (Matthiessen, 2007; Serafini, 2013). Obviously, technology has continued to inform multimodality until the world of today has become replete with words married to images everywhere (e.g., Magazines, pictorial books, text messages, websites, billboard advertisements, documentary films, graphic novels, comics, emoji) are just a few (Serafini, 2013).

The language classroom is not divorced from the world outside. L2 writers, on all levels, have long read and written a variety of multimodal texts (Yi et al., 2020). Nonetheless, with that rapidly evolving technology and with the availability of low-cost multimedia-authoring tools, a shift has occurred from institutional or teacher production of multimodal resources to student authorship of their own multimodal documents (academic posters, PowerPoint presentations, documentaries, etc.) (Ware et al., 2016). L2 writers are now required to make sense of, design,

and interact with a wide range of multimodal tasks. As explicitly noted by Yi et al., “Multimodal composing is not an option anymore” (2020, p. 2).

Despite the fact that communication has mostly been multimodal, both inside and outside the classroom, linguists have long been entrapped by their focus on language, in terms of the print-based text (O’Halloran, 2004; Serafini, 2013; Yi et al., 2020). Yet the situation has been changing now as more research is being contributed to multimodality.

### ***1.2.2 Research into Multimodality***

Interest in exploring and researching multimodality has grown exponentially in recent years as researchers offered different lenses into that area: introducing and experimenting with frameworks for multimodal analysis, investigating both students’ and teachers’ perceptions towards those hybrid forms, and questioning how to assess multimodal genres. In the following lines, some of those attempts will be discussed.

Developing frameworks capable of analyzing the hybrid forms of multimodal genres was apparently at the top of the agenda of many researchers (e.g., Delin et al., 2002; Bateman, 2008; D’Angelo, 2010, 2016a; Maci, 2016; Serafini, 2013; Norris, 2019). Bateman (2008), drawing on an initial work by Waller (1987, for instance, introduced the GeM model to render analysis of various visual and verbal modes operating at a multimodal genre: language, layout, typography and image. The primary layers of analysis of the GeM framework are content structure, genre structure, rhetorical structure, linguistic structure, layout structure, and navigation structure (Bateman, 2008). Nevertheless, a couple of notes should be made in this regard. First, those frameworks draw on different theories. Second, they are intended for different multimodal genres. While some frameworks tend to be more comprehensive, covering a host of multimodal

genres, other frameworks were tailored for the analysis of specific multimodal genres, such as D'Angelo's (2010, 2016a) and Maci (2016) for analyzing academic posters in particular and Norris (2019), which is more concerned with the Multimodal Inter (action) Analysis of video projects.

How students and teachers perceive multimodal genres is another important line of research into multimodality. Some researchers sought to tap into how learners perceive multimodal ensembles as compared to traditional essay writing (Beard, 2012; Kim & Belcher, 2020); others went to explore students' and teachers' perceptions towards the factors that may make multimodal writing tasks motivating for EFL learners) (Jiang & Luk, 2016). See section 2.4.3.2 for more elaboration on the body of knowledge of perceptions towards multimodal genres.

Although it has not adequately been addressed yet, assessing multimodal writing, described by Yi et al. (2020) as "one of the most challenging and urgent questions for L2 writing professionals", is another essential strand of research that is hard to be ignored while discussing research into multimodality and L2 writing. Developing effective assessment tools of multimodal writing entails answering the two big, simple questions of what to assess and when to assess (Yi et al. 2020). In terms of what to assess, language proficiency, meta language for multimodal writing, multimodal orchestration, content area learning, and disciplinary versus creative expressions through and/or for multimodal composing are foci of the studies addressed that question in the special issue of JSLW (Yi, et al. 2020). Pertaining to when to assess, the studies by Collier and Kendrick (2016) and Hafner and Ho (2020) promote a process-based approach in assessing multimodal ensembles where multiple assessments are to be done throughout the writing process (Yi et al. 2020). Other researchers (e.g., Vojak et al. 2011) questioned the efficacy of the newly developed Automated Writing Evaluation (AWE) tools in dealing with

those multimodal ensembles. The findings of this relatively old study are very interesting. Although the developers of most of those tools (e.g., Criterion, Mark IT, MY Access! MyCompLab,) seem quite aware of the various modes of meaning making by providing, for example, illustrative videos and offering students visual feedback (charts and graphs) on their writing, yet, only one program, Choices 2.0, that allowed students to add images and videos to their writing (Vojak, et al. 2011). In fact, assessing multimodal writing is a promising area that still calls for researchers to fill the void. For further details, see Yi et al. (2017) and Tan et al, (2020) as they seemingly exerted a commendable effort in exploring the current state of the art of assessing multimodal writing.

### ***1.2.3 Academic Posters as a Multimodal Genre***

An academic poster is a multimodal genre where textual and visual elements are interwoven together to concisely communicate the content of a research paper. Its primary objective is to inform and persuade (D'Angelo, 2010, 2011). It is an effective tool of disseminating knowledge across specific academic communities. Through those poster sessions, researchers, especially younger ones, are provided with an invaluable opportunity to showcase their work, obtain feedback on their complete, or more interestingly, ongoing research, engage in dialogue with their audience, and, consequently, establish academic networks (D'Angelo, 2011, 2012; Rowe, 2017). Despite its pivotal role in disseminating knowledge across academic communities and facilitating dialogue among researchers, the poster genre has received little attention (D'Angelo, 2010, 2011, 2012; Rowe, 2017). According to D'Angelo (2010), the main reason beyond that marginalization may be attributed to Swales' concept of genre hierarchy. Swales, the doyen of genre analysis studies, believes that not all genres maintain equal value and that the value of each genre is likely to vary across various academic communities (Swales, 2013). In the same vein,

Hyland (2007) almost echoes the same belief suggesting that different disciplines weigh genres, and therefore, writing tasks differently. Drawing on those views, D'Angelo (2010, 2011) elaborates that while PowerPoint conference presentations have become the norm now almost in all disciplines, it is in hard sciences, in particular, that posters are highly utilized and most valued.

Despite that negligence which was, unfortunately, maintained for a while of academic posters, researchers have recently started to tap into that interesting area by analyzing the textual and visual features, developing ad hoc frameworks, and investigating the perceptions of both teachers and students on that special multimodal genre. Aside from the great deal of prescriptive literature dedicated to setting out guidelines for creating an effective academic poster (e.g., Christenbery & Latham, 2013; Connelly, 2018; Moyo, 2019), academic posters have also been researched in relation to many areas such as using posters in different educational settings (e.g., Berry & Houston, 1995; Hay & Miller, 1992), using posters in the EFL classroom (e.g., Ahmad, 2019; Çetin & Flamand, 2013; Sener & Bostan, 2017), posters as an assessment tool (e.g., Ross & Van Wyk, 2019; Stegemann & Sutton-Brady, 2009). The general findings of that line of research indicate that although posters may be a bit challenging genre, especially in the beginning, they were found to be an enjoyable social activity that could enhance the communication of students' work and provide a casual opportunity for relevant discussions (Berry & Houston, 1995; Hey & Miller, 1992). In EFL classrooms, posters also proved to be beneficial, especially in vocabulary learning, and helped students to practice self-indirect inferential learning (Ahmad, 2019; Çetin & Flamand, 2013; Sener & Bostan, 2017). As an alternative non-traditional assessment tool, posters were effective especially with university and graduate levels. Poster sessions were also useful in

promoting creativity and providing an interactive learning environment as well as a relaxed and comfortable setting for assessment (Ross& Van Wyk, 2019; Stegemann& Sutton-Brady, 2009).

From a linguistic perspective, the research on academic posters is still in its infancy (D'Angelo, 2010, 2011, 2016a, 2016b; Maci, 2016). A careful look at that literature shows that academic discipline is the variable that has received the most attention. Researchers have been interested in tracing textual and visual features of academic posters either within a specific discipline (e.g., Maci, 2011, 2016) as shown in her special interest in medical posters in particular or investigating differences across disciplines (e.g., D'Angelo, 2011, 2016a, 2018; Li, 2014).

The general findings of that cross-disciplinary research have unveiled noticeable differences, especially in terms of word count, layout, and textual metadiscoursal resources. Geographers, for instance, were found to be the wordiest among poster creators while linguists were shown to be the most economical. Textual metadiscoursal resources as well were not distributed evenly across the researched disciplines (D'Angelo, 2016a, 2018; Li, 2014). The high frequency of interactive metadiscoursal resources (e.g., transition markers, framing markers, endophoric markers) showed biologists to be the most concerned with guiding their readers and making the content highly accessible. As for the visual elements, given that a poster is primarily regarded as a visual medium, all the sub-corpora researched made a very good use of visual interactive resources to make the content of a poster comprehensible to the public and manage the flow of information (D'Angelo, 2016a, 2018). No significant differences could be detected across the investigated disciplines; the cross-discipline discrepancy mainly narrows down to the image usage, especially functions and types. The findings of that cross-disciplinary research have important pedagogical implications. By learning about the conventions of each discipline, novice researchers, according to D'Angelo (2016a, 2018), should be informed about, and therefore,

follow those conventions and norms to meet the expectations of the disciplinary community they belong to- a basic principle of the genre approach.

It should be noted in this respect that the work of D'Angelo (2010, 2011, 2016a, 2018) in particular exerted a great influence on poster studies, not only in terms of conducting numerous studies that guided research on posters, but more importantly, in introducing a comprehensive framework specifically designed for poster analysis that opened the door for in-depth examination of that multimodal genre. D'Angelo's framework is based on two dimensions: a textual analysis drawing on Hyland metadiscourse model of interactive and interactional resources (Hyland, 2005, 2018) and a visual analysis adapted from Kress and van Leeuwen's visual grammar paradigm (1996, 2006). Accordingly, the textual analysis is concerned with investigating interactive metadiscoursal resources (transitions, frame markers, endophoric markers, evidentials, code glosses) and interactional resources (hedges, boosters, attitude markers, engagement markers, self-mentions). The visual analysis, on the other hand, looks into interactive metadiscoursal resources (information value, framing, connective elements, graphic elements, and fonts). In light of the aforementioned studies, it is obvious that the elements of that framework have been studied only in relation to the variable of discipline. Moreover, it should be noted that the participants of those studies are mostly experienced researchers or PhD students. The present study sought to investigate the influence of another variable, namely the proficiency level, on the textual and visual elements of academic posters, a new variable which, to the best of the researcher's knowledge, has not been explored yet. Worthy of note is that proficiency in this respect is not language-based, but multimodal proficiency, the ability of the writer to make the best use of the available semiotic resources to make meaning.

Researchers have also been interested in exploring the perceptions towards multimodal genres in general, both from teachers' perspective (e.g., Ajayi, 2010); Ryu & Boggs, 2016) and from students' perspective (e.g., Beard, 2012); Kim & Belcher, 2020). As a multimodal genre, academic posters have not fallen short of that inquiry (MacIntosh-Murray, 2007; Rowe & Ilic, 2009; Sarobol & Lertkultanon 2019); though the research into perceptions is still very limited calling for more investigation. As a classroom activity, students perceived poster presentations as useful in developing their collaborative and creating skills and helpful in developing more confidence in language speaking. They, though, expressed their negative attitude that poster creation may be a time-consuming process and mentioned some chaos during the presentation (Sarobol & Lertkultanon 2019). As for conference delegates, they expressed positive attitudes towards posters as a good medium for knowledge transfer and a valid tool for academic publication. Visual appeal was also reported to be more important than content (Rowe & Ilic, 2009). Finally, it is worth mentioning that even the scarce literature on perceptions has targeted posters as part of the poster presentation event, where the poster writer gives an oral presentation about the content of his/her poster, not posters as an independent self-explanatory genre, where the poster supposedly undertakes the whole role of communicating the content. Therefore, examining students' perceptions is expected to make a contribution to the relevant literature. further, investigating the perceptions of novice first-year students in particular is expected to have important pedagogical implications as it will be explained in section 1.4 about the rationale of the study.

### **1.3 Statement of the Problem**

Academic posters are a special multimodal genre that fulfill an important function of encapsulating the content of a research paper and presenting it in an illustrative, less rigid design.



No conference today is void of one or more poster sessions where researchers exchange information, enter into dialogue on their research, and establish networks- an important aspect of academic life. Yet, the research on academic posters, especially from a linguistic perspective, is still in its infancy. In light of the aforementioned overview of the literature, the only variable that has received the most attention is discipline; researchers have apparently been interested to investigate how poster creators across different disciplines introduce their research. Other variables, such as proficiency level, gender, identity, among others, need to be addressed. In terms of proficiency level, novice multimodal writers in particular need to be supported. By having a quick look at a random sample of their posters, one is likely to find out that compared to their graduate peers, novice students' posters tend to be simpler and less professional, reflecting some problems, especially in terms of empty spacing, picture resizing, color choices or contrasting. Last but not least, it is not only the literature on poster analysis that is still limited, but the perceptions of that genre as well have not been adequately studied.

#### **1.4 Rationale for the Study**

The present study sought to realize three main objectives. First, continuing the line of research on academic posters is likely to inform the research on multimodality in general and the limited literature on posters in particular. Second, the researcher sought to examine the multimodal writing of first-year composition students in particular. Almost all university students and novice researchers, upon embarking on academia, are expected to be exposed, in a way or another to the multimodal genre of academic posters, either as viewers or as producers (D'Angelo, 2016b). Third, to have a broader perspective, the study attempted an investigation of the perceptions and attitudes of those novice multimodal writers. Hence, examining both the product and the perceptions of novice multimodal writers, is likely to ease their entrance into the academic

community. It is also an interesting opportunity to identify their strengths and weaknesses regarding that specific genre, learn about their main challenges, and identify what type of scaffolding they may need, and communicate such findings to the concerned stakeholders: novice students and researchers, instructors, and program directors. Therefore, with the aim of extending the current line of research on multimodal L2 writing and seeking to provide an illuminating insight into not only the final multimodal product of novice writers, but their perceptions as well towards that special genre, the present empirical study was carried out.

### **1.5 Research Questions**

The research questions guiding this study can be stated as follows:

1. What are the common textual and visual metadiscoursal resources characterizing academic posters created by first-year composition students?
2. How do first year composition students perceive academic posters as a multimodal genre?

### **1.6 Delimitations**

The present study aimed at conducting a multimodal genre analysis (textual and visual) of self-explanatory academic posters created by first-year composition students. With the aim of collecting different types of evidence, the multimodal analysis was supplemented by gathering self-reported data by means of a questionnaire and interviews to investigate the participants' perceptions of that special multimodal genre. Hence, the spoken component, present in some poster presentation sessions by giving an oral presentation about the content of the poster, and comparing those novice multimodal writers to writers from other proficiency levels are beyond the scope of that study. Further, no other variables were examined for the purpose of the present study.

## **1.7 Theoretical Definitions**

### ***1.7.1 Academic Poster***

An academic poster is primarily a visual medium used to display the main points of a topic often in a structured format that is similar to the typical structure of research articles, namely, introduction, methods, results, and discussion (IMRAD) (Rowe, 2017). Although it follows the conventional structure of research articles, the academic poster tends to be less rigid, allowing for “creativity and individuality” (D’Angelo, 2010).

### ***1.7.2 Metadiscourse***

Since the textual analysis used in the present study draws mainly on Hyland’s work on metadiscourse, his definition is adopted for the purpose of the present study. Thus, metadiscourse refers to “aspects of a text which explicitly organize a discourse or the writer's stance towards either its content or the reader” (Hyland, 2018, P. 16). Hyland further identifies three key principles distinguishing metadiscourse:

1. Metadiscourse is distinct from propositional aspects of discourse
2. Metadiscourse refers to aspects of the text that embody writer-reader interactions
3. Metadiscourse refers only to relations which are internal to the discourse

### ***1.7.3 Textual Interactive Metadiscoursal Resources***

Textual interactive metadiscoursal resources, as defined by Hyland (2005, 2018) and adopted later by D’Angelo (2016a), are those textual devices employed by writers to signal the arrangement of their texts based on their appreciation of their target readers’ likely background and understanding. They enhance the friendly aspect of the text and help maintain the flow of information. In a nutshell, textual interactive metadiscoursal resources are concerned with how

writers guide their readers throughout the text based on their familiarity or expectations of their potential needs and reactions. Interactive metadiscoursal resources are realized through five broad categories: transition markers, frame markers, endophoric markers, evidentials, and code glosses.

#### ***1.7.4 Textual Interactional Metadiscoursal Resources***

As defined by Hyland (2005, 2018) and adopted by D'Angelo (2016a), textual interactional metadiscoursal resources refer to those devices used by writers to explicitly intervene at some points to comment on or evaluate specific parts of the text. They do not only overtly express authors' point of view, but their acknowledgement, anticipation, challenge, or suppression of others' as well. They are also subdivided into five categories: hedges, boosters, attitude markers, self-mentions, and engagement markers. (Hyland 2005, 2018).

#### ***1.7.5 Visual Interactive Metadiscoursal Resources***

Visual interactive metadiscoursal resources refer to those devices that help in organizing the flow of information and facilitating the comprehension of the multimodal text. They are realized through information value, framing, connective elements, graphic elements and fonts (D'Angelo, 2016a).

#### ***1.7.6 Multimodal Genre***

A multimodal genre is a genre that encompasses more than a single mode (e.g., written words, images, sounds, etc.) (D'Angelo, 2016a).

### ***1.7.7 Mode***

Adopting a social semiotic perspective, a mode indicates “both linguistic and non-linguistic meaning-making resources that a social group has made and used for cultural practices of communication” (Yi et al., 2020, P. 2).

### ***1.7.8 Multimodal Ensemble***

A multimodal ensemble is “a text composed of more than one mode” (Serafini, 2013, p. 12). It is, in a way or another, another term for a multimodal text, but as Serafini (2013) maintains, the term text may suggest a predominantly print-based artifact.

## **1.8 Operational Definitions**

### ***1.8.1 Academic Poster***

For the purpose of the present study, an academic poster refers to that visual medium used to display the main points of a topic often in a structured format that is similar to the typical structure of research articles, namely, introduction, method, results, and discussion (IMRAD) as produced by first-year composition students enrolled in the RHET 1020 course in an English medium private university.

### ***1.8.2 Textual Interactive Metadiscoursal Resources***

Textual interactive metadiscoursal resources are the textual devices employed by writers to signal the arrangement of a text based on their appreciation of their target readers’ likely background and understanding, namely transition markers, frame markers, endophoric markers, evidentials, and code glosses as used in academic posters produced by first-year composition students in the RHET 1020 course.

### ***1.8.3 Textual Interactional Metadiscoursal Resources***

Textual interactional metadiscoursal resources are the textual devices used by writers to explicitly intervene at some points to comment on or evaluate specific parts of a text, namely hedges, boosters, attitude markers, self-mentions, and engagement markers as used in academic posters produced by first-year composition students in the RHET 1020 course.

### ***1.8.4 Visual Interactive Metadiscoursal Resources***

Visual interactive metadiscoursal resources refer to the following related systems: information value, framing, connective elements, graphic elements and fonts as used in the academic posters created by first-year composition students in the RHET 1020 course.

### ***1.8.5 First-Year Composition (FYC)***

The term first-year composition, also known as first-year writing or freshman composition/writing, refers to an introductory core curriculum writing course in American colleges and universities that is aimed at enhancing students' academic writing skills and introducing them to the different disciplinary and professional writing practices.

## Chapter 2: Literature Review

### 2.1 Chapter Overview

The purpose of the present study is to investigate multimodal writing of first-year composition students with a special focus on academic posters as a multimodal genre. Accordingly, the aim of this chapter is to lay the theoretical foundation guiding the focus of the present study, academic poster as a multimodal genre. Hence, the chapter is divided into three main sections: genre analysis theory (2.2), multimodality (2.3), and academic posters (2.4). In section 2.2, a background on the notion of genre, its definition and evolution, and the major approaches informed the genre theory are provided. In section 2.3, the concept of multimodality is introduced by first defining what is multimodality and then exploring the approaches to researching multimodality. Finally, in section (2.4), the main focus of the present study, academic posters, is reviewed in detail. In this section, the definition, evolution, and communicative functions of the academic poster are tackled along with examining posters as a multimodal genre and reviewing the empirical research on academic posters.

### 2.2 Genre Analysis

#### *2.2.1 Background on the Notion of Genre*

Since the 1980s, a growing interest has been markedly noticed in the study of genre analysis. In terms of definition, since it has been studied from different perspectives or, as it is discussed in section 2.2.2, evolved in different orientations, genre is not a concept that is easy to define.

Broadly speaking, genre theories are generally concerned with the conventional organization of types of texts, discourse practices and knowledge, and the sequences of development that L2 writers acquire and are expected to follow in their education or professions (Cumming, 2016).

Tracing back the evolvement of genre, one would find out that genre is not a novel concept; it can be dated back to the literary forms thrived in ancient civilizations. Since ancient Greece, rhetoricians distinguished specific genres of drama, epic, and lyric while other literary genres such as the novel, romance, sonnets emerged subsequently (Cumming, 2016). However, it was in the late 20th century, thanks to the work of Swales (1990a, 1990b, 2000, 2013), Miller (1994, Bhatia (1993, 1997, 2004, 2008), Hyland (2004), among others, when a powerful impetus was given to genre studies, not only in terms of theoretical research, but in putting the findings of that research into practice in classrooms and language programs. It is worth mentioning that genre theories appeared first in the studies of English as a first language and were expanded later to the studies of second language writing (Cumming, 2016).

### ***2.2.2 Approaches to Genre Theories***

As noted by numerous scholars (e.g., Hyland (2004), Hyon (1996), Johns (2003))), genre theories have been grounded in three schools, namely Systemic Functional Linguistics (SFL), New Rhetoric (NR), and English for specific purposes (ESP). The SFL originally stemmed in the seminal work of Michael Halliday (1994), the father of SFL and his colleagues in Australia in what has been known as the Sydney School. According to the Hallidayan approach, people use language to express meanings in social contexts, making certain linguistic choices to communicate functions with texts and with each other. Genre, according to that approach, is "a staged, goal oriented social process" (Martin, 1992, p. 505). Hyland (2004) elaborates on Martin's statement explaining that genre is a social process as members of a specific culture mainly communicate to realize it; genre is goal oriented as it has existed mainly to accomplish things; and they are staged or sequenced as meanings are expressed in steps. Hyland (2004) maintains that when a group of texts shares the same purpose, they will usually follow a similar



structure, and therefore, are likely to be classified under the same genre. As mentioned by Cumming (2016) and D'Angelo (2016a), genre-based applications derived from SFL principles have been utilized in teaching English in schools and adult language programs for migrants to Australia since the 1980s and spread then internationally across other areas of the world.

The other two schools (NR and ESP) originated in North America with the former viewing genre as social or situated action and the latter designating genre as professional competence. While originally developed in English L1 writing studies (Cumming, 2016), NR studies were expanded later to include L2 writing. Since it cannot be characterized as an authentic environment where complex negotiations may occur among multiple audiences, the classroom is not addressed by this approach (D'Angelo, 2016a; Hyland, 2004). Unlike the NR approach, first developed in English L1 writing studies and applied later to L2 writing, the ESP approach originally emerged to address the needs of EFL learners, especially academic, technical, and professional writing skills for international students in higher education or work (Cumming, 2016). Despite being distinguished as a distinct approach, the ESP can be viewed as standing between the previous two approaches or drawing on the theoretical frameworks of the other two schools (D'Angelo, 2016a; Hyland, 2004). Unlike New Rhetoricians, the work of the ESP theorists and practitioners is informed, driven, and dedicated, first and foremost, to the classroom.

Despite having been rooted in different ideologies and evolved with different pedagogical foci, the three approaches informing genre analysis cannot be seen as isolated from each other; much overlapping may be detected, though. Both SFL and NR approaches stress the importance of social context. SFL and ESP, on the other hand, share many tenets. Using language for accomplishing a social purpose, for example, is at the heart of both, SFL and ESP approaches.

SFL and ESP also pay much attention to analyzing texts to identify similarities and recurring

lexico-grammatical patterns with the aim of utilizing the findings of that research in teaching, bearing in mind that contrary to SFL, which looks for broad rhetorical patterns, such as narratives, descriptions, arguments, expositions, ESP tends to favor a top-down approach (i.e., it looks into the overall rhetorical structure of texts). Simply put, each of the three approaches “address, but place greater or lesser emphasis on, written texts” (Cumming, 2016, p. 75).

Pedagogical implications for L2 writing, Cumming (2016) maintains, lies at the heart of distinction between the three orientations, with SFL and ESP theorists believing that genres and their relevant linguistic forms should be explicitly taught in language programs while new rhetoricians oppose teaching genres in the classroom as it is, according to them, an inauthentic environment where complex negotiations and real audience are absent (D’Angelo, 2016a).

Last but not least, it is worth mentioning that the last decade marked a significant shift from traditional genre analysis, which taps into the surface characteristics of texts, to what has been known now as critical genre analysis (Bhatia, 2017). In his worthy efforts, Bhatia poses that it may not be adequate to look only into the text, but the context as well should be taken into account in genre analysis, not only the internal but the external as well. He worked on establishing a multidimensional model where discourse is to be analyzed at four distinct, yet overlapping levels: text, genre, professional practice, and professional culture (see Bhatia, 2016 for further explanation). Critical genre analysis is an emerging area of research that still needs to be addressed.

## 2.3 Multimodality

### 2.3.1 Definition of Multimodality

With the excessive use of media, in particular image, a growing interest has been noticed in studying multimodality. Hence, a simple question may be raised about what multimodality is. According to Jewitt (2009), multimodality entails the engagement with the different modes of making meaning, including speech, writing, image, and even gesture (as cited in D'Angelo, 2016a). In their informative book *Introducing Multimodality*, which provides a solid background about multimodality and its different approaches, Jewitt et al. (2016) maintain that in its broad sense, multimodality refers to the variety of resources (e.g., gaze, speech, gesture) that people use for meaning making. And by narrowing down the definition as they adopted in their book, Jewitt et al. suggest that in actual instances of meaning making, such resources are combined together “to form multimodal wholes” (2016, p. 158). In a similar vein, Kress and Van Leeuwen, the founding fathers of multimodality in social semiotics, define multimodality as the use of a multitude of semiotic modes in creating a semiotic product or event, and when combined together, those semiotic modes enhance each other (express the same idea in different ways), perform complementary roles, or operate in a hierarchical order (Kress & Van Leeuwen, 2001, p. 20). In fact, that description of how semiotic modes operate together has become the core idea of research into multimodality. Notably, central to Kress and Van Leeuwen’s definition of multimodality is the concept of mode. Having been grounded in systemic functional linguistics and social semiotics, the term mode has been used to refer to “a socially organized set of semiotic resources for making meaning” (e.g., image, writing, layout, speech, among others) (Jewitt et al., 2016, p. 157). And in order to be regarded as a mode, Jewitt et al. (2016) maintain, it should have a set of semiotic resources and organizing principles that are known to a specific

community as realizing meaning. Multimodality, thus, is simply how semiotic modes orchestrate together to create meaning.

It should be noted that multimodality is not a dichotomy; all texts, in a way or another, realize a degree of multimodality. Both the research article and the poster, for example, are multimodal texts with the poster, as usually dominated by visuals, coming near the high end of multimodality while the research article, mostly dominated by written words, yet not void of some illustrative visuals (e.g., tables, figures), exhibiting a less degree of multimodality. This idea of looking at all texts as multimodal ensembles is typically echoed by Serafini (2013) who suggests envisioning a continuum representing a range of the multimodality of texts from textually dominant texts to visually dominant texts. Simply put, “purely monomodal texts or discourses almost have no existence in reality” (Serafini, 2013, p. 16). Table 1.1 below adapted from Serafini (2013, p. 17) illustrates a range of the multimodality of texts from textually dominant texts to visually dominant texts.

**Table 1.1**

*Multimodality Continuum as Adapted from Serafini (2013, p. 17)*

<b>Textually Dominant</b>	<b>Blended Structures</b>	<b>Visually Dominant</b>
Traditional Novels	Picturebooks	Photography
Essays	Magazines	Painting
Lectures	Webpages	Sculpture
Legal Documents	Graphic Novels	Architecture
Speeches	Newspapers	Wordless Picturebooks

### **2.3.2 Research into Multimodality**

The research into multimodality has been informed by contributions from many disciplines such as linguistics, semiotics, sociology, psychology, education, new literacy studies, media studies, addressing an array of various research questions (D'Angelo, 2016a, Jewitt et al., 2016). Such influences by miscellaneous scholarship have ushered in the evolvement of several approaches to do multimodal analysis. Pirini et al. (2016), for example, identify five approaches, namely multimodal interaction analysis, mediated discourse analysis, systematic functional multimodal discourse analysis, social semiotics, and multimodal conversation analysis as the most prominent to run multimodal data analysis. Jewitt et al. (2016), on the other hand, highlight conversation analysis, systemic functional linguistics, and social semiotics in particular as focal approaches which were grounded in distinct disciplines and were able to inspire further multimodal analysis approaches. And despite having been rooted in distinct disciplines, those approaches do not operate in isolation from each other; they rather share many theoretical orientations. In fact, discussing the tenets of each approach is beyond the scope of this study; however, since the analytical framework that is used in the present study is mainly informed by systemic functional linguistics and social semiotics, those two approaches will be discussed in detail in the two following sections.

#### **2.3.2.1 Systemic Functional Linguistics (SFL)**

Originally influenced by European functionalism, Systemic Functional Linguistics (SFL) was introduced by Michael Halliday in the 1960 in the UK, heavily depending on grammar as its theoretical foundation (Jewitt et al., 2016; Pirini, 2016). Worth mentioning is the fact that recently, SFL procedures have been adopted by O'Toole, van Leeuwen, Martin, O'Halloran, among others, to investigate the so-called multimodal discourse, leading to the evolvement of

what has been known now as Systemic Functional Multimodal Discourse Analysis (SF-MDA). Language, according to the SFL approach, is conceptualized as a semiotic resource or as a systematic structure of signs serving a set of social functions (Jewitt et al., 2016; Pirini, 2016). As noted by Pirini (2016), multimodal approaches drawing on SFL as a theoretical basis apply the same notions about structure and function to other semiotic resources such as layout, framing, color, and so forth. As identified by Jewitt et al. (2016), the main aim of SFL is to look into how language is organized and employed to fulfill a variety of social functions. In their data collection, SFL researchers are primarily concerned with the text (Eggins, 2005; Pirini et al. 2016) which is realized by Systemic functional linguists in newspapers, webpages, advertisements. Systemic functional multimodal discourse analysts, such as O'Halloran and O'Toole, have also expanded the concept of text to encompass gesture, speech, mathematical symbols, buildings, and arts. The typical research questions raised within that approach are primarily related to the nature of text-image relationship. This can be attested, for example, in the study by Unsworth (2007) on the text-image relationship in educational materials. Hence, this typically corresponds with the main objective of the present study which basically questions the textual and visual characteristics of posters created by novice university students and how textual and visual elements interact together in those posters.

### **2.3.2.2 Social Semiotics**

Social Semiotics originated in Australia in the early 1980 through the work of Gunther Kress and Bob Hodge who drew on theoretical orientations mainly from SFL as well as semiotics and social theory (Jewitt et al., 2016; Pirini, 2016). Meaning, according to social semiotics, is based on the notion of the motivated sign (i.e., the relationship between the signifier and the signified is motivated, not arbitrary as suggested by Saussure) (Kress, 2010). As mentioned in section 2.3.1,

central to social semiotics led by Kress and van Leeuwen is the concept of mode. Modes, according to Kress and van Leeuwen, are “semiotic resources which allow the simultaneous realization of discourses and types of (interaction)” (2001, p. 21). A multimodal design, Kress and van Leeuwen (2001) maintain, makes use of those modes/semiotic resources, combining and selecting from the available options they offer according to the needs of the communicative situation. Having mainly been informed by SFL, social semiotics also draws heavily on grammar or takes it as its theoretical basis. This was culminated in the release of Kress and van Leeuwen’s seminal work *Reading Images: The Grammar of Visual Design* (1996, 2006) in which Kress and van Leeuwen conduct social semiotic analysis of images building on the three metafunctions (ideational, interpersonal, and textual) of the Hallidayan theory. They seek to examine how those metafunctions are realized in images. On a related note, the framework used for the purpose of the present study draws basically on that seminal work of Kress and van Leeuwen. Of special note is that both SFL and social semiotic approaches run analysis at the micro level.

## **2.4 Academic Poster as a Multimodal Genre**

### ***2.4.1 Academic Poster Definition, Evolution, and Function***

Academic posters have often been defined as incorporated in poster presentation events where researchers stand by their posters to answer questions posed by interested delegates or enter into informal discussions relevant to their research. A poster session is, therefore, that event organized as part of a conference or a congress basically to display such research posters. In this respect, the definition of the American Heart Association, cited in many relevant works such as MacIntosh-Murray (2007) and D’Angelo (2016a), designates an academic poster as follows: “A poster presentation consists of a visual display of research highlights on a fiberboard background combined with an interpersonal question and answer period” (2015, p. 1). And in order to be

effective, the content of a poster presentation “should be direct, focused, and concise” (American Heart Association, 2015, p. 1). In the same vein, drawing on the work of Kress and Van Leeuwen (2001), D’Angelo (2010) and MacIntosh (2007) also conclude that a poster presentation is a “multimodal communicative genre, with text, graphics, color, speech, and even gesture used to convey meaning”. According to that definition, an academic poster is a hybrid genre that encompasses not only textual and visual elements, but in poster presentations, the spoken component, accompanied by gestures, is an essential part as well. In her book *Academic Posters: A Textual and Visual Metadiscourse Analysis*, exclusively dedicated to multimodal analysis of academic posters, D’Angelo (2016a) adopted the following working definition from The Writing Centre - University of Adelaide (2014) regarding it as valid for all posters. A poster is a visual presentation that showcases scholarly research with the purpose of displaying a piece of work which can easily be viewed and stimulate an exchange of ideas between the presenter and the audience. It is neither a talk, nor is it a paper; hence, it requires distinct techniques in its preparation. Likewise, Rowe (2017), the author of *Academic and Scientific Poster Presentation: A Modern Comprehensive Guide*, broadly defines posters as follows: “An academic/scientific poster is a large (usually printed) work that is posted to display information or findings.” (p. 45). Rowe, in the same reference, offers a more specific and concise definition; hence this is the one that will be adopted for the purpose of the present study. According to this definition, a poster is primarily a visual medium that is used to display the main points of a topic often in a structured format similar to that of a typical research article, namely, introduction, method, results, and discussion (IMRAD) (Rowe, 2017). As evident in this discussion, the focus of that definition is poster as a visual medium encompassing both text and visuals; hence, this is the type of



academic posters that will be investigated in this study, the self-explanatory poster that speaks for itself in the absence of its creator.

Academic posters are not products of today's technology, but it is mostly the age of digital literacy and the widespread use of computers and the internet that has led to the strong presence of that special multimodal genre in academic communities. According to Rowe (2017), the first publicly displayed poster can be traced back to the poster of the Birth and Origin of the Pope by Lucas Cranach in 1545, a deliberately shocking, intelligible visual representation aimed at propagating the Reformation among a largely illiterate public audience. In France in 1866, Jules Chéret, known as the father of the poster, became famous for producing high color lithographic prints that were designed to be visually attractive and communicate information (Rowe, 2017). But due to the closed nature of academic conferences and the lack of documentation, it is hard to precisely identify the exact date of the introduction of the first academic poster; however, it may be dated back to 1946 through a medical poster that is preserved in the Wellcome Library Archives as one of the early examples of that special genre. And in Madrid, in February 1969, the first international poster sessions were held, referred to then as demonstration sessions, where each session took one and half an hour where posters were mounted on a board and stimulated an informal discussion. In the USA, academic posters were documented to have been used in 1970, and poster sessions were a recorded feature of the 1974 Biochemistry/Biophysics Meeting in Minneapolis (Rowe, 2017). Since then, poster sessions have become a major component on the agenda of conferences.

But one may simply ask why the Academic Poster has received that attention or what function it fulfills to be present almost in all academic conferences and congresses. As described by Rowe (2017), poster presentations are the most widely used medium of disseminating information at

today's academic conferences. They may have no rival in this regard except for journal articles (Rowe, 2017). Time limitations, physical restraints of an academic conference in addition to the relatively easier access to conferences, which has become available by means of external funding, have all made the competition more intense to present orally at such academic events. According to Rowe (2017), poster sessions have emerged to fulfill that need by providing an alternative means for presenters to display not only their accomplished work, but their ongoing projects as well where they can interact and engage in dialogue with interested delegates.

D'Angelo (2010, 2011) maintains the same view that poster sessions are an important component of academic events and are regarded as a valid and interesting alternative to paper presentations.

D'Angelo further believes that by facilitating opportunities for informal discussions between presenters and their audience, poster sessions may be a more flexible opportunity for exchanging opinions than formal paper presentations do. However, one should bear in mind that with conference posters in particular, an appealing poster is not supposed to have a large amount of detailed information; a balance should exist between the content of the poster and the output of the presenter. Hence, the primary objective of a conference poster is to arouse interest in a specific topic or invite viewers to enter into discussion (Rowe, 2017). Self-explanatory posters, the focus of this study, are viewed differently. In those posters, the author is not there to clarify the content of his/her poster, but it is the poster which is entirely responsible for communicating the whole message.

#### ***2.4.2 Academic Poster as a Genre/Multimodal Genre***

Upon reviewing the notion of genre as recognized and defined by the three aforementioned approaches (SFL, NR, and ESP) (section 2.2.2), it can be concluded with much confidence that the academic poster establishes itself as a unique genre that has its own distinctive

characteristics. First, an academic poster has a social purpose which is, first and foremost, to disseminate knowledge and information on a specific research project, completed or ongoing. In this respect, an academic poster may situate itself more towards the concept of genre as recognized by the ESP perspective. ESP theorists usually view genre as a set of communicative events conventionalized in a specific way aimed at a particular audience. Hyland elaborates on that point explaining that “Genres are the purposive social actions routinely used and recognized by community members to achieve a particular purpose, written for a particular audience and employed in a particular context.” (2004, p. 45). In that sense, the academic poster is not intended to realize general rhetorical goals in a specific culture, such as narrative, argument, exposition, or description (the SFL perspective), but it is rather to communicate the social purpose or the needs of a particular academic or professional community. Hyland (2004, p. 45) maintains, “Genres are therefore the property of the communities that use them rather than the wider culture.”. The poster genre is often aimed at a specific group of the academic wider community (e.g., engineers, physicians, linguists, etc.). Second, in order to achieve that social purpose and best communicate it to the target community members, academic posters often follow a certain schematic rhetorical structure, one of the basic principles of both the SFL and the ESP approaches. Almost all academic posters adopt the IMRAD format (introduction, method, results, and discussion), a tradition which has become conventionalized in the academic community. And in addition to the overall rhetorical structure adopted in the majority of posters, the language itself, as it will be discussed later in detail, is recommended to be economical. It should be like an illustrated abstract. Third, although academic posters usually follow a condensed IMRAD conventional rhetorical structure, yet, compared to other academic genres, they exhibit a high degree of flexibility: “When we work with posters, we work with a genre that

does not have a rigid structure as, for example, the research article” (D’Angelo, 2016a, p. 44-45). In their study on the perceptions of academic poster presentations, Rowe and Ilic (2009) also concluded that since they draw heavily on visual appeal and direct author-viewer interaction, academic posters require greater flexibility in their design to effectively promote knowledge. Such flexibility can be noticed in both textual and visual components. It is true that poster creators are recommended, for instance, to use succinct language and condense their message to reduce the reading load, they may achieve that goal in whatever style they want, bulleted listed points, full short sentences, etc. Visually, poster creators have also a plethora of interactive resources to choose from to illustrate their research. That feature of flexibility, characterizing academic posters, typically echoes the notion of the dynamic quality of genres and the way they evolve and exhibit variation, one of the basic principles of the New Rhetoricians’ perspective of genre (Hyland, 2004). As described by Schryer (1993, p. 208), genres are “stabilized-for-now” forms of action that are potential to change and subject to negotiation (Hyland, 2004). In a nutshell, being a form of writing expressed within a certain schematic rhetorical structure, though exhibiting a high degree of flexibility, and aimed at communicating a social purpose, often to disseminate the findings of a specific research project to the members of a particular segment of the academic community, the academic poster has managed to establish itself as a distinct independent genre.

The academic poster is one of the most obvious manifestations of multimodal writing where visual and textual elements are combined together to communicate the content of a specific research study. In poster presentations, where posters are accompanied by their presenters, a verbal component and gestures are also present as additional modes of communication. But since the present study is interested in investigating the self-explanatory poster, which stands on its

own to communicate its content without an oral presentation given by its author, only text and visuals are the focus of the present study whereas the spoken component is beyond its scope. Even the text and visuals of the academic poster have their own distinctive characteristics. As mentioned above, a poster is typically designed to communicate the content of a research paper; thus, it, to some extent, shares the same function fulfilled by a research article. Nevertheless, the language of a poster is completely different. What can be explained, elaborated, and argued over several pages in a research article, should be condensed in a few words and limited amount of space when inserted in a poster (D'Angelo, 2016a). Economical language is a recurrent recommendation in all the relevant prescriptive literature and tips on creating effective posters. Poster text needs to be as concise and condensed as possible, mentioning only the key points (Matthews, 1990). MacIntosh-Murray (2007) stresses the same idea maintaining that a poster is not the pasting of a scholarly article. Poster creators are also advised to consider the length of their sentences in a poster and preferably use short and medium-length sentences. Visually, posters creators tend to make use of a wide variety of visual elements (e.g., pictures, tables, charts, colors) with the objective of illustrating their content. In fact, visuals have priority in that genre (D'Angelo, 2010, 2016a, MacIntosh-Murray, 2007, Rowe, 2017, Rowe & Ilic, 2009).

### ***2.4.3 Empirical Research on Academic Posters***

Having a closer look at the literature on posters, it would be obvious that academic posters have been studied from different perspectives. A great deal of the literature is prescriptive, setting out guidelines and suggesting tips and techniques for creating an effective poster presentation. As noted by D'Angelo (2016b) and (Rowe, 2017), credit may be given to Matthews' pioneering work (1990) for taking the initiative by suggesting a set of guidelines for creating an effective poster. Matthews' work was so influential that a plethora of guidelines literature have succeeded

(e.g., Christenbery & Latham, 2013; Connelly, 2018; Hess et al., 2009; Larive & Bulska, 2006; McClendon & Stover, 2014; Miller, 2007; Moyo, 2019; Shelledy, 2004; Tosney, 2009; Van Dalen et al. 2002).

#### **2.4.3.1 Multimodal Analysis of Academic Posters**

From a linguistic point of view, the literature on posters is evidently limited. Despite the pivotal role academic posters play in disseminating knowledge among researchers, as no conference, for example, is void of that genre, little attention has been given to studying that genre. As stated in section 1.2.3, the main reason behind that lack of relevance of studies is likely the idea of hierarchy of genres explained by Swales. Swales, the doyen of genre analysis studies, believes that not all genres maintain equal value and that the value of each genre is likely to vary across various academic communities (Swales, 2013).

According to Maci (2016), the first investigation of posters was made by Dubois (1985a, 1985b) who sought to look into the generic features of posters and how they were displayed. She highlighted the pivotal role academic posters play in popularizing scientific communication with the objective of creating potential networks amongst researchers (as cited in Maci, 2016).

Intradisciplinary studies were carried out by scholars with the aim of identifying linguistic features that are typical of posters belonging to specific disciplines, especially the medical field. It is worth mentioning that the medical field in particular (medicine, nursing, health care) is the most common place where posters are used (Maci, 2011, 2016; Rowe, 2017).

As part of her apparent interest in studying the language of medical discourse and the change it has been going through, Maci, for instance, (2011, 2016) made significant contributions in this respect. While she examined the macrostructure of medical posters and sought to get insights

into the special relationship between text and images (Maci, 2011), Maci (2016) showed more interest in the multimodal analysis of medical posters by piloting a suggested framework specifically tailored for the multimodal analysis of academic posters. Although she tackled important elements of a poster, namely layout, modality, visual elements, and the interrelation between written and visual modes, a lack of tools to analyze the textual elements of a poster makes her proposed framework not comprehensive enough. The worthy contribution of Maci's framework, however, is that part of her framework addressing the special relationship between textual and visual resources. According to that framework, the relationship can be either illustrative or stopping off, code mixing or code switching, or interactive (content-oriented) or interactional (reader-oriented). It is noteworthy that Maci (2012) was also interested in examining poster abstracts; however, this is beyond the focus of the present study.

#### ***2.4.3.1.1 The Significant Contribution of Larissa D'Angelo***

A powerful impetus was given to the multimodal analysis of academic posters through the diligent work of Larissa D'Angelo (2010, 2011, 2016a, 2018). The significance of D'Angelo's contribution lies mainly in two factors: the comprehensive framework she specifically designed to run a multimodal analysis of posters (D'Angelo, 2010, 2016a) and the subsequent studies that she conducted experimenting with that framework across different disciplines (D'Angelo, 2011, 2016a, 2018). Acknowledging the dearth of linguistic/semiotic analysis conducted on academic posters and capitalizing on both, Hyland's metadiscourse model (2000) and Kress and van Leeuwen's visual analysis (1998, 2001), D'Angelo (2010) took the initiative of introducing an analytical framework aimed at highlighting the communicative purposes, reader-oriented strategies, and visual-linguistic interaction utilized in that special multimodal genre.

Central to that analytical framework is the notion of interactive and interactional resources that operate at both text and image. It is noteworthy that the distinction between interactive and interactional resources that are capable of organizing the text and expressing stance was originally introduced by Thompson and Thetela (1995 and further developed by Hyland to include stance and engagement features (D'Angelo, 2010, 2016a). Interactive resources are primarily concerned with organizing information and guiding the reader/viewer in the comprehension of the multimodal ensemble (D'Angelo, 2016a). In text, they are realized by transitions, frame markers, endophoric markers, evidentials, code glosses. In visuals, interactive resources are achieved by the following interrelated systems: Information Value, Framing, Connective Elements, Conversion Processes, Taxonomies, Flowcharts and Networks (D'Angelo, 2016a). Interactional resources, on the other hand, are concerned with attracting and engaging viewers to the multimodal ensemble and involving them in the argument (D'Angelo, 2016a). Textually, interactional resources are realized by hedges, boosters, attitude markers, engagement markers, and self-mentions. Visually, interactional resources are centered around the notion of salience through which elements are employed to attract the viewer's attention by different degrees. That salience is realized by elements such as contextualization, representation, placement, contrasts, and use of pictures. Notably, D'Angelo (2016a) revisited that analytical framework and made a major modification by removing the visual interactional resources and confined the visual analysis to interactive resources solely. For the purpose of the present study, the 2016 revised version of D'Angelo's framework will be discussed in detail in section 3.7.

Upon introducing her framework, which she piloted its preliminary version with a single academic poster in applied linguistics (D'Angelo, 2010) and introduced its final refined version (D'Angelo, 2016a), D'Angelo conducted a series of empirical studies experimenting with



corpora of different sizes belonging to a host of disciplines. Seemingly, with each study, D'Angelo sought to expand the scope of her experiment in terms of both, the magnitude of the corpus and the variety of disciplines she was trying to explore. As mentioned above, the starting point was a single poster in applied linguistics (D'Angelo, 2010) that was followed by a corpus of 60 posters of around 47,000 words in law, psychology, and physics (D'Angelo, 2011) and culminated in the release of her book *Academic Posters: A Textual and Visual Metadiscourse Analysis* (D'Angelo, 2016a) which included the final revised version of the framework applied to a corpus of 120 posters of around 94,000 words covering almost the same disciplines (law, clinical psychology, and high energy particle physics). She further conducted another study on a larger corpus of 150 posters of around 121,000 words compiled from five other disciplines: applied Linguistics, medicine, economics, biology, and geography (D'Angelo, 2018).

In all the aforementioned studies, D'Angelo (2010, 2011, 2016a, 2018) had the same overall purpose of identifying the textual and visual patterns in the academic posters across different disciplines and adopted the same mixed-method design of quantitatively identifying the number of raw occurrences of each interactive/interactional resource and qualitatively rendering a verbal thematic analysis. The general findings of D'Angelo's work have revealed significant differences across the investigated disciplines. Unexpectedly, lawyers were found to be not as wordy as clinical psychologists, the wordiest, and high energy particle physicists (D'Angelo, 2016a). In a similar vein, geographers, who supposedly depend mainly on visual illustrations, and economists were the wordiest when compared to biologists, physicians, and linguists (D'Angelo, 2018). With respect to the textual metadiscoursal resources, lawyers used the largest amount of interactive resources. In her final version of the framework, descriptive statistics was mainly used to examine the differences among poster writers.

Except for D'Angelo 2016a, where a short survey was used at the very beginning to have a general idea about the usage of academic posters across the examined disciplines and an interview was used as a supplementary instrument to get additional information for the analysis of posters, no other instruments were utilized in the aforementioned studies to complement the textual and visual analysis with other supplementary data. However, a major criticism that may be directed to D'Angelo's work is its limitation to account for the relationship between text and image. At the very outset of her work on posters and building on Kress and van Leeuwen's (1998) observations in this regard, D'Angelo (2010), clearly articulated the potential relationship between text and visuals explaining that each of the semiotic code of language and the semiotic code of image has its own special affordances of realizing what turns to be at the end quite similar semantic relations. Verbs in language, for example, which signify actions, can be realized in pictures by vectors. Likewise, what in language is realized by locative prepositions can have a counterpart in pictures represented by that contrast between foreground and background, thus, similar semantic relationships achieved through different semiotic resources according to the nature of each mode. In other cases, what is expressed in language cannot be realized in image and vice versa, rendering the relationship rather complementary (D'Angelo, 2010). D'Angelo (2010) further recommends that in order to run a thorough multimodal analysis, one has to take both text and image into account as they operate together to achieve unity, clarity, and salience. Surprisingly, and for some unknown reason, in none of her four aforementioned studies on the multimodal analysis of posters, D'Angelo tapped into the nature of the relationship between text and image. Hence, upon identifying the textual and visual metadiscoursal resources in the examined corpora, no attempt was made to investigate whether the visuals used, for example, express the same idea, complement the idea by adding new meaning, or even contradict with the

idea expressed in the text. This is in fact the core of multimodal research. Instead of asking what multimodal ensembles are, it is better to ask what multimodal ensembles do. How meaning is constructed when those various modes interact with each other (Serafini, 2013). A major aim of the present study is to attempt addressing that pitfall in the aforementioned previous studies. In doing so, another framework (Maci, 2016), was consulted as a supplementary tool of analysis. Unlike D'Angelo's framework basically designed to carry out a detailed multimodal analysis by deconstructing the textual and visual elements of a poster into interactive and interactional and analyzing each separately, Maci's framework tends to adopt a broader perspective by looking holistically at four aspects in posters: layout, modality, visual elements, and the interrelation between written and visual resources (see section 3.8 for more details of Maci's framework). Nevertheless, what distinguishes that framework is its attempt to interpret the nature of the relationship between textual and visual elements in posters. Hence, a combination of the two frameworks is likely to help render a comprehensive multimodal analysis of posters.

#### **2.4.3.2 Perceptions of Multimodal Ensembles**

In addition to the apparent interest in investigating the efficacy of using multimodal ensembles as facilitative tools in different educational contexts and conducting linguistic multimodal analysis of such multimodal ensembles, researchers have also been interested in looking into both students' and teachers' perceptions and attitudes towards those special modes of communication. In examining learners' perceptions, some researchers have sought to tap into how learners perceive multimodal ensembles as compared to traditional essay writing (Beard, 2013; Kim & Belcher, 2020). Addressing one of the main questions that guided her PhD dissertation, Beard (2012), for example, sought to explore students' attitudes and perceptions of multimodal composition and how they may perceive them as different from traditional essay writing. Among

the key findings that she reported is that students perceived the skills acquired through multimodal tasks as “professionally valuable” while the skills that are inherent to traditional composition as “valuable in their academic lives” (Beard, 2013, p. 198). Likewise, Kim and Belcher (2020) sought to compare the perceptions of 18 Korean university students majoring in different disciplines (computer science, mechanical engineering, chemistry, and biology) towards the two types of tasks: digital multimodal composing (DMMC) and traditional essay writing. The findings of that study showed that generally, students perceived DMMC as more interesting and believed that it may be more appealing to audience. However, the students revealed mixed views regarding whether DMMC may help them improve their overall writing performance. In setting the rationale for that study, Kim and Belcher (2020), expressed that students and instructors should not divert from their ultimate goal, which is language focus. Apart from the comparisons between multimodal and traditional writing, Jiang and Luk (2016) tried to offer an additional lens into the issue by investigating students’ and teachers’ perceptions towards the factors that may make multimodal writing tasks motivating for EFL learners. The results of their one-year longitudinal research study revealed seven factors, namely challenge, curiosity, control, fantasy, competition, cooperation, and recognition, as standing behind the motivating capacity of multimodal projects.

Teachers’ perceptions as well have not fallen short from the inquiry on multimodal writing; nevertheless, the literature on teachers’ perception is apparently scarce. Among the important studies that tackled that area are Ajayi’s (2010) and Ryu and Boggs’ (2016) which almost had the same purpose of exploring teachers’ attitudes and perceptions on teaching multimodal writing tasks, albeit in different contexts. Ajayi (2010) was interested in how preservice teachers in particular perceived new literacies, their beliefs on the adequacy of the instruction they

received in their courses to embark on teaching those multimodal tasks, and finally, their tendency to deliver such new literacies in their classrooms in the future. The data elicited from 48 US teachers working in different contexts (elementary and secondary education as well as blended and intern programs) indicated that the teachers participating in the study were quite aware of the affordances of the new literacy. The participants also revealed positive perceptions to adopt such new literacies of multimodal writing in their classrooms; however, they expressed their concerns regarding the inadequacy of the preparation they had received to embark on teaching multimodality, showing their interest to take additional courses to help them in this respect (Ajayi, 2010). In the same vein, the study by Ryu and Boggs (2016) on the perceptions of five Korean instructors teaching English writing to different levels in middle and high schools almost revealed the same findings as the participants also showed positive attitudes towards teaching multimodal tasks, perceiving the benefits of such tasks in engaging writers by supplying them with a variety of semiotic resources, motivating them throughout the different stages of the writing process, evoking better understanding of the content, and providing some reluctant students with ample opportunities to express themselves. It is noteworthy that teachers in the aforementioned both articles disclosed their concerns that multimodal writing is facing a big challenge represented in the social culture that still emphasizes and prioritizes traditional writing and end result rather than process. Hence, it is not only students or teachers, but parents, schools, curricula designers, and all those involved in the educational process should be aware of the new literacies and their affordances. Methodologically, except for Ajayi (2010), who did not use but one instrument for data collection, a questionnaire, all the other aforementioned articles employed a variety of instruments to collect various types of data: digital video and audio

projects, one-to-one interviews, focus group interviews, questionnaires, written reflections, researcher notes, and observations.

#### ***2.4.3.2.1 Perceptions of Academic Posters***

Extending the line of research on exploring how multimodal genres are perceived, some researchers, though very few in number, have sought to explore perceptions towards the use of academic posters in classrooms and in conferences. Sarobol and Lertkultanon (2019), for example, examined university students' perceptions towards using poster presentations as an oral activity in an ESP course. A questionnaire was administered to 99 participants to investigate their attitudes regarding the advantages and disadvantages of using poster presentations. The findings revealed that Poster presentations are useful in developing collaborative and creative skills, developing more confidence to speak English, and increasing the opportunities of future employment. However, the participants also expressed negative perceptions towards poster presentations as they may be a time-consuming process while some participants mentioned chaos during the presentation (Sarobol & Lertkultanon 2019). Rowe and Ilic (2009), on the other hand, went to explore conference delegates' perceptions on poster presentations. In general, conference delegates showed positive attitudes towards posters as a good medium for knowledge transfer and a valid tool for academic publication. Visual appeal has also been reported to be more important than content (Rowe & Ilic, 2009). Almost the same instruments were used: a questionnaire (Rowe & Ilic, 2009), a semi-structured interview, poster session guidelines, poster samples, and observations (MacIntosh-Murray, 2007). Worthy of note is that even the scarce literature on perceptions has tackled academic posters through the lens of poster presentation events, where the poster writer gives an oral presentation about the content of the poster, not as an independent self-explanatory piece of writing. A major aim of the present study was to look

into students' perceptions towards self-explanatory academic posters where the poster is designed to speak for itself in the absence of its author.

As indicated through that review of the literature, the research on academic posters, a genre that has become almost a must for all students and researchers, is still a rich soil. Further, no triangulation of results has been made yet to collect different types of evidence when investigating that genre. No study has also aimed at looking into both the details of the textual and visual elements used in academic posters in addition to decoding the relationship between the two operating modes, text and visuals. With regard to exploring the perceptions of that special genre, a dearth of literature can also be noticed, which signifies a need to fill that void. Despite the recurrent recommendations in the relevant literature about the need to dedicate a special attention to novice university students and young researchers during their fulfillment of multimodal writing tasks, no study, to the best of the researchers' knowledge, has targeted that specific cohort of participants. Taking into account all the aforementioned limitations, the present study undertook the initiative of carrying out a multimodal analysis of academic posters produced by first-year university students taking into consideration the details of each textual and visual element used, drawing on the framework of D'Angelo (2016a) as well as the interrelation between the two operating modes, deploying in part the framework of Maci (2016). And with the aim of adopting a wider perspective in investigating multimodality, the study also sought to explore the perceptions of those novice multimodal writers towards that special genre. Thus, textual and visual analysis was complimented by collecting self-reported data where both quantitative and qualitative methods were utilized.

## Chapter 3: Methodology

### 3.1 Chapter Overview

The purpose of the present study is to answer two research questions about the common textual and visual characteristics of academic posters produced by first-year composition students (RQ1) and the perceptions and attitudes of those students towards that multimodal genre (RQ2).

Accordingly, the aim of this chapter is to outline the methodology designed to address the two aforementioned objectives. Hence, the chapter tackles in detail the research design of the study (3.2), the participants hereof (3.3), the instruments used (3.4), the procedures followed to collect data (3.5), the procedures adopted to analyze the data quantitatively and qualitatively (3.6), and finally the frameworks deployed to carry out a multimodal analysis of the corpus examined (3.7).

### 3.2 Research Design

A mixed-method design was employed to answer the two aforementioned research questions guiding the present study. Given that a poster comprises both textual and visual elements, a multimodal analysis was carried out drawing on the framework of Larissa D'Angelo (D'Angelo, 2016a), specifically designed for the analysis of academic posters. Both textual and visual metadiscoursal resources were manually searched, extracted, and quantitatively analyzed. Raw occurrences and percentages were identified for each category and subcategory. Further, descriptive statistics was used to calculate the mean and standard deviation of each category and subcategory. Upon the quantitative analysis of the textual and visual metadiscoursal resources, a qualitative analysis was conducted to explore the interrelation between text and visuals in the analyzed posters. In addition, the multimodal analysis was supplemented by collecting self-reported data by means of a questionnaire and interviews. The responses to the questionnaire



were analyzed quantitatively using descriptive statistics to calculate the means and standard deviations of each item whereas the interviews were thematized and analyzed qualitatively.

### **3.3 Participants**

The participants of the present study are undergraduate university students at a private university in Egypt where English is the medium of instruction. Two criteria were set for selecting the participants for this study: (1) taking the RHET 1020 course (a detailed description of the course is provided below) and (2) creating an academic poster while taking that course. RHET 1020 is basically a research writing course intended for freshmen full-time university students where they are expected to learn the basics of research, such as coming up with plausible research questions, identifying and documenting credible scholarly resources, developing critical literature review, and constructing sound arguments supported by data. Communicative strategies, such as using audiovisual materials and doing presentations are utilized in that class. Sometimes the course is taught on a specific theme, but other times it is left to students to choose the theme of their own research project. The feedback is usually provided in several ways such as instructor written feedback, instructor-student conferencing to give customized feedback for each student, or through peer review, which is a common activity in this class to help students develop a critical sense of research writing. During the course, the students are introduced to different types of research questions and learn how to decide on the most appropriate approach to collect data, run analysis, and present the findings of their research to a specific community. By the end of the course, the students are expected to submit a well developed research paper demonstrating their understanding of research processes and academic writing conventions. Creating an academic poster summarizing the research project conducted throughout the course is a required assignment in some RHET 1020 classes. Further, those posters, produced at the end

of the semester, run for the First Year Research Experience (FYRE) competition where winners would have their posters mounted on the wall of the Rhetoric and Composition Department and win a financial award.

The median age of the participants is 20 years. They usually come from diverse educational backgrounds, but they are generally graduates of either the Egyptian General Secondary Education Certificate (Thanaweya Amma) or international certificates of completion of secondary education, such as the British IGCS, the American High School Diploma, the German Abitur, etc. In terms of their proficiency level in English, RHET 1020 students can be classified as advanced students. The 1020Rhet course counts three credits and is taught twice a week. Each session is 75 minutes.

For the multimodal analysis of posters, 100 posters were collected from the archival data of former RHET 1020 students by contacting instructors working in the Department of Rhetoric and Composition (RHET), upon obtaining the approval of the Institutional Review Board (IRB) at the university. The poster writers are 50 males and 50 females who produced academic posters throughout the spring and fall semesters of 2020. For the self-reported data part, upon excluding four responses who did not meet the aforementioned criteria for the selection of the participants of the study, 66 students participated in the questionnaire. The respondents are 27 males and 39 females who produced an academic poster during their attending of the RHET 1020 course throughout the period from fall 2017 to fall 2020. The responses to the interviews were collected from four interviewees who volunteered to take part in the study. They are all Egyptians, three females and one male with a median age of 21. They all created an academic poster during taking the RHET 1020 course during the period from spring 2018 to fall 2020.

By collecting the emails of the questionnaire respondents, it was found out that many of the participants who filled out the questionnaire undertook the two tasks of producing a poster and responding to the questionnaire. But it is only one participant who responded to the three tasks. Student 4 responded to the questionnaire, participated in the interviews, and her poster was one of the 100 posters analyzed.

### **3.4 Instruments and Data Collection Procedures**

Three instruments were used for the purpose of the present study: writing samples (academic posters), a questionnaire, and interviews. The details of each instrument and how it was used for data collection are provided in the following three subsections.

#### ***3.4.1 Writing Samples***

The first research question driving this study is concerned with investigating the common textual and visual features of academic posters produced by novice university multimodal writers. Upon receiving an IRB approval, instructors teaching the above-mentioned RHET 1020 course were contacted to help out by providing the academic posters from their archival data. More than 200 posters were received. But due to time constraints and that the identification of the textual and visual resources would be manual, not via a corpus software, only 100 posters were selected to compile the corpus for this study observing the two aforementioned criteria of taking the RHET 1020 course and producing an academic poster as an assignment in that course. Although gender does not come into play as a variable in this study, yet it was observed to collect half the sample (50 posters) from males and the other half (50 posters) from females with the potential of using that sample in a further future study specifically dedicated for gender differences among multimodal novice writers. Worth mentioning is also that out of the 100 posters, 91 posters were

gathered from the archive of one instructor as that archive was neatly organized. All the posters were produced in spring and fall of 2020. All files were checked to exclude any poster that was produced as part of a course other than the intended RHET 1020. Most of the posters were received in pdf format with few received as PowerPoint PPTX files. The files were stored in a folder on the researcher's personal laptop to be prepared for the quantitative and qualitative analyses.

### ***3.4.2 Questionnaire***

The second research question of the present study looks into how novice multimodal writers perceive academic posters as a multimodal genre. Two instruments were used to address that research question: a questionnaire, that is described in this section in detail, and interviews, whose details are stated in the following subsection (3.4.3). Due to the paucity of research on academic posters, there was no already existing questionnaire in the previous studies that could suit the particular purpose of the present study. The frequently mentioned questionnaire of Rowe and Ilic (2009), for instance, tapped into the perceptions and attitudes of conference delegates about poster presentations as an effective medium of knowledge transfer. Likewise, the questionnaire used by D'Angelo (2016a), was mainly intended to have a general picture of who, how, when, and why posters were used in the three disciplines under comparison (low, physics, and psychology) with the purpose of using the results of that questionnaire in compiling a representative corpus of posters for her study. The respondents were researchers with extensive experience in academic and novice staff members (assistant lecturers, research assistants, PhD students). The present study, however, targets a different cohort of participants, novice multimodal writers, and has a more specific purpose of exploring the perceptions of those novice

multimodal writers towards the self-explanatory academic poster, not the one accompanied by an oral presentation.

The designed questionnaire comprised 27 items that were divided into three sections. Part I included three factual questions aimed at collecting demographic data about the respondents: making sure that they already took the RHET 1020 course (q1), if yes, in which semester (q2), and their gender (q3). Part II and III included attitudinal questions that tapped first into students' general perceptions of academic posters (10 questions in part II) and then narrowed down to examine their specific perceptions of academic posters as a multimodal genre (14 questions in part III). Questions one through five in addition to question 27 are MCQ questions. Questions six through 26 are measured on a five-point Likert agreement scale ranging from strongly disagree (1) to strongly agree (5).

Upon consulting the relevant literature on academic posters and on other similar multimodal forms, the questionnaire was designed to tap into five themes following a funnel structure, starting by the very broad idea of students' perceptions of their general experience with that genre, their perceptions about the efficacy of that genre in promoting their research projects, narrowing down to look into their perceptions of academic posters as a different genre in terms of its textual and visual modes, and eventually how they envisage the interrelation between its two semiotic resources (text and visuals).

The statements of the questionnaire were carefully designed so that each statement would reflect either a certain view established in the literature or a finding in a similar multimodal analysis study. To exemplify, it has been established in the literature on posters that an academic poster is primarily a visual medium where visuals take the priority in attracting viewers from a distance to

come and see what is there in that research first and then facilitating their apprehension of the content (Maci, 2011; Rowe, 2017; Rowe & Ilic, 2009). Accordingly, item 15, which reads as “In an academic poster, visuals have the priority over text, was designed to examine the participants’ level of agreement with that opinion. In a similar vein, the relationship or the interplay between the various modes is among the major recurring themes in the research on multimodality. Do the modes utilized tend to complement each other or work independently? And does each mode have its affordances and limitations for making meaning? Five questions (14, 15, 18, 19, 26) were particularly designed to probe into that theme. A full copy of the questionnaire is attached in appendix 2.

An online form was created on Google Forms to include both the IRB approval and a copy of the questionnaire. To verify its comprehensibility and how much time it may take, the questionnaire was piloted among a number of undergraduate students who had an experience with producing an academic poster during their university courses, and modifications were made according to the received feedback. Every effort was made then to circulate the questionnaire among the target students. Instructors of the RHET 1020 course were emailed to circulate the link to the questionnaire among their former students. The link to the questionnaire was also posted on Facebook groups of the students. Moreover, emails were extracted from all the collected posters and students were kindly requested to help by responding to the questionnaire. Two gentle reminders were sent to the students urging them to fill out the questionnaire. All those efforts yielded a response rate of 70 responses that were collected over two weeks. Four responses were ruled out as two participants answered with no for taking the RHET 1020 course and two others answered with no for producing a poster during the course. The final response rate is then 66.

### **3.4.3 Interviews**

In order to have an in-depth insight into the students' perceptions of academic posters as a multimodal genre, the self-reported data was supplemented by conducting semi-structured interviews. The interview questions were designed to project the same five themes tapped into through the questionnaire with the intent of eliciting more information. A copy of the interview questions is attached in appendix C.

To choose the informants, the last statement in the questionnaire asked the respondent whether he/she would like to take part in a relevant interview. Further, it was posted on a Facebook group that includes more than 18000 student members asking for their tendency to participate in the study. Four students were interviewed, observing the same aforementioned criteria. Due to the current online mode of learning, all interviews were held remotely, three via phone and one through Zoom. They were all audio recorded and transcribed. The interviews took from 30 to 40 minutes.

### **3.6 Data Analysis Procedures**

The present study has a twofold objective: investigating the common textual and visual communicative strategies deployed in the academic posters produced by novice university students (RQ1) and exploring those students' perceptions of that multimodal genre (RQ2).

Textual and visual analysis was carried out to address RQ1 while analysis of self-reported data was conducted to answer RQ2. Quantitative and qualitative methods were utilized to analyze the various sets of data. In the following two sections, the procedures of the textual, visual, and self-reported data analyses will be provided in detail.

### ***3.6.1 Textual and Visual Analysis of Academic Posters***

As previously explained herein, a poster comprises three modes: textual, visual, and spoken; however, it is solely the textual and visual modes that are targeted by the present study. To carry out textual and visual analysis, a framework specifically tailored by the Italian professor Larissa D'Angelo for the analysis of academic posters (D'Angelo, 2016a) was mainly utilized. It is a two-dimensional framework that looks into both communicative textual and visual strategies that poster writers employ to guide readers through their posters and facilitate their comprehension of the content. The textual dimension of that framework, based originally on the theoretical metadiscourse model of Hyland (2005), distinguishes between two main categories of textual resources interactive and interactional with each further divided into five subcategories. The visual dimension, adapted from the seminal work of Kress and van Leeuwen (1996, 2006), identifies five main interactive visual resources with each as achieved through a number of subcategories. And due to the limitation of D'Angelo's framework to decode the interplay between the two operating mode, another framework (Maci, 2016) was particularly consulted to analyze the interrelation between text and visuals in the sample at hand. The details of the two frameworks used are provided in section 3.7.

As noted in section 3.4.1, the posters gathered were received as PDF or PPTX files. To prepare the posters for the textual analysis, the textual component was extracted from each poster and inserted in a Microsoft Word file and named as the original poster file.

For overcoming potential problems of any overlapping of categories, redundancy, misfit, etc. that may arise during the analysis, two norming sessions were held with a colleague who graduated recently from the same MA TESOL program. The sessions were held online via Zoom platform.

In the first session, which lasted for around 40 minutes, an oral presentation was done using



PowerPoint slides to explain the framework and a sample analysis of two posters (one carried out by the designer of the framework and the other by the researcher) to familiarize her with the textual dimension of the framework. Upon that session, five random posters were selected and analyzed by both of us. The second session, which lasted for three hours, was dedicated to explaining the visual dimension and discussing the textual analysis carried out of the five posters. Upon our discussion, we reached agreement of 91%. Out of 133 occurrences extracted from the five analyzed posters, we agreed on 121 occurrences. A visual analysis of the same five posters was followed by both of us (the second coder and the researcher) where we reached a 100% agreement due to the relatively little use of visual resources and their clarity compared to the textual resources.

With the intent of coming up with robust results, before embarking on the textual analysis in particular, all the examples of the interactive and interactional subcategories mentioned by Hyland (2005, 2007) through the explanation of his metadiscourse model, which informed the textual dimension of the framework applied for the purpose of this study, were extracted, copied in a separate Microsoft Word file, organized, and summarized to be an extra guide during the analysis. That compiled reference along with the three appendices of the searched metadiscoursal resources of Hyland (2005, 2007) and D'Angelo (2016a) were prepared to be consulted in the case of encountering an ambiguous textual device. Hence, each single instance extracted through the analysis has a strong rationale from either the framework as explained by Hyland (2005) and D'Angelo (2016a) or the examples set by Hyland (2005, 2007) while explaining his metadiscourse model.

Interactive and interactional textual resources were manually identified and coded in accordance with the tagging set by D'Angelo (2016a, p. 121). A decision was made to search and identify

the textual resources manually and not automatically through the use of a corpus software so as to identify all the potential metadiscoursal resources and not to be confined to a specific list of lexical items that was to be searched.

Since the boundaries are not that clear-cut, some decisions continued to be made during the analysis. Each decision made and each rule set were documented in a separate Microsoft Word file. Observing the consistency of results, all the analyzed posters were revised one more time to make sure that the decisions made were applied to the whole sample. Raw occurrences of each subcategory were recorded in an Excel sheet to run the quantitative analysis.

Pertaining to the visual analysis, each single poster was checked to identify the visual elements listed by D'Angelo (2016a): information value, framing, connective elements, graphic elements, and fonts. The detected visual element was calculated as one occurrence regardless of how many times it was used throughout the poster. Three pie charts for instance, a subcategory of graphic elements was calculated as one occurrence of graphic elements. The visual analysis was more straightforward as the aim was to check whether each visual element of the framework was used in the poster under analysis. There was not such overlapping or ambiguity that might have been encountered in the textual analysis. Similar to what was applied in the textual analysis, the raw occurrences of each visual resource were recorded in an Excel sheet to run a quantitative analysis.

To understand the interrelation between text and visuals as either illustrative or stopping-off (Maci, 2016), each poster was checked one more time (qualitative analysis). And to look quantitatively into that issue, each of the two types of relation was assigned a code. When the

interrelation was illustrative, the poster was given 1, and when it was stopping-off, it was assigned 2 to help decide on the type of interrelation common in the analyzed sample.

Upon the qualitative analysis by identifying all the potential interactive and interactional textual resources and all the interactive visual resources, a quantitative analysis was conducted.

Descriptive statistics was mainly used to calculate the mean and standard deviation of the various interactive and interactional resources identified.

Total raw occurrences, percentages of each subcategory per its main category and per the total occurrences, mean, and standard deviation were calculated automatically using Microsoft Excel.

Following relevant studies of D'Angelo (2016a) and Li (2014) on multimodal analysis of academic posters, the final results were reported in tables followed by sets of illustrative examples of each subcategory. An attempt of interpreting and linking the results of the present study to the previous literature followed in the discussion (chapter 5).

### ***3.6.2 Analysis of Self-Reported Data***

As previously noted, one of the main objectives of the present study was to explore the perceptions of first-year university students towards the multimodal genre of academic posters.

To this end, a questionnaire and interviews were used to collect self-reported data as described in detail in sections 3.4.2 and 3.4.3.

With regard to the analysis of the questionnaire responses, the responses were downloaded as a CSV file and then copied to an Excel spreadsheet. Four responses were excluded as they did not fulfill either one or both of the two criteria set as described in section (3.3). The responses designed on a five-point Likert scale (questions six through 26) were quantified as follows.

Strongly disagree was assigned 1, disagree 2, neutral 3, agree 4, and strongly agree 5.

Descriptive statistics was then used to calculate the level of agreement with each statement by calculating the mean and standard deviation. The responses of questions 1 through 5 in addition to question 27, the last question, were not quantified as they were mostly yes or no questions asking about demographic data. Hence, manual simple calculations were applied to them. The results of the quantitative analysis were reported in tables in accordance with the five themes of the questionnaire.

The audio recorded responses of the interviews were transcribed to be qualitatively analyzed. Since the interview questions were designed to tap into the same five themes driving the questionnaire with the purpose of probing more into the students' perceptions into those themes and not being restricted to the numerical data elicited by the questionnaire, the major themes were already outlined and known to the researcher: students' general experience with that genre, their perceptions of posters' efficacy in transferring knowledge, their perceptions of academic posters as a different genre in terms of its textual and visual modes, and how they perceive the relationship between the two modes. In addition to the major themes, four sub themes emerged, namely their main challenges when working that genre, their perception of working with a template, new skills they have learnt upon that experience, and the space of creativity allowed in that genre. With the aim of having a complete picture, the responses to the questionnaire and the interviews were coupled to each other under five major sections in chapter 4 of the results where the quantitative data elicited by the questionnaire was reported first followed by the qualitative data from the interviews.

### **3.7 Framework for Multimodal Analysis of Posters**

Having a careful look at the relevant literature, it is obvious that creating a comprehensive framework specifically tailored for the analysis of posters was likely on the priority list of Larissa D'Angelo. As previously mentioned, she introduced a preliminary version of her model applying it to only one poster sample (D'Angelo, 2010), expanded the experiment with the new designed model with a corpus of 66 posters, tracing the cross-disciplinary differences (D'Angelo, 2011), and reached the climax of her commendable work in 2016 when she introduced the final refined version of her framework applying it to a corpus of 120 posters.

Acknowledging the need to a model that is capable of accounting for how textual and visual elements in a poster work together to make meaning or create semantic relations, D'Angelo introduced her hybrid framework of interactive and interactional resources which she did not develop from scratch, but rather made use of two other models: Hyland's metadiscourse model (Hyland, 2005) for the textual analysis and Kress and van Leeuwen (1996, 2006) for the visual elements. In the following sections, D'Angelo's two-dimensional framework will be discussed in detail, highlighting its textual and visual resources.

#### ***3.7.1 Textual Metadiscoursal Resources***

Drawing on Hyland (2005) metadiscourse model, which considers how authors refer to texts and to themselves and their audience, D'Angelo (2010, 2016a), developed that dimension of her model to render the textual elements of posters (see section 1.7.2 for the definition and key principles of metadiscourse). According to the metadiscourse model, developed by Hyland (2005) and adopted by D'Angelo (2010, 2016a), metadiscourse involves two distinct communicative dimensions: the interactive dimension, mainly concerned with guiding the reader

through the text depending on the writer's prior knowledge of his/her readers, and the interactional dimension, mainly concerned with how writers show their persona in the text and to what extent they involve their readers in the text. Below is a detailed description of the textual interactive and interactional metadiscoursal resources encompassing the textual dimensions of D'Angelo's framework.

### **3.7.1.1 Textual Interactive Metadiscoursal Resources**

Textual interactive metadiscoursal resources are concerned with how writers arrange or organize their texts and guide their readers through the text based on their appreciation of the reader's likely knowledge and understandings to help their readers find the text coherent and convincing (D'Angelo, 2016a, Hyland, 2005). Interactive metadiscoursal resources are divided into five broad sub-categories: transition markers, frame markers, endophoric markers, evidentials, and code glosses. Below is elaboration of each subcategory.

#### **Transition Markers**

Transition markers are textual devices used by authors to help readers make sense of the pragmatic connections between steps in an argument (Hyland, 2005). However, in order to be regarded as metadiscoursal resources, transition markers should relate to the internal discourse, not to the external world. Building on the classification by Martin and Rose (2003), Hyland (2005) divides transition markers into three main categories: addition markers signaling addition of arguments (e.g., and, also, moreover), comparison markers signaling similarity or contrast of arguments (e.g., likewise, similarly, vs., on the contrary, but), and consequence markers signaling either drawing conclusions or counter arguments (e.g., as a consequence, in conclusion, admittedly, in any way, nevertheless).

## **Frame Markers**

Frame markers are those textual elements that express a sequence or a shift in argument. Like transition markers, in order to be regarded as such, they have to deal with the internal world, not the outside world. They function to sequence the discourse or internally order an argument (e.g., first, then, 1/2, a/b, at the same time, next), to label discourse stages (e.g., to summarize, in sum, by way of introduction), to signal discourse goals or purposes (e.g., I argue here, my purpose is, the paper proposes, I hope to persuade, there are several reasons why), or to announce topic shifts in the text (e.g., well, right, OK, now, let us return to). Frame markers are, therefore, employed to provide framing information about specific elements of the text (Hyland, 2005).

## **Endophoric Markers**

Endophoric markers are expressions that are employed to refer to other parts of the text (e.g., (see Figure 2, refer to the next section, as noted above, as can be seen below). They help the reader follow the development of the discourse and connect to the material by referring either to a preceding part or to information that is to come later.

## **Evidentials**

Evidentials function to provide strong support for an argument by making references to literature that is commonly shared and recognized among a specific community. They help establish an academic persona and guide the readers through the discussion and orient them towards making an interpretation of the text (D'Angelo, 2016a, Hyland, 2005). Examples of evidentials are according to X, Y states, etc.).

## **Code Glosses**

Code glosses provide additional information by explaining, rephrasing, or elaborating on what has been said to ensure the reader's understanding of the writer's intended meaning (Hyland, 2005, 2018). They indicate the writer's predictions about the reader's knowledgebase and are usually introduced by phrases such as this is called, in other words, that is, this can be defined as, that is to say, e.g., this means, etc. Alternatively, they may be marked off by parentheses.

### **3.7.1.2 Textual Interactional Metadiscoursal Resources**

Textual interactional Metadiscoursal resources fulfil a twofold role: showing the author's persona by explicitly expressing a point of view (boosting or hedging a claim) and acknowledging others' point of view. They are also divided into five subcategories as identified by Hyland (2005, 2018) and adopted later in the textual dimension of that framework: hedges, boosters, attitude markers, self-mentions, and engagement markers. Below is an illustration of each subcategory.

#### **Hedges**

Hedges are textual devices used to reflect possibility instead of certainty and recognize alternative points of view (e.g., perhaps, possible, may, could). By hedging, the author presents information as opinions rather than facts thus Open to negotiation.

#### **Boosters**

Contrary to hedges, boosters allow the author to indicate his/her opinions and conceptions pertaining to a specific point of view or a fact by using words such as clearly, obviously, demonstrate, etc. (.

#### **Attitude Markers**



Attitude markers simply indicate the author's attitude towards a certain proposition. They may express surprise, frustration, commitment, etc. and are realized by attitude verbs (e.g., agree, disagree), adverbs (e.g., interestingly, correctly), and adjectives (e.g., suitable, coherent, noteworthy).

### **Self-mentions**

Self-mentions are realized in the text by the use of first-person pronouns and possessive adjectives to overtly signal the presence of the author in the text. According to Hyland (2001, 2005), it is a deliberate choice by writers to adopt a particular stance and indicate authorial identity.

### **Engagement Markers**

Engagement markers are utilized to involve readers in the text by either focusing their attention or including them as participants in the stretch of discourse. Readers are involved in the text by using devices such as the reader pronouns (you, your, inclusive we) and interjections (by the way, you may notice). Questions, imperatives, obligation modals, and reference to shared knowledge are also categorized as engagement markers as they rhetorically position readers by involving them into the discourse at critical points, predicting potential objection, and leading them towards certain interpretations (Hyland, 2005). Table 3.1 below, adapted from D'Angelo (2016a), originally drawing on Hyland's metadiscourse model (2005) summarizes interactive and interactional resources.

**Table 3.1***Interactive and Interactional Resources Adapted from D'Angelo (2016a, pp. 114-115)*

CATEGORY	FUNCTION	EXAMPLES
<b><i>Interactive</i></b>	<b><i>Help to guide the reader through the text</i></b>	<b><i>Resources</i></b>
Transitions	Express relations between main clauses	In addition; but; thus; and
Frame markers	Refer to discourse acts, sequences or stages	Finally; to conclude; my purpose is
Endophoric markers	Refer to information in other parts of the text	Noted above; see Fig; in section 2
Evidentials	Refer to information from other texts	According to X; Z states
Code glosses	Elaborate propositional meanings	Namely; e.g.; such as; in other words
<b><i>Interactional</i></b>	<b><i>Involve the reader in the text</i></b>	<b><i>Resources</i></b>
Hedges	Withhold commitment and open dialogue	Might; perhaps; possible; about
Boosters	Emphasize certainty or close dialogue	In fact; definitely; it is clear that
Attitude markers	Express writer's attitude to proposition	Unfortunately; I agree; surprisingly
Self-mentions	Explicit reference to author(s)	I; we; me; our
Engagement markers	Explicitly build relationship with reader	Consider; note; you can see that

### ***3.7.2 Visual Interactive Metadiscoursal Resources***

According to D'Angelo (2016a), interactive visual resources are achieved through the following interrelated systems: information value, framing, connective elements, graphic elements, and fonts. In the following lines, the details of each visual element will be provided with illustrative figures adapted from D'Angelo (2016a).

#### **Information Value**

The position of elements in the image, or in which zone of the image elements occur, determines the type of information value. The concept of information value is fundamentally based on the given-new notion, originally established in Halliday's textual metafunction of theme (point of departure for the message) and rheme (new information about that point of departure). Drawing

on Halliday's given-new information, Kress and van Leeuwen (1996, 2006) applied that concept to their grammar of visuals. Accordingly, what is already known to the viewer as familiar or agreed upon is regarded as given information (point of departure for the message) while information identified as new is that which the viewer does not have prior knowledge about or perhaps has not agreed upon yet, thus, needs more attention (Kress & van Leeuwen, 2006). Applying Kress and van Leeuwen's given-new information concept to the layout of academic posters, D'Angelo (2016a) identified the types of poster layouts as follows: left-right, top-bottom, left-right + top-bottom, center margin, and triptych. And building on Kress and van Leeuwen's identification of the given-new information in images, she designated the location of given and new elements in each layout as follows:

In the left-right layout, the elements located on the left are defined as given (mostly the introduction and methodology sections), and the elements found on the right are defined as new (the results and discussion sections).

If the poster is horizontally designed following a top-bottom layout, the given role is played by elements in the upper part providing the background knowledge while the new role is fulfilled in the lower part, usually by means of tables and charts illustrating the findings (D'Angelo, 2016a).

In some cases, such as in advertisements, posters are structured along both the vertical and horizontal axes. D'Angelo (2016a) labels that type of poster layout as left-right + top-bottom. This is a complex case when it becomes challenging to make connections between elements, and according to D'Angelo (2016a), the overall organization of the poster turns to be less distinguishable.

Some posters follow the center-margin layout. In such a case, whatever located at the center is regarded as more important; hence, the center functions as the nucleus which includes the new information while other elements are placed all around. The below figure, adapted from D'Angelo (2016a) is an example of a poster following the center-margin layout.

**Figure 3.1**

*Example of the Center-Margin Layout*

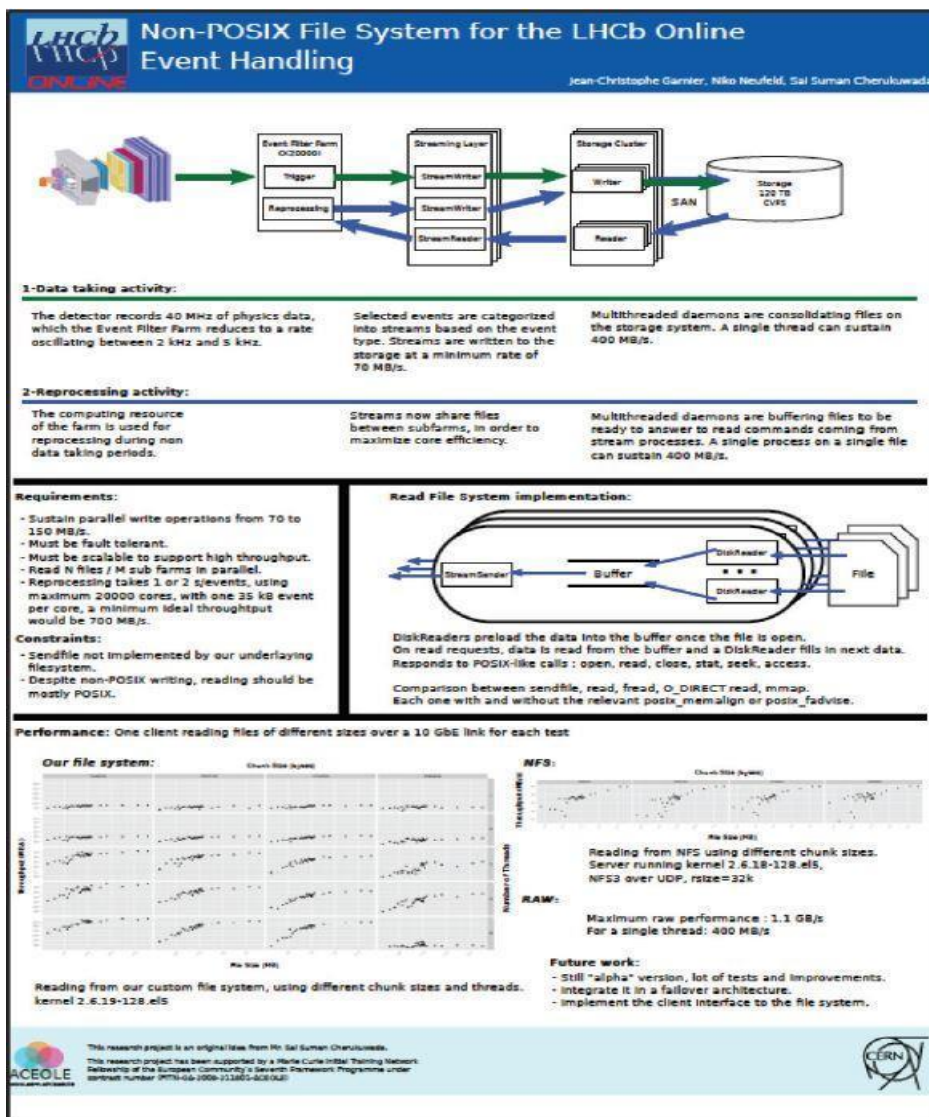


The final type of poster layouts identified by D'Angelo (2016a), drawing on Kress and van Leeuwen (1996, 2006) is the triptych which combines the given-new layout with the center-margin one. The triptych layout, commonly used in newspapers and magazines, is organized as

left (including the given), right (including the new), and the center which bridges the two acting as a mediator. The triptych can also follow a center-margin layout. In either cases, the triptych layout can be structured vertically or horizontally. The below figure, adapted from D'Angelo (2016a) is an example of a vertical triptych layout.

**Figure 3.2**

*Example of the Vertical Triptych Layout*



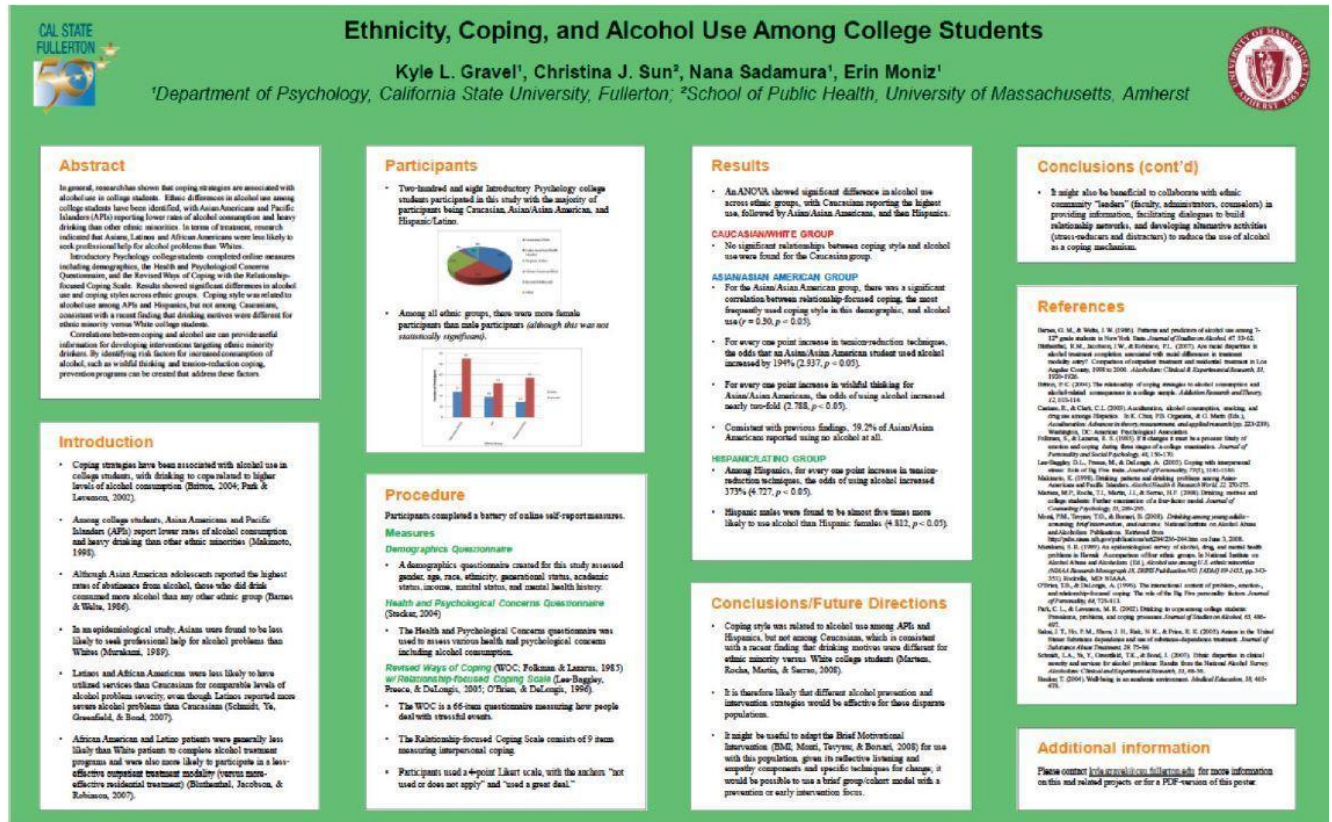
Of special note is that such orientations of locating the given information on the left and the new one on the right are culture-specific. In cultures where people write from right to left, the given is on the right and the new on the left (Kress & van Leeuwen, 2006). Hence, the conventions established herein tend to follow western cultures.

## **Framing**

As identified by Kress and van Leeuwen (1996, 2006) and adopted by D'Angelo's framework (2010, 2016a), framing is a key interactive resource that is capable of both uniting and disconnecting elements at the same time. Elements that are grouped together within the same frame are connected, but meanwhile, they are disconnected from the other elements that are outside that frame. Kress and van Leeuwen (2006, p. 203) maintain, "The absence of framing stresses group identity," when having a holistic look at the picture or the layout whereas "its presence signifies individuality and differentiation" for those elements inserted within frames. Also, elements can realize connection to each other in varying degrees; they can be strongly or weakly connected to each other. Framing is achieved through many ways: actual frame lines, empty spacing, or color contrast. Applying the framing concept to the poster layout, the elements in a poster can be connected and disconnected. In many cases, the framing technique is employed by poster creators to introduce their research content in clear, well defined sections by inserting each element (e.g., the introduction, the methodology, the participants, etc.) in a separate frame, making it clear for the viewers that when they move to read another box or frame, they will be introduced to another separate section of the research (D'Angelo, 2016a). The below figure is an example of a psychology poster employing framing to divide content into clear, well defined sections.

Figure 3.3

Example of Framing



Connective Elements


The sense of unity or connectedness, achieved by framing, can also be realized by connective elements, namely vectors, repetition of shapes, repetition of colors, and alignment. Such connective elements fulfill the function of connecting various elements in a poster and guiding the viewer through the poster to make sense of the flow of information, make relations between visuals and also between textual and visual elements (D'Angelo, 2016a). In the figure below, adapted from D'Angelo (2016a), the repetition of shapes, repetition of color, and alignment of elements clearly establish that sense of unity or connection in the poster. The below figure is an example of a poster using connective elements.

**Figure 3.4**

*Example of Connective Elements via Repetition of Shapes and Colors*

**STICKY COPYRIGHTS**  
 Discriminatory Tax Restraints on Transfers of Intellectual Property

*Bridget J. Crawford & Mitchell M. Gans  
 forthcoming, 67 Wash. & Lee L. Rev. (2010)*




*Giving Author*

*Selling Author*

*lifetime transfers*

transferor's termination right	no tax	no tax
transferee's interest in copyright	tax	tax
statutory heirs' termination rights	tax	possible tax



*death-time transfers*

death before	2036	2036?	2037
death when termination window open	2036, 2037, 2038	2036, 2038	
death after	2514?	no tax	

**SOLUTIONS?**

1. Declaration of non-taxability
2. Early taxation rule
3. Opt-in to early taxation

bcrawford@law.pace.edu (914) 422-4416      lawmmg@hofstra.edu (516) 463-5876

The poster in the figure shows repetition of shapes by means of two rectangular pictures aligned left followed by two tables in which the colors yellow, red, and green are used to signal different data. In the first category entitled “lifetime transfers” the color green signals “no tax”, the color red signals “tax”, and the color yellow signals “possible tax”. The same colors are used in the



second category entitled “death-time transfers” to indicate to the viewer that the numbers in this table are relevant to the tax/no tax/possible tax distinction (D’Angelo, 2016a, pp. 131-132).

## **Graphic Elements**

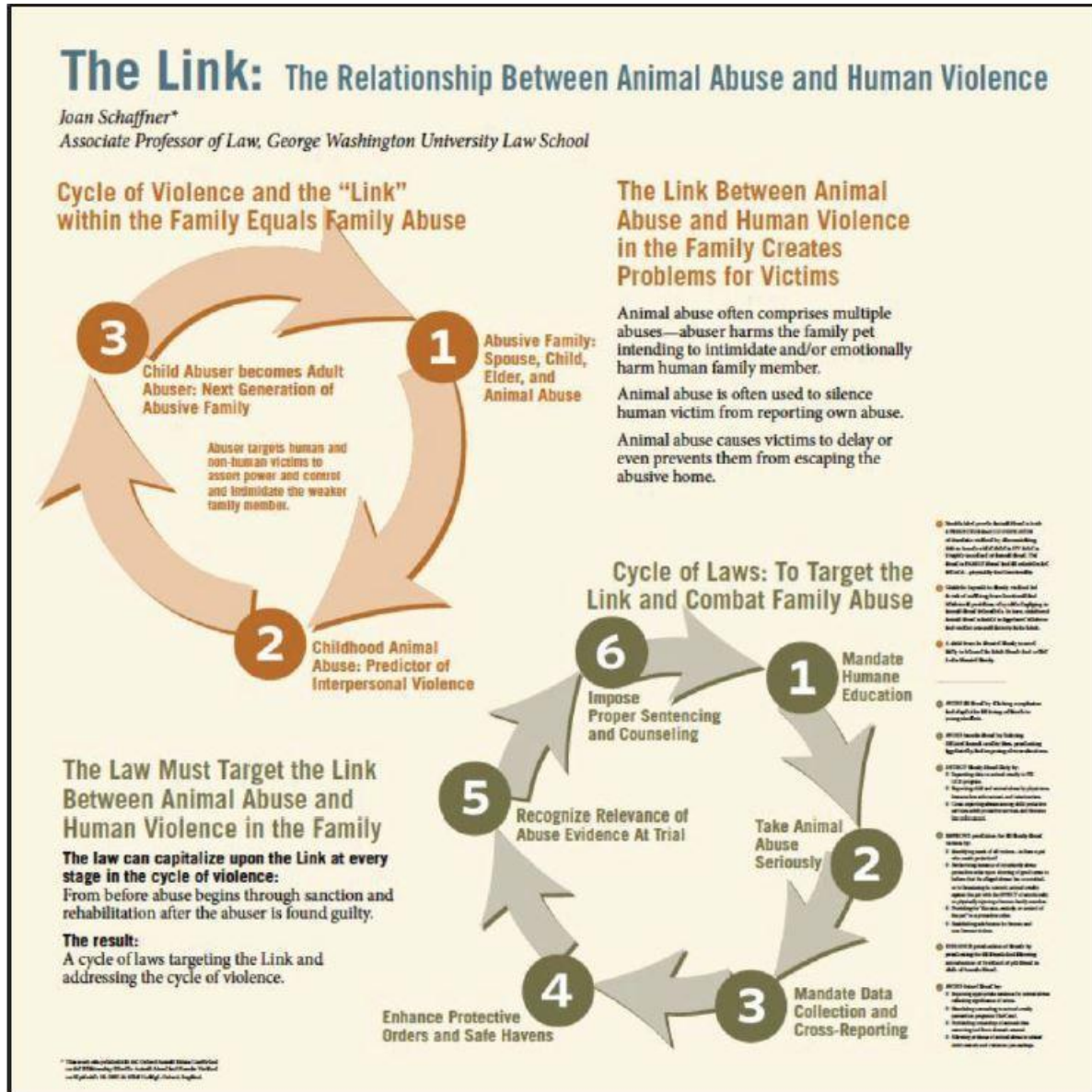
Graphic elements fulfil a pivotal role for both, the writer and the reader. While they provide writers with helpful tools (e.g., tables, pie charts) to summarize and illustrate their content, they help readers, at the same time, to apprehend the text better and faster by skip-reading the most important parts. Such graphic devices help viewers/readers to proceed in their non-linear reading, which has become a necessity due to time pressure and the multitude of posters that viewers should go through. As simply put by Kress and van Leeuwen, “linear reading is losing ground” (2006, p. 205). D’Angelo (2016a) identified eight types of graphic elements: conversion processes, taxonomies, flowcharts, networks, tables, figures (pie charts, graphs), pictures and schematic analytical pictures. Each element will be discussed in detail in the following sections.

## **Conversion Processes**

Conversion processes, known also as chain processes are frequently utilized by poster creators to represent cycles (i.e., an action or event leads to another action, leads to another action, etc.). The below poster in law is an example of using conversion processes.

Figure 3.5

Example of Conversion Processes

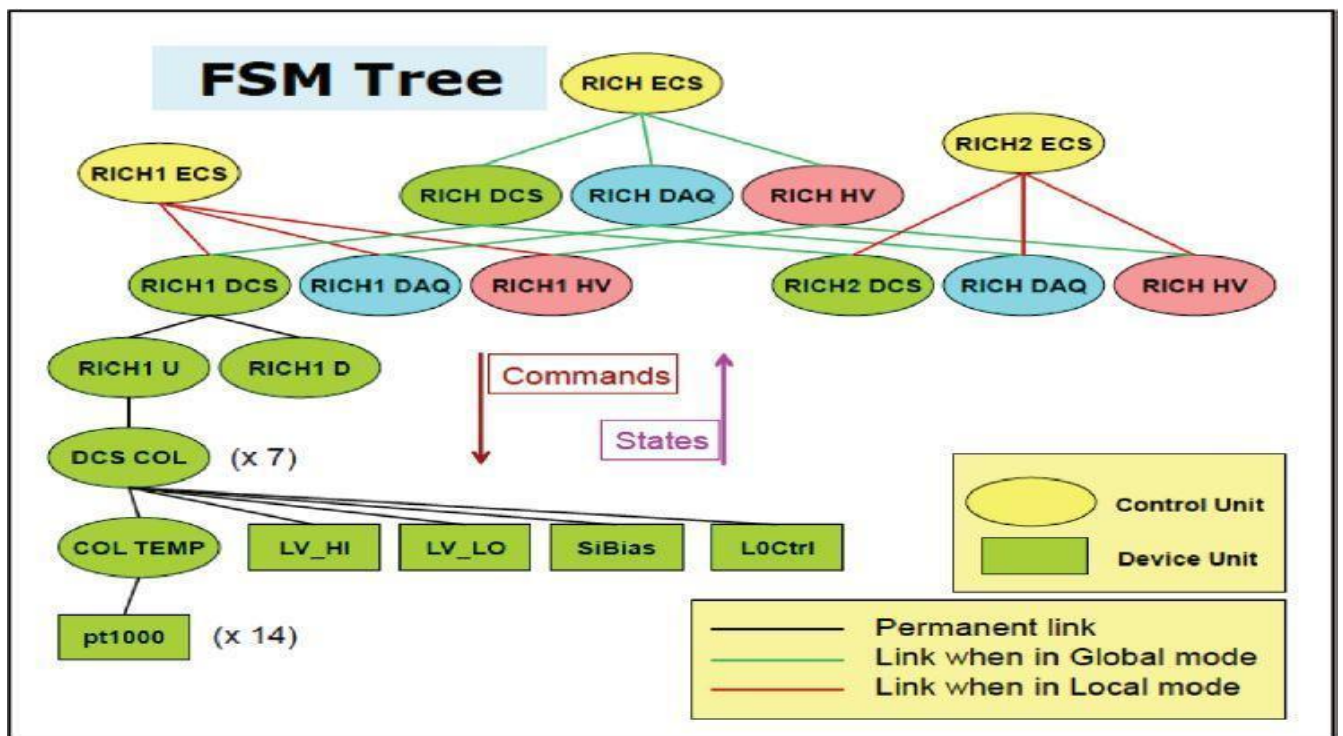


## Taxonomy

Drawing on Kress and van Leeuwen (2006), a taxonomy is one type of “classificational processes” which connect elements to each other in a hierarchical way or by means of a subordination relationship so that a set of elements are subordinates to at least one superordinate. Taxonomies can be represented by either formal diagrams with simple lines or by family trees (Kress & van Leeuwen, 2006). And the branches of the tree structure of such taxonomies can also take various forms: parallel or oblique, straight or curved. Markedly, when all subordinates are of equal importance, they are symmetrically represented by the writer as of equal size and located at equal distance from each other. The below figure shows a taxonomy with straight, oblique branches.

**Figure 3.6**

*Example of a Taxonomy*



## **Flowcharts**

Flowcharts, also known as flow diagrams or flow sheets, are another schematic representation that is similar to taxonomies. However, while taxonomies bring elements together in a hierarchical relationship, flowcharts connect elements together through a sequential relationship that has a beginning and an end and goal oriented. Flowcharts are commonly used in the graphical representation of manufacturing processes and computer programs. Thus, taxonomies and flowcharts express two different kinds of knowledge (Kress & van Leeuwen, 2006).

## **Networks**

Networks are used to indicate multiple connections between elements (Kress & van Leeuwen, 2006). An element in a network is called a node and is mostly linked to many other nodes. Ideas are represented and linked to each other in an associative network, thus, providing the viewer with a set of choices and paths to follow, albeit those choices are limited (D'Angelo, 2016a). In an attempt to elaborate on the distinction between taxonomies, flowcharts, and networks, Kress and van Leeuwen (2006), illustrate giving the following example applying to language. Simply put, a taxonomy, for instance, indicates a hierarchy of words, a flowchart a way of generating a clause following a specific sequence of rules, and a network of the collocation of this word with other words.

## **Tables and other figures**

Tables and charts (e.g., pie charts, column charts) are other interactive visual resources that poster creators commonly employ to better communicate their data (D'Angelo, 2016a). They also help readers to make sense of the provided data by going forth and back between such graphical representations (tables and charts) and the main text in a non-linear reading process.

## Schematic Analytical Pictures

Schematic analytical pictures are an important visual device where poster creators illustrate their data by specifying and labelling specific parts in a picture to make their data more comprehensible. The below poster adapted from D'Angelo (2016a) illustrates a detector whose each of its parts is designated and labelled.

Figure 3.7

### *Example of Schematic Analytical Pictures*

**ALIGN FOR ANY DEGREE OF FREEDOM AND ...**

Detector elements to be aligned and the relevant degrees of freedom are specified by the user using regular expressions, e.g.

Python List, which is passed on to the Alignment Element tool

```
elements = ['T1X1UCSide :T/OT/T1/(X1|U)/Q(0|2):TxTzRz', ...]
```

Assign a name to group of detector elements → alignment element

Detector elements to group/align

Degrees of freedom to align for, i.e. translations in x and z, and rotations in z

and similar for constraints.

## Interactive Fonts

Font color, type, and size also play a significant role as an important interactive visual resource frequently utilized in posters to help readers make better understanding of the poster. As noted by D'Angelo (2016a), professionals in psychology, advertisement, and design exerted remarkable efforts throughout the twentieth century to determine the correlation between font

types and the associated readability; however, the findings of their research have not yet been conclusive. But drawing on the advice of many scholars, such as Durbin (2007) and Shelledy (2004), among others, D'Angelo (2016a) recommends that in order to be interactive, the font size used in posters should range between 70 and 91 pt for headings, 36 and 41 pt for subheadings and between 24 and 28 pt for the main text. Those recommended font sizes are expected to facilitate readability even if the viewer stands two meters away from the poster or views the title from even a farther distance (Davis et al., 2012). Pertaining font color, D'Angelo (2016a) stresses the necessity of creating sufficient contrast between the color of the text and its background. According to D'Angelo (2016a) most typographical tips recommend inserting black text on a light background, preferably, white. Moreover, using the same color, size, and type of font in the headings across the poster is likely to distinguish each section and clarify some parts of the discourse. Table 3.2 below adapted from D'Angelo (2016a), drawing on the work of Kress and van Leeuwen (1996, 2006) summarizes the interactive resources.

Table 3.2

*Visual Interactive Resources adapted from D'Angelo (2016a, p. 125)*

CATEGORY	Subcategory	Function
<i>INTERACTIVE RESOURCES</i>	<i>Achieved through</i>	
Information Value	<ul style="list-style-type: none"> <li>- Left- Right</li> <li>- Top-Bottom</li> <li>- Left – right + top- bottom</li> <li>- Centre-Margin - Triptych</li> </ul>	Organize the layout of information in a poster
Framing	<ul style="list-style-type: none"> <li>- Frame lines</li> <li>- Color contrast</li> <li>- Empty space between elements</li> </ul>	Distinguish sections of text
Connective Elements	<ul style="list-style-type: none"> <li>- Vectors</li> <li>- Repetition of shapes</li> <li>- Repetition of color - Alignment</li> </ul>	Connect ideas and parts of visual and textual discourse
Graphic Elements	<ul style="list-style-type: none"> <li>- Conversion processes</li> <li>- Taxonomies</li> <li>- Flowcharts</li> <li>- Networks</li> <li>- Tables</li> <li>- Figures (pie charts, graphs)</li> <li>- Pictures</li> <li>- Schematic analytical Pictures</li> </ul>	Clarify and organize data for the viewer, aiding the immediate retention of information
Fonts	<ul style="list-style-type: none"> <li>- Type</li> <li>- Size</li> <li>- Color</li> </ul>	Enhance legibility; Help clarify parts of discourse, highlighting the most important parts of the text. Clarifies the organization of text.

### 3.8 Supplementary Framework

As attested in the detailed explanation of her framework, D'Angelo (2010, 2016a) initiated a contribution that should be commendable with regard to the multimodal analysis of academic posters. However, as noted in section 2.4.3.1, a major shortcoming of that framework is its limitation to decode the relationship between text and visuals, to articulate whether they work

independently or tend to complement each other. To compensate for that lack, the framework by Maci (2016) regarding that specific point will be used as a supplementary framework.

Like Larissa D'Angelo, Stefania Maci is another Italian professor at the University of Bergamo who evidently had an avid interest in studying posters, especially medical posters which resulted in devising an ad hoc framework for poster multimodal analysis. Her framework sought to comprise four elements in an academic poster: layout, modality, visual elements, and the interrelation between written and visual modes. Unlike D'Angelo, Maci (2016) tends to adopt a more holistic perspective in dealing with academic posters. Unfortunately, the version published is a preliminary version piloting the framework with only 11 posters. Nonetheless, even though the final version of that framework has not come into vogue yet, the contribution made towards interpreting the interrelation between the textual and visual modes is so significant that it would be consulted for the purpose of the present study.

Drawing on Kress and van Leeuwen (1996, 2006) and as adapted by Maci (2016), the interrelation between written and visual modes can be explained as follows. The relationship tends to be either illustrative or stopping-off. The illustrative relation occurs when pictures duplicate the text by visually illustrating what has been represented linguistically. They visually explain the content of the written mode and facilitate comprehension, the case with 'text plus tables' or 'text plus drawings', where the iconic element summarizes what has been just explained in the text. Sometimes, the illustrative relation works the other way round where it is the text that elaborates on the information provided in the visual without adding any new information. In a stopping-off relation, the written text stops abruptly and the meaning or information is covered by a visual. Maci (2016) expands the illustrative stopping-off dichotomy by relating it to Myers-scotton Matrix Language Frame Model (1997) of code mixing and code



switching. An illustrative relation is code mixing, interactive relation guiding the reader through the text (Thompson, 2001), content oriented. A stopping-off is code switching, interactional with author (Thompson, 2001), reader oriented.

Unlike D'Angelo's, Maci (2016) did not address in her framework an analysis of the textual elements, but rather focused on the visual ones, which should not be condemned, since visuals, as reported in the literature, has the priority. But it should be noted that the framework is not clear enough, especially the aspect of the visual elements of posters. However, her important and most significant contribution is that part of the framework addressing the special relationship between the two modes. The relationship can be either illustrative or stopping off, code mixing or code switching, or interactive (content-oriented) or interactional (reader-oriented).

To make the best use of the two frameworks specially devised for the multimodal analysis of academic posters, D'Angelo's framework was mainly deployed for the multimodal analysis of the corpus of this study and supplemented by Maci's with regard to the interrelation between textual and visual elements.

## Chapter 4: Results

### 4.1 Chapter Overview

In line with the growing interest in researching multimodal writing, the present study sought to inform the body of literature by investigating how first-year university students use and envisage academic posters as a special multimodal genre. The study had a twofold objective: examining the common textual and visual communicative strategies that students employ in academic posters (RQ1) and exploring their general perceptions towards that multimodal genre (RQ2). To realize the two objectives of the study, quantitative and qualitative data was collected through three instruments: writing samples (academic posters), a questionnaire, and semi-structured interviews. The first instrument was used to answer RQ 1 whereas the two other instruments were utilized to answer RQ 2. The aim of this chapter is to report the results of the study as indicated through both, the quantitative and qualitative analysis. The chapter is organized into two main sections in accordance with the two research questions guiding the study.

### 4.2 Results of Research Question 1

Research question 1 looks into the common textual and visual features characterizing the academic posters produced by first-year composition students. To answer that question a sample of 100 academic posters produced by first-year university students, specifically students who attended the RHET 1020 course (see full details of the course in section 3.3), was collected resulting in the compilation of a corpus of 27707 words. The collected sample was analyzed both textually and visually applying mainly (though not solely) the framework of Larissa D'Angelo (D'Angelo, 2016a). In the following three subsections, the results of the textual and visual analysis along with the interrelation between the two modes will be reported.

#### ***4.2.1 Textual Metadiscoursal Resources***

As noted by Hyland (2005), textual metadiscoursal resources are those textual devices that are employed by authors to explicitly organize their discourse or to express their stance towards their content or the reader. Simply put, they represent that interaction between authors and their texts, authors and readers, or in Hyland's specific terms, "text producers and their texts" and "text producers and users" (Hyland, 2018, p. 1). As maintained by Hyland (2005) and adopted later by D'Angelo (2016a) in her framework mainly used for the purpose of this study, the textual metadiscoursal resources fulfill two main roles: either to guide readers through the discourse (interactive) or to show the author's persona in the text (interactional). Interactive textual metadiscoursal resources are further subdivided into five subcategories: transition markers, frame markers, evidentials, code glosses, and endophoric markers. Likewise, interactional textual metadiscoursal resources are subdivided into five subcategories: hedges, boosters, attitude markers, self-mentions, and engagement markers.

Both categories of textual metadiscoursal resources (interactive and interactional) identified by D'Angelo (2016a) drawing on the metadiscourse model of Hyland (2005, 2018) were found in the sample under analysis, albeit used in different proportions. A rigorous qualitative analysis carried out by manually searching and extracting the various interactive and interactional subcategories in each poster was followed by a quantitative analysis to calculate the average and dispersion of each subcategory use. Descriptive statistics was used to calculate the mean and standard deviation. The calculations were automatically done through Microsoft Excel. Table 4.1 below shows the proportion of each category as indicated in raw occurrences, percentage as per total number of occurrences, its mean (M) per one poster, and its standard deviation (SD).

**Table 4.1***Distribution of Interactive and Interactional Textual Resources*

Category	Raw occurrences	Percentage per total occurrences	M	SD
Interactive	1660	70.1	16.6	5.3
Interactional	707	29.9	7.1	3.9

As shown in table 4.1, the proportion of interactive resources were used almost more than twice the number of interactional resources which tend to agree with the results of the previous literature as will be discussed in detail in chapter 5. Although the average use of interactive textual resources per each one poster almost outnumbered their interactional counterpart (M = 7.1), yet a stark difference is noticeable in their distribution as indicated by their higher standard deviation (SD = 5.3). In the two following subsections, the distribution of each subcategory will be discussed in detail to explore its usage across the corpus under investigation.

**4.2.1.1 Textual Interactive Metadiscoursal Resources**

Interactive metadiscoursal resources are textual devices deployed by authors to organize their texts and guide their readers throughout the text based on their assessment of the likely knowledge of their readers (Hyland, 2005, 2018). According to Hyland's metadiscourse model, adopted in the framework of poster analysis by D'Angelo (2016a), interactive resources are subdivided into five subcategories: transition markers, frame markers, evidentials, code glosses, and endophoric markers. Table 4.2 below illustrates the distribution of each interactive category as used in the corpus of the present study by showing the number of its raw occurrences,

percentage per total interactive textual resources, percentage per total textual metadiscoursal resources, mean, and standard deviation.

**Table 4.2**

*Distribution of Textual Interactive Resources*

Subcategory	No of Raw occurrences	Percentage per interactive resources	Percentage per total textual resources	M	SD
Frame markers	875	52.7	37.0	8.8	4.2
Evidentials	397	23.9	16.8	4.0	1.8
Transition markers	239	14.4	10.1	2.4	2.0
Code glosses	141	8.5	6.0	1.4	1.3
Endophoric markers	8	0.5	0.3	0.1	0.3

As indicated in table 4.2 above, frame markers are indisputably the most recurring interactive textual resource with a total number of 875 occurrences ( $M = 8.8$ ), followed by evidentials 397 occurrences ( $M = 4.0$ ), transition markers 239 occurrences ( $M = 2.4$ ), code glosses 141 occurrences ( $M = 1.4$ ), and only eight occurrences of endophoric markers ( $M = 0.1$ ). Following the methodology of both D'Angelo (2016a) and Li (2014) in reporting the results of their multimodal analysis of academic posters, a brief explanation of each subcategory is presented followed by illustrative examples extracted from the analyzed corpus.

As defined by Hyland (2005), frame markers are utilized to outline the text boundaries or the elements of the schematic structure of the text. They specifically serve one of four functions towards organizing the text: (1) internally ordering the argument (e.g., firstly, secondly, etc.; 1, 2, 3; finally, bullet points), (2) labelling the discourse stages (e.g., in conclusion, to sum up, overall), (3) signaling the discourse goals (e.g., my purpose, the aim of this paper, in this chapter), or (4) announcing a topical shift (e.g., now, well, with regard to).

As shown in table 4.2, the frame markers top the list with no rival. They significantly outnumber all other categories. Astonishingly, although frame markers hold the highest mean ( $M = 8.8$ ), they also show the highest standard deviation ( $SD = 4.2$ ) reflecting an obvious disparity in their distribution, which signifies the existence of outliers in the sample. In the sample considered for the present study, frame markers were used by poster writers to serve the four aforementioned functions, however, with a significant disparity. The most frequently used subtype is the bullet points (example 1 and 2) while the least occurring subtype is that of signaling topic shifts (example 3). Some poster writers also sought to announce the goal of their discourse (examples 4 and 5) or to label a specific stage in their discourse (examples 6 and 7).

1. • Body language affects perception of skin color

• Age and facial expressions influence reading body expressions (Poster 34)

2. • It was found that the change in the grammar structure is...

• There are factors that also affected the language for instance ... (poster 54)

3. *now* it is coherent why some people listen to sad music when they are in a bad mood.  
(poster 35)

4. • *This study aims to* conduct a statistical analysis on ... (poster 50)
5. This paper is written from a sociological point of view, *it discusses* ... (poster 85)
6. *In conclusion*, educational institutions' switch to the online learning mode had revealed some serious problems (poster 13)
7. *Overall*, it could be concluded that AUC undergraduate students text daily using textisms (poster 73)

As illustrated in the above examples, the poster writers used a variety of frame markers to outline their arguments and facilitate the comprehension of their discourse. However, the large number of bullet points in particular had a potent influence on the findings of the study as will be discussed in detail in Chapter Five. Frame markers signaling a topical shift, on the other hand, are the least frequently used subtype as they tend to be a feature of spoken or informal written language, and posters, though less rigid than other academic genres, still hold their formal academic status.

Evidentials function to provide strong support for an argument by making references to literature that is commonly shared and recognized among a specific community (D'Angelo, 2016a; Hyland, 2005). Examples of evidentials are according to X, Y states, according to your email dated ..., etc.). Evidentials were detected as the second most frequent textual metadiscoursal resource with 397 occurrences identified throughout the investigated corpus, representing 23.9% out of the total interactive textual resources and 16.8% out of the total textual occurrences detected with an average use ( $M = 4.0$ ) per the one poster and a low standard deviation ( $SD = 1.8$ ) suggesting an even distribution of their use. It is worth mentioning that in this analysis, what inside parentheses was counted as one evidential, regardless of how many citations were

mentioned assuming that it represents one support for the claimed statement. Otherwise, the ratio could be much higher. The most dominant form of evidentials detected in the investigated sample was through citations of previous literature (examples 8 through 10).

8. *Literature studies* showed that men who suffer from gender role conflict have a negative tendency towards seeking psychological help (*Berger, 2005*). (*Poster 2*)

9. *Jazilah's (2016) and Correa's (2013) studies point out that forensic linguistics is a vital aspect in relation to crime ... (poster 16)*

10. *This research confirms that first impressions do affect relationships, as the findings proved that first impressions are accurate (poster 89)*

That evidentials came as the second most frequently used interactive resource strongly backs up the foregoing argument that academic posters, though less rigid, still exhibit obvious characteristics of formal academic genres where writers should provide compelling evidence and strong support for their claims from the relevant literature. The majority of evidentials found were detected in the Key Studies in the Literature section, where the students used to furnish their readers with a solid background of their topic. Many evidentials were also used in the Critical Discussion and Conclusions and Implications two sections, though in a significantly lower proportion, where the students sought to link the findings of their research to the findings of other relevant studies.

Transition markers are conjunctions and adverbial phrases that are utilized by authors to help readers make sense of the pragmatic connections in an argument. They help authors to signal relations of addition (e.g., and, also, moreover), causality either (drawing conclusions) (e.g., thus, therefore, as a result), or making counterarguments (e.g., nevertheless,) and comparison (e.g.,



but, however, on the other hand) within their discourse. In the sample investigated, 239 occurrences were detected, representing 14.4% out of the total interactive textual resources used and 10.1 out of the total metadiscoursal textual resources with an average of (M = 2.4) per the single poster and a relatively moderate standard deviation (SD = 2.0). According to the textual analysis conducted for the purpose of this study, the poster authors made a good use of transition markers signaling the three above mentioned types of relations: addition (examples 11 and 12), causality (examples 13 and 14), and comparison (similarity/contrast) (examples 15 and 16).

11. A study was carried out to investigate how teachers handled bullying towards children with stutters, *and* it was found that ... (poster 10)

12. *Moreover*, the study *also* found that ... (poster 13)

13. *Due to* those technical issues, the students' experience of online learning was unpleasant. (poster 13)

14. *Therefore*, it is important to be thoughtful through this difficult time. (poster 69)

15. *On the other hand*, results from Alvarez et al.'s (2017) study suggest that ... (poster 28)

16. *Although* many students support the TFC policy, many are against the prohibition of smoking and prefer the presence of designated smoking zones. (poster 42)

Transition markers may be the textual subtype that manifests a relatively high level of diversity as the transition between ideas can be realized through a wide variety of lexical items. The present study relied on a manual search and the identification of the exact number of each lexical use was beyond its scope. However, it was obvious from the analysis that the poster writers

employed a multitude of lexical items to facilitate the flow of discourse and help their readers make connections between the ideas of the text.

Code glosses provide additional information by explaining, rephrasing, or elaborating on what has been said to ensure the reader's understanding of the writer's intended meaning (Hyland, 2005, 2018). They are usually introduced by phrases such as *this is called*, *in other words*, *that is*, *this can be defined as*, e.g., *this means*, etc. Alternatively, they may be marked off by parentheses. In the sample considered for analysis, code glosses came as the fourth most recurring interactive textual resource with 141 occurrences, representing 8.5 out of the total interactive textual resources and 6.0 out of the total metadiscourse textual resources identified throughout the corpus, with an average ( $M = 1.4$ ) used per each one poster. The poster authors used a variety of devices as code glosses to explain or elaborate on their arguments. While they sometimes used specific words to elaborate or give examples (examples 17 through 19), other times they made use of some punctuation marks, specifically parentheses, colon, dash, and comma (examples 20 through 23).

17. Traditional masculine norms has a strong correlation with alexithymia, *which is* the incapability of describing emotions verbally (poster 2)

18. This proves the colonization role in enforcing the French language. *In other words*, this enforcement left an eternal influence ... (poster 8)

19. How does excessive electronics usage *such as* video games, social media, cell phones, laptops, etc. affect ...? (poster 37)

being?

20. participated in two versions of a questionnaire (*one in Arabic and one in English*) (poster 81)

21. Survey: 103 participants responded to the online survey, aged from 16 to 26 (poster 100)

22. The other side of students' academic journey- Extracurricular activities (poster 88)

23. Students, graduates and much older participants (poster 12)

The use of code glosses indicates authors' keen interest to communicate their intended meaning clearly excluding any sense of ambiguity. The results showed that the poster authors made a good use of both lexical items and punctuation marks to provide additional information that was likely to render the text more accessible for better understanding.

Last but not least, Endophoric markers which are simply those expressions employed by authors to refer to other parts of the text (e.g., (see Figure 2, as noted above, as can be seen below) were detected as the least recurring textual interactive resource. Only eight instances were identified which represents 0.5% of the total interactive textual resources and 0.3% of the total textual resources in the examined corpus with a very low mean ( $M = 0.1$ ) indicating the scarce usage of that textual resource. See below (examples 24 through 26) for some of the rare endophoric markers detected in the corpus.

24. The nouns were separated into two groups (female and male nouns) and plotted on a graph to compare the values between the female and male groups, *as shown in figure 1* (poster 20)

25. This is shown through *the first graph* which identifies ... (poster25)

26. *The graph* shows there is a difference of 0.07 between the ratings of advertisements in English and Arabic (poster 28)

The rare usage of endophoric markers across the poster analyzed should not be surprising in any way due to the nature of the poster genre. With a text whose average word count is 277.1 displayed on a single slide, the author sorely needs to refer the readers to a specific paragraph or section in the text. The whole text should be easily accessible to the viewer, and if direction was needed, that task would likely to be undertaken by visual elements.

#### **4.2.1.2 Textual Interactional Metadiscoursal Resources**

Interactional resources are authors' textual devices to project their persona onto the text by either expressing their views or acknowledging others' views (Hyland, 2005). According to Hyland's metadiscourse model adopted in the textual dimension of the main framework guiding the present study by D'Angelo (2016a), they fall into five subcategories: boosters, hedges, attitude markers, engagement markers, and self-mentions. Although the results show that interactional metadiscoursal resources were significantly used less than their interactive counterparts as indicated in table 4.1 above, yet the participants used many of them either to show their authorial voice or to engage with their readers. Table 4.3 below displays the use of each interactional subcategory as indicated in raw occurrences, percentage as per total interactional resources, percentage as per total textual occurrences, mean (M), and standard deviation (SD).

**Table 4.3***Distribution of Textual Interactional Resources*

Subcategory	No of raw occurrences	Percentage per interactional resources	Percentage per total textual resources	M	SD
Boosters	294	41.6	12.4	2.9	2.4
Hedges	214	30.3	9.0	2.1	1.9
Attitude markers	141	19.9	6.0	1.4	1.5
Engagement markers	57	8.1	2.4	0.6	1.0
Self-mentions	1	0.1	0.0	0.0	0.1

As shown in table 4.3, boosters topped the list with a total number of 294 occurrences ( $M = 2.9$ ), followed by hedges 213 occurrences ( $M = 2.1$ ), attitude markers 141 occurrences ( $M = 1.4$ ), engagement markers 57 occurrences ( $M = 0.6$ ), and only one occurrence of self-mentions ( $M = 0.0$ ). An interpretation of those results along with comparing them with the results of other relevant studies is presented in chapter 5. The results of each subcategory are verbalized below with illustrative examples selected from the examined corpus.

Boosters allow authors to indicate their opinions and conceptions as certainties by using words such as clearly, obviously, demonstrate, etc. Astonishingly, those novice first-year university students, the participants of this study, seem confident enough in presenting their arguments. According to the findings, boosters were the most frequent textual interactional resource with a frequency of 294 occurrences across the corpus, comprising 41.6 % out of the total interactional resources, 12.4% out of the total textual resources in the corpus with an average of ( $M = 2.9$ ) used per each poster. Poster authors in the examined sample used a variety of boosters to support their claims (see examples 27 through 29 below).

27. However at the end *it was clear* through both the literature and the results of the experiment that *indeed* Language in Advertisement differs according to the target social class. (poster 25)

28. *It is clear to conclude that* hearing-impaired individuals are more vulnerable to mental health issues. (poster 29)

29. The findings *demonstrated* that games have a positive mental and/or physical influence on children. (poster 38)

That boosters are the most recurring interactional textual resource is among the significant results of this study. That particular finding signifies a high level of confidence of those young writers in presenting their arguments and the findings of their research projects. While some writers tend to be remarkably confident about the findings of their research, which translates into a noticeable use of boosters in their discourse, as indicated herein, others are more inclined to present their results in a more negotiable way as is shown below through the use of hedges.

Hedges are textual devices used to indicate possibility rather than certainty, opinions rather than facts (e.g., perhaps, possible, may, could). The results of analysis suggest that the participants of the present study tended to balance their arguments between certainty and possibility. However, hedges were used slightly less, 214 occurrences representing 30.3% out of the total interactional resources, 9.0% out of the total textual resources, and an average use ( $M = 2.1$ ) per each one poster (examples 30 through 32). As noted by Hyland (2005), it is common in academic writing that authors combine boosters with hedges (example 33).

30. This *would* allow organizations and institutions to put forth support programs for these children that *could* cater to their true needs. (poster 6)

31. Religious appeal *may* not be as effective as people *may think*, because it is *mostly* based on how religion is perceived (poster 14)

32. Women and generally viewers from a third-party perspective *tend to* have more ethical judgement and be *more prone to* flag online hateful comments (poster 83)

33. Overall, it *can be concluded* that songs can, indeed, improve language acquisition, yet this improvement can be affected by factors such as learners' levels and the repetition of the song. (poster 67)

The use of hedges is not an indication of an implausible or a flimsy argument, but it is rather a tendency on the part of some authors to negotiate their opinions suggesting that their conclusions are not quite conclusive, and that there may be a space for discussion or even a probability of error. The results of this study show that the participants tended to balance their arguments between possibility and certainty with some inclination towards adopting a more emphatic style through the higher use of boosters.

Attitude markers simply indicate authors' attitude towards a certain proposition. They may express surprise, agreement, frustration, commitment, importance, etc. and are realized by attitude verbs (e.g., agree, disagree, prefer), sentence adverbs (e.g., interestingly, correctly, unfortunately, hopefully), and adjectives (e.g., appropriate, logical, remarkable, suitable, coherent, noteworthy). In the corpus scrutinized, 141 occurrences of attitude markers were found, representing 19.9% out of the total interactional textual resources and 6.0% out of the total textual resources, with a mean of 1.4% used per poster. Adjectives in particular were the most type of speech through which poster authors projected their opinion (examples 34 through 36) as well as few examples of sentence adverbs (example 37).

34. Hearing impairment can be a *devastating* condition in a community as it is ranked as the third chronic disease ... (poster 66)

35. The relationship between parents and their children are very *important* (poster 74)

36. The pressure of parents plays a *significant* role in shaping major decisions of students (poster 92)

37. And *hopefully*, governors work on practical solutions concerning this issue. (poster 94)

Being the third frequently used interactional textual resource indicates a fair tendency of the poster writers of this study to adopt evaluative stances towards the causes of their discussion.

Along with boosters, attitude markers represent around 60% of the total interactional devices found in the analyzed corpus, a significant finding that will be discussed in detail in chapter five.

Engagement markers are utilized to involve readers in the text by either focusing their attention or including them as participants in the stretch of discourse. Readers are involved in the text by using devices such as the reader pronouns (you, your, inclusive we) and interjections (by the way, you may notice, rhetorical questions, imperatives, obligation modals, and reference to shared knowledge (Hyland, 2005). Engagement markers were also used by poster authors, though, in a relatively less proportion than other textual devices. 57 occurrences were found representing 8.1% out of the total interactional textual resources and 2.4% out of the total textual resources, with an average of ( $M = 0.6$ ) used per each single poster. Directives in particular signaled by obligation models and predicative adjectives of necessity/importance were the most frequently used subtype of engagement markers (examples 38 through 40), followed by rhetorical questions (examples 41 and 42) and inclusive first pronouns in some instances (examples 43 and 44).



38. In closing, it's fair to say that to effectively reduce this phenomenon, the blinding mask that is the hefty financial reward *must* be removed. (poster 43)

39. Further research *needs to* be conducted on this topic to find further solutions to it. (poster 48)

40. Regarding the theoretical part, *it is recommended* for future researchers to not collect data in a short time and to use more than two different types of educational institutions around Egypt. (poster 65)

41. What is a Social story?

How is it effective? (poster 72)

42. Does 13 Reasons Why encourage or discourage teenagers to commit suicide? (poster 85)

43. The deaf community needs *us* to listen to them the way they are able to communicate with *us*. (poster 66)

44. It is recommended that institutions shed light on the value of *our* mother tongue. (poster 77)

Engagement markers are among the interesting textual interactional devices that authors may use to interact with their readers. By utilizing such engagement markers, authors enter into a dialogue with their potential readers. As shown in the analysis, to draw the readers' attention, the poster writers went to call upon them, ask them rhetorical questions, make recommendations, or urge them to take a specific action. Although the engagement markers came as the fourth recurring interactional device, only before the last, yet their use reflect an avid interest of those young writers to establish a vigorous discourse.

Self-mentions are realized in the text by the use of first-person pronouns and possessive adjectives (e.g., I, me, mine, exclusive we, our, ours) to overtly signal the presence of the author

in the text. According to Hyland (2001, 2005), it is a deliberate choice by writers to adopt a particular stance and indicate authorial identity. In the corpus examined for the present study, self-mentions are the least recurring textual metadiscoursal resource ever used by the participants; only one instance of self-mention was found in the 100 posters (example 45) representing only 0.1% of the interactional resources.

45. This research conducts a through investigation in the possible reasons behind suicide, *we* achieve that by linguistically analyzing the content of suicide notes. (poster 50)

It is no surprise at all to notice that absence of self-mentions in multimodal ensembles written by young researchers. Avoiding the use of first pronouns is among the basic commandments that instructors of academic writing courses used to give to their students over years to maintain objectivity. And although the conventions have become less relatively rigid regarding that canon, especially the use of the first pronoun *I*, the majority of researchers, especially younger ones, still seem not bold enough to articulate their ego in the text.

#### ***4.2.2 Visual Interactive Metadiscoursal Resources***

As previously mentioned, an academic poster is a multimodal genre that is composed of more than one mode, mostly text and visuals. In section 4.2.1 and its subsections, the results of the textual analysis were reported to partially answer research question 1 about the common textual and visual metadiscoursal resources characterizing academic posters produced by first-year composition students. In order to address the second part of the question concerned with the visual metadiscoursal resources, the results of the visual analysis will be presented in this section adopting the same framework used for the purpose of the present study (D'Angelo, 2016a).

According to D'Angelo (2016a), certain interactive resources, namely information value, framing, connective elements, graphic elements, and font, all serve to organize information and guide the viewer in the comprehension of the poster. According to the visual analysis of the sample under investigation, all the five above mentioned elements were used in all posters except for graphic elements which were used in 96 posters out of the total 100 posters analyzed; thus only four authors did not make use of that visual element. Table 4.4 below shows the number of occurrences of each category, its percentage as per the total visual resources used, its mean per the single poster (M), and the standard deviation (SD) to look into how poster authors vary in their visual preferences used.

**Table 4.4**

*Distribution of Visual Interactive Resources*

Visual resources	No of raw occurrences	Percentage	M	SD
Connective elements	279	28.9	2.8	0.4
Font	224	23.2	2.2	0.7
Framing	197	20.4	2.0	0.4
Graphic elements	164	17.0	1.6	0.6
Information value	100	10.4	1.0	0.0
Total occurrences	964		9.6	1.3

As shown above in table 4.4, the most recurring visual elements used are connective elements (M = 2.8) (SD = 0.4), respectively followed by font (M = 2.2) (SD= 0.7), framing (M = 2.0) (SD= 0.4), graphic elements (M = 1.6) (SD= 0.6), and information value at the end (M = 1.0)

(SD= 0.0), whereas the average use of visual elements as a whole per one poster is 9.6 (SD= 1.3). Worthy of note is that the highest standard deviation can be noticed in the use of font, the second most recurring visual element used (M = 2.2), which signifies a noticeable variation amongst authors in using that feature. No variation, however, was found in the use of information value (SD= 0.0), the feature which holds the lowest mean (M = 1.0).

In the following subsections, a detailed analysis will be presented for each visual element supported by illustrative examples selected from the analyzed posters.

#### 4.2.2.1 Connective Elements

A sense of unity or connectedness among the various elements of a poster is realized through connective elements. They are vectors, repetition of shapes, repetition of colors, and alignment which help the viewer to make sense of the flow of information throughout the poster and make relations between its text and visuals. Table 4.5 below shows the number of occurrences of each sub-type of connective elements used.

**Table 4.5**

*Distribution of Connective Elements*

Achieved through	No of Occurrences	Percentage
Vectors	0	0%
Repetition of shapes	79	79%
Repetition of colors	100	100%
Alignment	100	100%
Total	279	28.9

In the sample analyzed, connective elements topped the list with 279 occurrences with an average of 2.8 per a single poster and a low SD of 0.4 reflecting small variation among authors in employing that feature. In the whole sample, no single poster displayed only one feature of connective elements; at least two connective elements were used in 21 posters (21% of the total number of posters), specifically alignment of the text or visuals and repetition of color (figures 4.1 and figure 4.2). In the rest of posters (n = 79), the authors made use of repetition of shapes in addition to the two aforementioned (Figures 4.3 (repetition of bar charts) and 4.4 (repetition of pie charts)). Repetition of shapes included using more than a picture or more than a chart of the same type, either a bar chart or a pie chart (figures 4.3 and 4.4). Vectors were used in no poster.

**Figure 4.1**

*Example of Two Connective Elements (Alignment and Repetition of Color) (Poster 1)*

**THE AMERICAN UNIVERSITY IN CAIRO**  
**The Academy of Liberal Arts**  
Rhetoric & Composition Department

**Soccer players do to get psychological support in Egypt**  
Author: Abdallah Maged, Course Title: RHET 1020, Faculty  
Advisor: Dr. Amani El Shimi

**Problem**  
Soccer players in Egypt do not get psychological support. 🗣️

**Research question**  
How could we help the player to get the psychological support he needs to get?

**Causes**

1. Lack of sports psychologists in teams
2. bad education: people do not have knowledge about sports psychology
3. Mindsets: fans attack the players and do not care about mental health 🗣️

**Effects**

1. Inconsistency of players performance
2. Players lose their confidence
3. In Egypt most of the players require more time to fully recover from the injuries.
4. Weakness of the Egyptian league 🗣️


**Strategies**

1. Counselling (individual and team)
2. Self-help (imagery, self-talk and goal-setting)
3. Use of technology (brain image, mental mobility vehicle)

**Recommendations**

1. Show players studies on the importance of mental health
2. Unity of clubs and the football federation
3. Changing mindsets by education 🗣️

**References**

  
SCAN ME


  
shorturl.at/gjCLV

Figure 4.2

Example of Two Connective Elements (Alignment and Repetition of Color) (Poster 11)

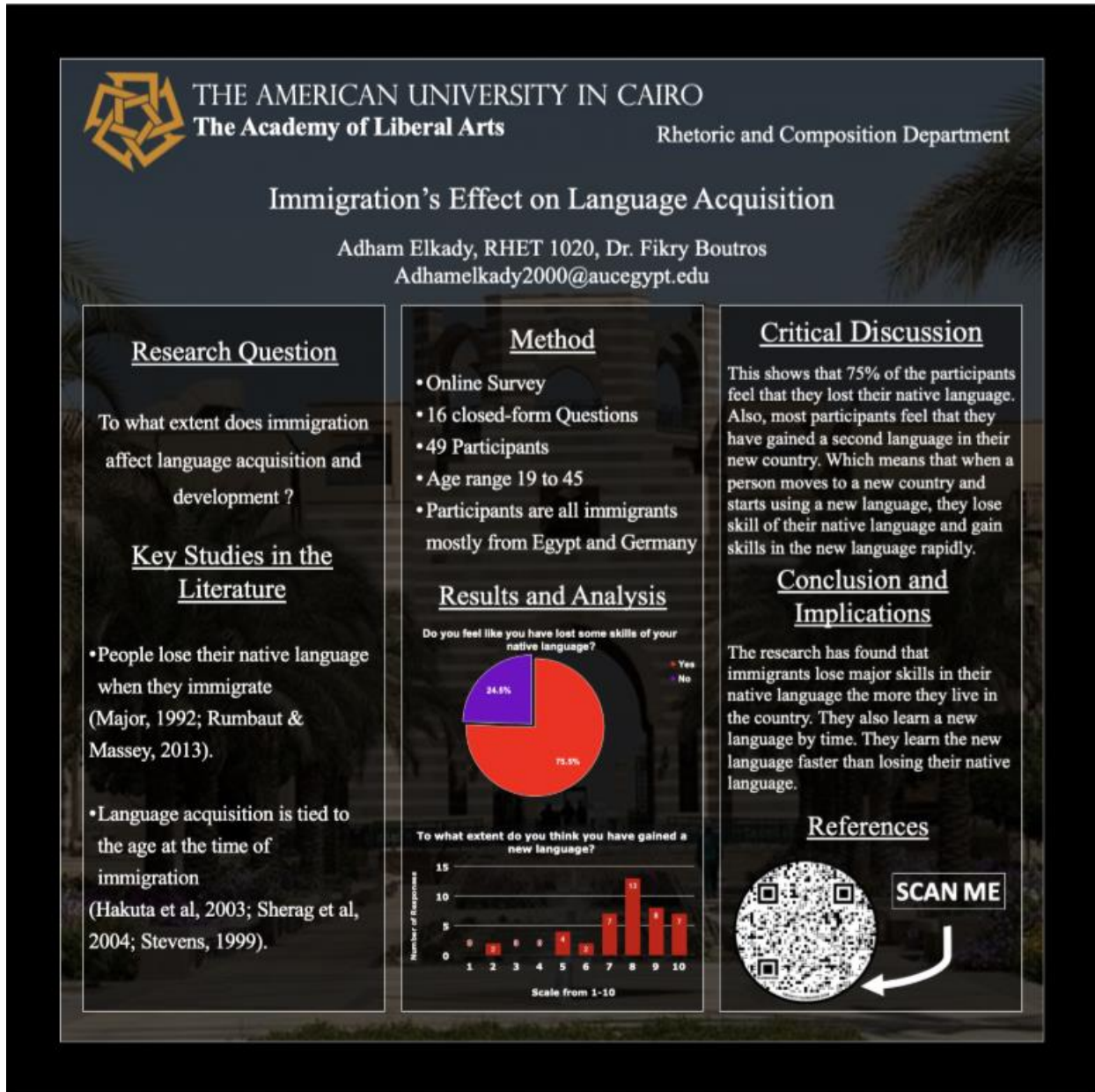


Figure 4.3

Example of Three Connective Elements (Alignment, Repetition of Color and Shapes (Poster 33)

 **THE AMERICAN UNIVERSITY IN CAIRO** Department of Rhetoric and Composition  
**The Academy of Liberal Arts**

**Social Class and Multilingualism**  
Youssef Sharaby, RHET 1020, Dr. Fikry Boutros  
Youssefsharaby@aucegypt.edu

### Research Question

How does the AUC community perceive multilinguals?

### Key Studies in the Literature

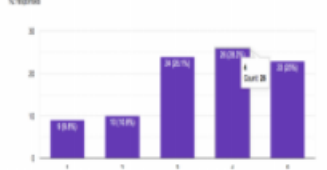
- According to Cenoz (2013), multilingualism is an interdisciplinary concept that serves as a source of comprehension for the study of linguistics.
- Case studies have exemplified a correlation between multilingualism and social by relying on a sociolinguistic theory of language and social class (Snell, 2014; Siu, 1988).
- The findings posed by Espar (2016) distinguish between the global perception that has been bestowed on the world due to globalization, and the process by which individuals tend to perceive their own identity when using more than one language.

### Method

- Online Survey
- 8 questions/ closed and open ended
- 93 participants – 59.8% F, 40.2% M

### Results and Analysis

6. Multilingual (people who speak 2 languages or more) belong to a higher social class



Social Class	Percentage
1	10.0%
2	10.0%
3	20.0%
4	20.0%
5	20.0%

7. There is a positive correlation between intelligence/cognitive abilities and amount of languages spoken



Amount of Languages Spoken	Percentage
1	10.0%
2	10.0%
3	15.0%
4	25.0%
5	40.0%

Respondents found that multilingual individuals perform better, have stronger cognitive abilities, and belong to higher social classes

### Critical Discussion

The findings of both the primary and the secondary research have illustrated an interlinked causality between both social class hierarchy and multilingualism.

### Conclusion and Implications

- Students are expected to gain more from their academic experiences when they are exposed to more languages both in writing and speaking.
- To further examine the correlation between social class and multilingualism, future research should aim to conduct studies on people from different social classes to assess their perceptions of multi-linguals

### References



 **SCAN ME**



Figure 4.4

Example of Three Connective Elements (Alignment, Repetition of Color and Shapes) (Poster 34)

**THE AMERICAN UNIVERSITY IN CAIRO** Rhetoric and Composition Department  
**The Academy of Liberal Arts** Department

## Change in Perception of Body Language

Ziyad Ahmed, Rhet 1020, Advisor: Prof. Fikry Boutros  
ZiyadAhmed@aucegypt.edu

### Research Question

How can people's body language affect the way Egyptians perceive them?

### Key Studies in the Literature

- Body language affects perception of skin color, judging facial expressions, and opponents (Greenlees et al., 2005; Hanneke et al., 2005; Hinzman et al., 2013)
- Age and facial expressions influence reading body expressions (Meadors et al., 2014; Montepare et a., 1999).
- social groups and means of expression change perception of body language (Kret, et al., 2013; Shikanai, et al., 2013).

### Method

- Observation : 14 Egyptian citizens from 18 to 65 years old
- Participants report on their thoughts before and after the experiment

### Results and Analysis

Change in perception depending on the relationship with the researcher and the type of body language

**NORMAL RELATIONSHIPS - POSITIVE BODY LANGUAGE**

Category	Percentage
Positive	75%
Negative	25%

**STRONG RELATIONSHIPS - NEGATIVE BODY LANGUAGE**

Category	Percentage
Positive	25%
Negative	75%

### Critical Discussion

Results show that people with strong relationships are more difficult to encounter a change in perception than people with weak relationships; as it depends on how well they know the other person.

### Conclusion and Implications

It is shown that body language can affect perception; however, it depends on the type of the relationship and how well one knows the other.

### References

SCAN ME

#### 4.2.2.2 Interactive Use of Fonts

Variation in font size, type, and color is among the interactive visual elements recommended for easy readability and better comprehension of the poster. Throughout the sample used for the present study, font is the second frequently used interactive visual element with total occurrences of 224, a mean of 2.2, and a relatively higher SD of 0.7. In examining the use of font as an interactive visual resource, three aspects were investigated: type, size, color. In 50 posters (50%) two of the abovementioned aspects were used (figure 4.5), in 37 (37%), the three aspects were used (figure 4.6), and in 13 posters (13%), only one aspect was used (figures 4.7).

Figure 4.5

Example of Two Font Aspects (Type and Size (poster 84))

 **THE AMERICAN UNIVERSITY IN CAIRO**  
**The Academy of Liberal Arts**

Rhetoric & Composition  
Department

**"Ending The Neglect of Egyptian Homeless Children's Physiological Needs"**

Farida Moharram, Rhet 1020, Fall 2020

<p><b>The Problem:</b> Homeless children in Egypt are a large populous suffering a great societal injustice. Their needs from social, psychological and especially physiological are being neglected</p>  <p><b>Recommendation:</b> Improve and merge pre-existing Egyptian organizations such as: "Banati", "Protecting Homeless Children" and "Children Without a Shelter". by copying techniques found in international programs such as: "Centrepoint" and "Stand Up For Kids"</p>	<p><b>The Impact:</b> -High level of exposure to severe psychosocial stressors. -under-clothed -Foot diseases: calluses, corns, infections, etc.</p>  <p><b>Benefits:</b> -Help more children more effectively by making services more accessible and making said services more diverse -Charity work has proven to help with people's health</p>	<p><b>Challenges:</b> -Number of homeless children is far too high -Lack of proper funding to help these children</p>  <p><b>References:</b></p> 
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Figure 4.6

Example of the Three Font Aspects (Type, Size, and Color) (Poster 88)

**THE AMERICAN UNIVERSITY IN CAIRO**  
**The Academy of Liberal Arts**  
Rhetoric and Composition Department

**The other side of students' academic journey- Extracurricular activities**  
Asmaa Samir, RHET 1020, Dr. Fikry Boutros  
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**Research Question**  
**Extracurricular activities: a necessity or time-wasting?**  
**Key Studies in the Literature**  
- Students' participation in extracurricular activities generates positive outcomes; they appear to have a more positive sense of self, which is particularly vital during their period of development in their life as well as qualifying them to be better candidates in the workplaces (National Education Philosophy, 2019; Rubin et. al 2002).  
- Students are also provided "try on" different identities (Eccles et al. 2003; Eccles and Barber 1999).

**Method**  
- Online survey was filled out by 204 participants; around 8 interviews were conducted to AUC students.  
- Sample: AUC undergrad, males and females.

**Results and Analysis**  
**Extracurricular activities play an essential role for personal development?**

Response	Percentage
Strongly agree	38%
Agree	47%
disagree	15%
Strongly disagree	0%

**The acquired skills from extracurricular activities**

Skill	Count
Leadership	205
Real life skills	180
Time Management	103
Social Opportunities	110

**Critical Discussion**  
It shows that the majority of students agree on the essentiality of extracurricular activities and the acquired skills they gain, which goes along with the literature findings that ECAs provide students "experiential learning" experience and "real-world skills": goal setting, planning for their future, and discovering one's potential (Eccles et al. 2003).

**Conclusion and Implications**  
Extracurricular activities are an important factor for students' development and personal growth by providing them with the needed soft skills; therefore, universities should shed more light on applying ECAs.

**References**

**Figure 4.7**

Example of One Font Aspect (Size) (Poster 85)

**THE AMERICAN UNIVERSITY IN CAIRO**  
**The Academy of Liberal Arts** Department of Research and writing  
Does *13 Reasons Why* encourage or discourage teenagers to commit suicide?  
Rawan Elbadry, RHET 1020, Dr Brooke Comer

<p><b>Research Question</b></p> <p>Does <i>13 Reasons Why</i> encourage or discourage teenagers to commit suicide?</p> <p><b>Key Studies in the Literature</b></p> <ul style="list-style-type: none"><li>- How can a series increase the suicide rate among teenagers?</li><li>- Does the Netflix series encourage or discourage teenagers to commit suicide?</li></ul> <p><b>Theoretical Framework</b></p> <p>This paper is written from a sociological point of view, it discusses a social problem regarding Hannah Baker's dramatic suicide and either the series encourages or discourages teenagers to commit suicide.</p>	<p><b>Main Points of Logical Argument</b></p> <p>Is Netflix series <i>13 Reasons Why</i> is raising awareness or encouraging teenagers to actually commit suicide. Viewers believe that the series is designed to prevent teen suicide by showing the aftermath of Hannah Baker's death. Some others believe it encourages teens to commit suicide by popularizing Hannah after she committed suicide leaving teens yearning for popularity.</p>	<p><b>Conclusion/Thesis</b></p> <p>Is Netflix series <i>13 Reasons Why</i> is raising awareness or encouraging teenagers to actually commit suicide. Viewers believe that the series is designed to prevent teen suicide by showing the aftermath of Hannah Baker's death. Some others believe it encourages teens to commit suicide by popularizing Hannah after she committed suicide leaving teens yearning for popularity.</p> <p><b>Significance to the Literature</b></p> <p>It's very important to recognize the role of Hannah Baker and her influence on teenagers.</p> <p><b>References</b></p>
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#### 4.2.2.3 Framing

Framing is among the most effective techniques through which authors can logically divide and organize their information into clear well distinguished sections (D'Angelo, 2016a). The use of framing could suggest unity and disconnectedness at the same time: elements that are grouped together within the same frame are connected, but meanwhile, they are disconnected from the other elements that are outside that frame. Framing can be achieved through frame lines, empty

spacing, or color contrasts. Framing is the third most recurring visual element in the examined corpus. As indicated in table 4.4 above, 197 occurrences of framing use were identified with an average use of 2.0 for each single poster and a relatively lower standard deviation of 0.4. Table 4.6 below shows the distribution of the three framing techniques (frame lines, color contrast, and empty spacing) within the examined corpus.

**Table 4.6**

*Distribution of Framing Elements*

Framing achieved through	No of occurrences
Frame lines	96
Color contrast	7
Empty spacing	94
Total occurrences of framing	197

As shown in table 4.6 above, three framing techniques were used, though, in various proportions. While the frame lines and empty spacing were almost employed by the majority of participants, the color contrast was rarely used only in seven posters. Moreover, in 87% of the corpus (87 posters), two out of the three framing techniques were used (figure 4.8) while five posters only exhibited the three techniques (figure 4.9). There are only eight posters which did not exhibit but only one feature (figure 4.10).

**Figure 4.8**

*Framing through Frame Lines and Empty Spacing (Poster 81)*

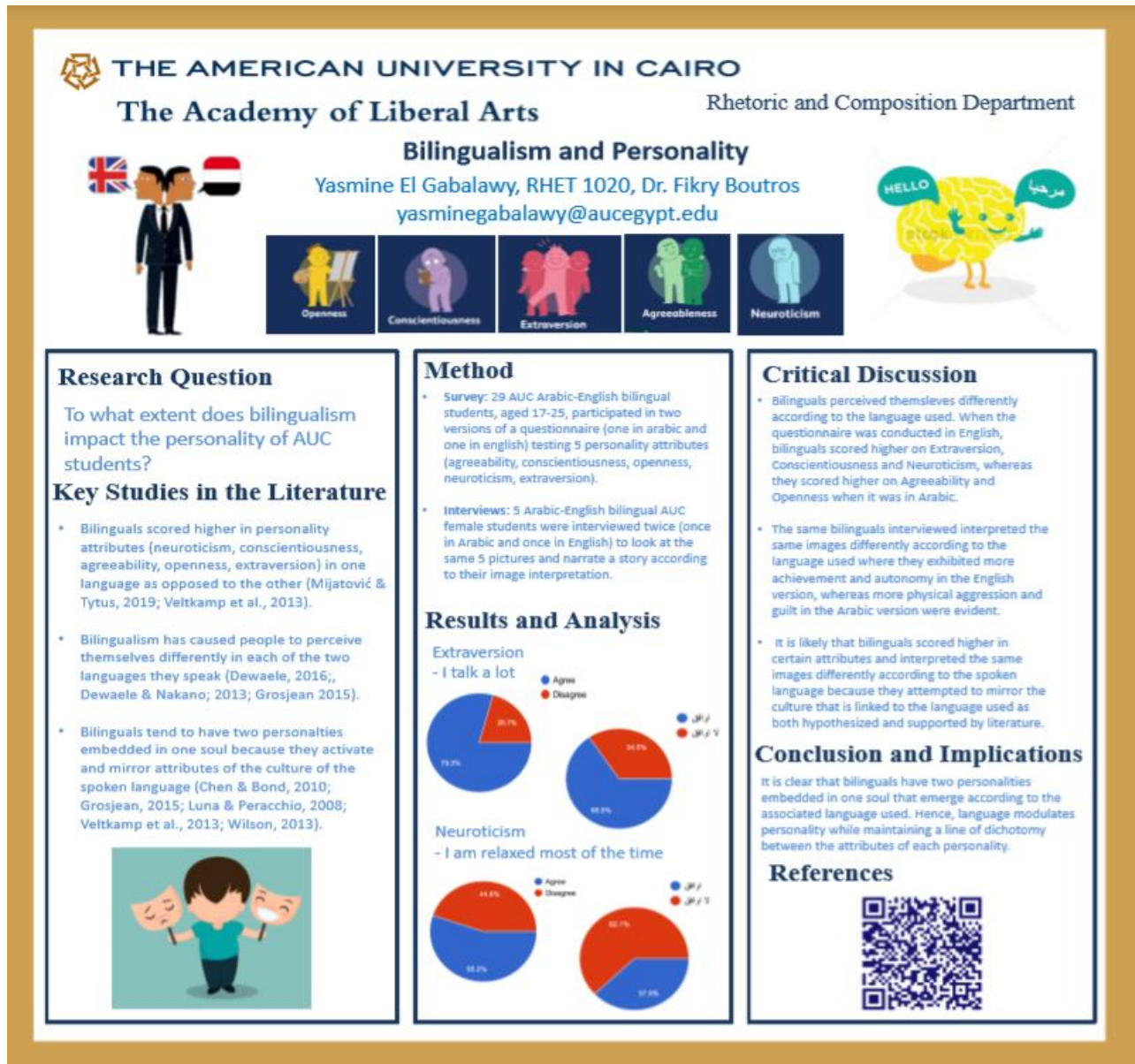



Figure 4.9


Framing through Frame Lines, Empty Spacing, and Color Contrast (Poster 20)



**THE AMERICAN UNIVERSITY IN CAIRO**


**The Academy of Liberal Arts**

Department of Rhetoric and Composition



## The Effect of Speaking Egyptian Arabic Language on the Nouns Perception of the Egyptians

David R. Botros, RHET 1020, Dr. Fikry Boutros  
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### Research Question

What role does the Arabic language have in affecting how the Egyptians perceive nouns?

### Method

- 11-question survey that asked participants to evaluate nouns on the scale of 1 (very good) to 5 (very bad)
- The survey was based on the study by Konishi (1993)
- 42 unilingual Arabic-speaking Egyptians with ages that range between 10 and 60 years old

### Critical Discussion

- The results did not agree with the result of Konishi (1993) as there was no trend for scoring male nouns higher than the female ones.
- This agrees with De Cruz (2009) as the results may be affected by other factors other than language
- Some participants were asked about the reason they chose some scores for certain nouns. They stated that they remembered incidents that happened in the past that affect how they felt about those nouns

### Key Studies in the Literature

- Sapir-Whorf hypothesis states that the language the person uses affect, unconsciously, three main things: nonlinguistic cognition aspects, world perception and view, and the understanding of different experiences (Kay and Kempton, 1984).
- Researchers found out that because the Russian had different words for light and dark blue colors, they were able to differentiate colors better than English speakers (Winawer et al., 2007).
- A tribe in the amazon called the Piraha could not perform simple math tasks as their language lacked words for numbers (Everett and Madora, 2012).
- Konishi (1993) performed an experiment on German and Spanish speakers where they evaluated nouns and found out that they tend to evaluate male nouns to be higher in potency in both language
- De Cruz (2009) argued that Sapir-Whorf hypothesis is not a practically testable hypothesis due to the several uncontrolled social and environmental factors

### Results and Analysis

- The mean of the score for each noun was calculated
- The nouns were separated into two groups (female and male nouns) and plotted on a graph to compare the values between the female and male groups, as shown in figure 1.

The mean evaluation score for each noun





Figure 1- Mean score values (Female in yellow and/Male in blue)

- The graph does not show any obvious pattern or difference between the values of female and male nouns. They all ranged from 1.6 to approximately 3

### Conclusion and Implications

- From the obtained data it can be concluded that language did not play the expected role in affecting the perception of nouns
- Participants tended to evaluate the nouns according to previous experiment not to how the language formulated the unconscious image of the noun.

### References



Scan me



Figure 4.10

Framing through Frame Lines Only (Poster 40)



**THE AMERICAN UNIVERSITY IN CAIRO**  
**The Academy of Liberal Arts**      **Rhetorical and Composition Department**



Personality

**The effect of type of sports on personality**

Omar Farid, RHET 1020, Advisor: Dr. Fikry Boutros  
 Omarfarid7@aucegypt.edu



**Research Question**

In what way does an individual's involvement in a team sport vs an individual sport reflect differently on his personality?

**Key Studies in the Literature**

- Individual sports athletes demonstrated higher levels of conscientiousness and openness, while team sports athletes showed higher levels of extraversion and neuroticism (Allen et al., 2011).
- Team sports athletes have higher levels of agreeableness and sociotropy, while individual sports athletes have higher general autonomy (Nia and Besharat, 2010).
- Cases of self-diagnosed depression and anxiety-related symptoms are more frequent amongst athletes of individual sports athletes (Pluhar et. Al, 2019).
- Athletes of team sports were shown to be overall more outgoing than individual sports athletes (West, 1975).

**Method**

- An Online survey/questionnaire, a self evaluation of personality traits.
- 21 Closed-ended questions.
- 82 athletes; 44 from team sports and 38 from individual sports .
- The athletes were all Egyptian and either from Heliopolis sporting club or AUC.

**Results and Analysis**



**Fig. 1 Mean values for the levels of personality traits of the 2 groups of athletes.**



**Critical Discussion**

- The results illustrated that team sport athletes are indeed more extroverted and outgoing, as they also have higher levels of sociotropy.
- It was also confirmed that individual sports athletes do indeed have higher levels of conscientiousness due to the certain virtues they learn in the individual sports.
- Individual sports athletes were confirmed to be more prone to anxiety-related symptoms probably due to the lonelier and less fun nature of their sports.
- Team sport athletes turned out to be more prone to depression which contradicts the literature.

**Conclusion and Implications**

Overall, the research done shows that there does exist a difference in the personality traits of individual and team sports athletes. Therefore , it is evident that the two different types of sports have different effects on their respective athletes, shaping their personalities in two different paths.

**References**



#### 4.2.2.4 Graphic Elements

Graphic elements are among the most remarkable visual resources that facilitate the presentation of information by providing helpful tools for summarizing or illustrating the content of a poster.

As mentioned in section 3.7.2, D'Angelo (2016a) identified eight types of graphic elements: conversion processes, taxonomies, flowcharts, networks, tables, figures (pie charts, graphs), pictures and schematic analytical pictures. Despite being the most noticeable in the display of posters, graphic elements are the fourth recurring visual interactive resource, only before the last. As indicated in table 4.4, 164 occurrences of graphic devices were identified with an average use of 1.6 and an SD of 0.6. Of the eight graphic devices mentioned above, only two were utilized by the participants of this study,

namely figures, especially pie and bar charts and pictures (figures 4.11 and 4.12).

Figure 4.11

Bar Charts as a Graphic Element (Poster 57)

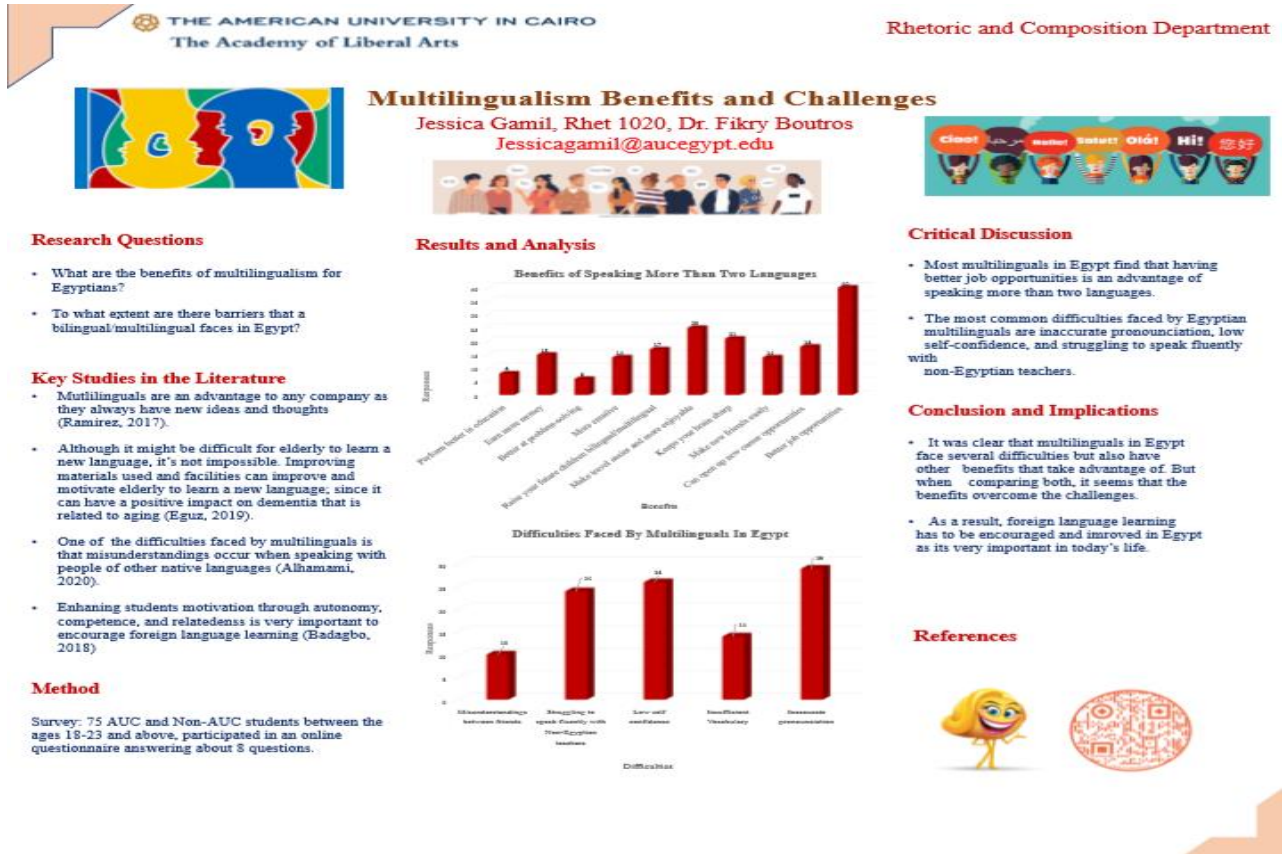


Figure 4.12

*Pie Charts as a Graphic Element (Poster 42)*



#### 4.2.2.5 Information Value

The type of information value, originally based on the Hallidayan notion of theme and rheme or given and new, is determined by the position of elements in the poster, or in which zone of the poster elements occur. Applying the notion of Kress and van Leeuwen (1996, 2006) of given-new information to the layout of academic posters, D'Angelo (2016a) identified the types of

poster layouts as follows: left-right, top-bottom, left-right + top-bottom, center margin, and triptych. All the posters of the corpus under investigation followed the triptych layout in which the poster is divided into three sections or three columns which are organized as follows: column one “Research Question” and “Key Studies in the Literature”, column two “Methods” and “Results and Analysis”, and Column three for the “Critical Discussion”, “Conclusion and Implications”, and “References”. In fact, the students did not have any choice but following that layout as they are required to follow a certain template. Below are two examples showing how information is organized in that triptych layout template.

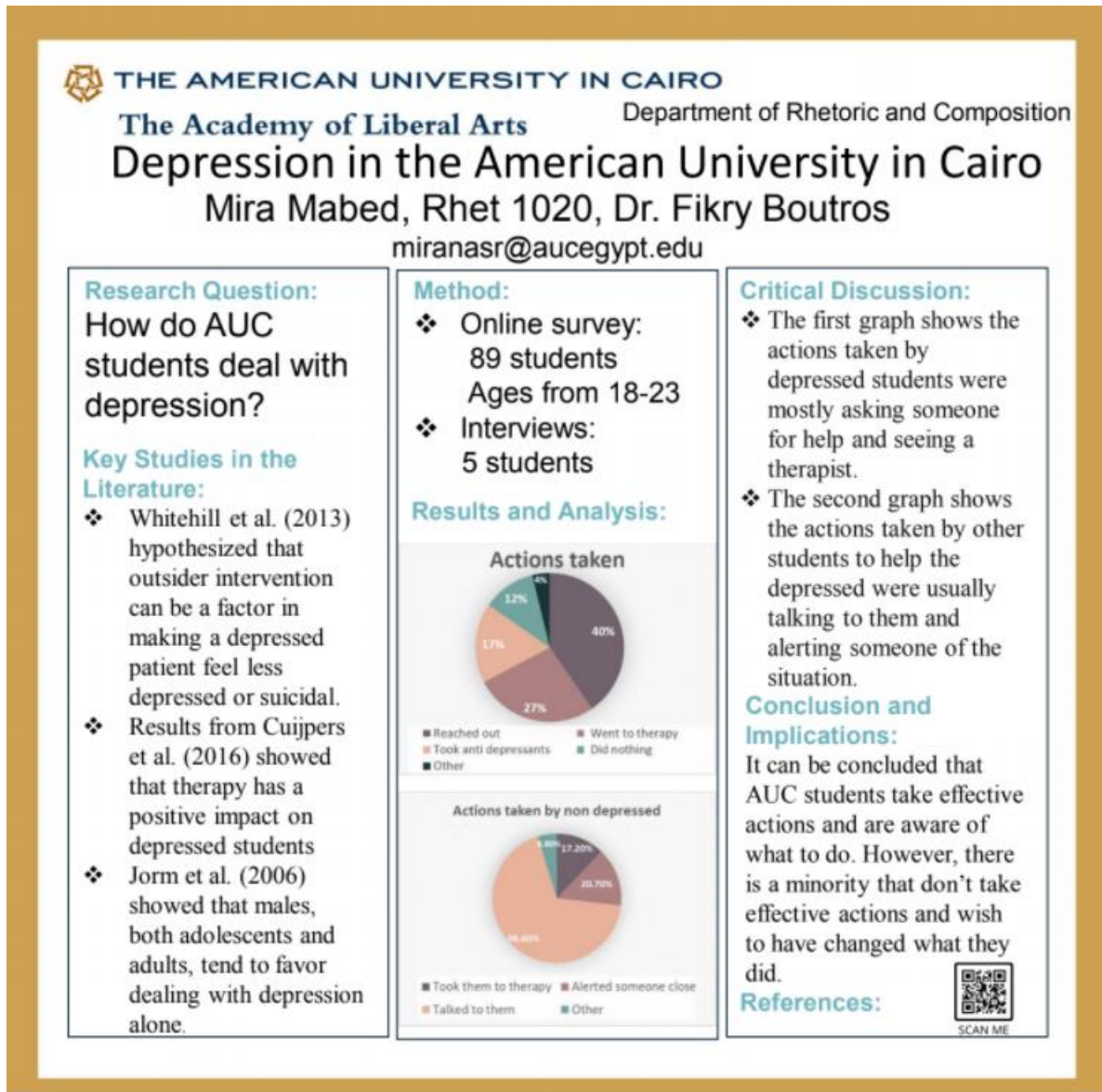
Figure 4.13

Information Value through the Triptych Layout (Poster 79)



Figure 4.14

Information Value through the Triptych Layout (Poster 96)



#### 4.2.3 Interrelation between Text and Visuals

The relationship between the various semiotic resources or how the different modes operate together in multimodal ensembles is the essence of the research into multimodality. To account

for the interplay between the two basic modes operating in posters, text and visuals, another framework was consulted (Maci 2016) due to D'Angelo's limitation to tap into that crucially important area. As previously mentioned, according to Maci 2016, the relationship between text and visuals can be either illustrative, when visuals or text duplicate each other illustrating what has been represented, or stopping-off, when the written text stops abruptly, and the meaning or information is covered by a visual. Almost in all the posters analyzed, the authors tended to represent results through a visual, mostly charts, and then comment either generally or in some detail about what they have found, albeit in the following section (Critical Discussion). Hence, the posters of the present study are dominantly illustrative, or as described by Maci (2016) drawing on Myers-scotton Matrix Language Frame Model (1997), code mixing, interactive relation guiding the reader through the text (Thompson, 2001), content oriented.

#### **4.3 Results of Research Question 2**

To have a closer look at the multimodal writing of novice university students, research question two was designed to explore how novice multimodal writers perceive that special multimodal genre of academic posters. To address that question, self-reported data was collected through a questionnaire and semi-structured interviews. The questionnaire comprised 27 items. While Items 1 through 5 and item 27 are mostly yes or no questions collecting demographic data, items 6 through 26 were measured on a five-point Likert agreement scale ranging from strongly disagree (1) to strongly agree (5). Descriptive statistics was used to calculate the mean and standard deviation of the responses to each item. In addition to the numerical data collected by the questionnaire, interviews were carried out with four students to have an in-depth insight into the perceptions of novice multimodal writers. The responses to the interviews were thematized and analyzed qualitatively. Both the questionnaire and the interviews targeted participants who



took the RHET 1020 course, a research writing course designed for first-year university students, and made an academic poster during that course. The questions of both the questionnaire and the interview were carefully designed following a funnel structure by first tapping into students' general experience with academic posters and their general perceptions of the efficacy of that genre narrowing down to look into their perceptions of academic posters as a different genre, its textual mode, its visual mode, and finally the relationship between its two semiotic modes (text and visuals). In the following sections, each theme will be addressed through the responses to the questions of both instruments to eventually have a clear picture of how first-year university students envisage academic posters as a multimodal genre.

#### ***4.3.1 Students General Experience with Academic Posters***

To tap into the students' perceptions of their general experience with academic posters, items 6 and 7 were specifically designed. Table 4.7 shows the level of agreement with those statements through reporting the means and standard deviation of each item.

**Table 4.7**

*Students' General Experience with Academic Posters*

Items	M	SD
6. I needed more instruction and guidance on how to create an academic poster.	2.9	1.1
7. When I created my academic poster, I was familiar with the visual effects in Microsoft PowerPoint.	3.5	1.1

According to the responses to item 5 (a yes or no question), 57 students (86.3%) revealed that it was their first experience with producing an academic poster. Item 6 tapped into the guidance

they received while doing that task of creating their first academic poster and whether they needed more guidance. As shown in table 4.7 above, the level of agreement is moderate ( $M = 2.9$ ), however with a high standard deviation ( $SD = 1.1$ ) indicating a disparity of opinions among the students regarding that item. The last item tackled the students' familiarity with the visual resources in particular in Microsoft PowerPoint as it was the main software they were required to use. Seemingly the students were quite familiar with that source as the item got a relatively high mean ( $M = 3.5$ ); however, the standard deviation for this item is also high ( $SD = 1.1$ ) which means that there is a noticeable fluctuation of opinions.

Two interview questions targeted the same point of the students' general experience with academic posters. Having been asked about the instructions or guidelines they received before proceeding with the task of producing an academic poster, the four interviewees answered with a "yes" explaining that they received oral instruction and clear explanation of what they were going to do exactly in terms of what to include, how to divide their posters, and the type of visuals they might include to highlight their findings. They further were shown some samples of winning posters and given a template to follow. "Yes, the doctor told us what to do, and he provided us with a sample of previous winning posters. He told us what we should include in the poster, like the key findings of the literature review, some results, the discussion and that it should be visually appealing" (student 1). "Yes, personally, my professor gave us like instructions, with what to include in this poster, it was basically divided into several sections, like we have to put the key findings from our literature review, and our research question, part of the results, with having some charts, the conclusion we reached." (student 2). The four interviewees also maintained that the instruction was adequate and clear and that it was a quite straightforward process: "it was pretty clear ... If we wanted anything, we referred to the sample,

or at least me” (student 1). “It was quite straightforward to the point, I can remember that my first draft had only like spelling mistakes, citations it was very basic” (student 4). Hence, while the responses to the questionnaire suggest that some students may have needed more guidance, the interview responses indicate that the instruction was adequate enough.

Having been asked about the main challenges they encountered during their first experience with creating an academic poster, two students revealed that they did not encounter any challenges: ““Actually I think I didn't face any challenges, like I truly enjoyed this experience” (student 2) .... “I didn't encounter any challenge” (student 4). As for the two other students, one of them said that her main challenge was how to be picky in filtering the content of her paper to select the most important points and what the most appropriate visuals to include in the poster, “The challenge is, I'm personally not someone who, like, acquainted or has an experience with graphics. So I had a hard time choosing how the watermark of the poster should be, what should I add to it to make it visually appealing, what thing should I include from the literature review finding, or what are the most important findings that I should include,” (student 1). The other student revealed that it was just some technical issues relevant to resizing the content in the PowerPoint slide and also to printing the poster: “But the size of the content besides copy pasting from my own paper. You know, pasting with a different format” (student 3). Overall, upon receiving clear instruction and being exposed to some good poster samples, the task seemed clear to the students, and they did not come across big obstacles during the process.

#### ***4.3.2 Students Perceptions about the Efficacy of Academic Posters***

The next group of questions tackled students’ general perceptions about academic posters as effective media of disseminating knowledge within academia. Table 4.8 below shows the mean and standard deviation of the relevant items.

**Table 4.8***Students Perceptions of Academic Posters' Efficacy in Transferring Knowledge*

Items	M	SD
11. Academic posters are a good medium for transferring knowledge within the academic community.	4.1	0.8
12. An academic poster is able to accurately reflect the effort done during conducting a research project.	3.2	1.1
13. Overall, creating an academic poster was a useful experience.	4.3	0.7

Conspicuously, items 11 and 13 are among the three items that received the highest level of agreement throughout the whole questionnaire. This gives a strong indication of the positive perceptions of those novice multimodal writers towards that special genre. As shown in table 4.8 above, item 13 in particular, which asks the respondents to evaluate their overall experience with posters as useful, received a relatively high mean ( $M = 4.3$ ) with a relatively low standard deviation ( $SD = 0.7$ ); indeed, that is the highest mean received as for the responses to that questionnaire.

Three interview questions were designed to tap into the same point, and the responses of the four interviewed students also revealed similar positive perceptions. Two students expressed their strong agreement that the academic poster can be useful in presenting the results of their research projects as it encapsulates what they have written in their detailed research paper: “Yes, I think it's useful because I guess not everyone is interested in reading a 20-page or a 30-page research paper, so, like posters have the key information or what someone needs to know about my

research paper ... or the important thing that I found. And it's also visually appealing, so I guess yes, it's important," (student 1). "It's about summarizing the whole work you are putting all your work in a visual presentation, so it's good" (student 3). The other two students, however, expressed a similar level of agreement with some sort of reservation that it gives a summary of their research but that it is not sufficient to rely on to have an in-depth insight into the research and that whoever is interested to know more about the research should go to read the research paper: "I feel like it's a good as a summary for your research. But you can't just rely on poster. the person will still need, like more in-depth data, so he has to rely on the paper itself" (student 2). Student 4 expressed almost the same view: "Out of the five, I would give it a rating of 3.8 ... because it still highlights what the research tackles and (2) because on the other hand, it doesn't quite depict the effort and what lies behind it". Except for student 4, all the interviewees further assessed their overall experience with posters as useful and that they learnt new things that are mainly related to design, visuals, and selection of the most important information. Student 4 revealed that she did not learn anything new except for learning about the genre itself: "It just I learned that in research the tool of academic poster exists".

#### ***4.3.3 Students Perceptions of Academic Posters as a Different Genre***

4 items were designed to measure the students' level of agreement regarding posters as a different genre. Table 4.9 below shows the mean and standard deviation of the relevant items.

**Table 4.9***Students' Perceptions of Academic Posters as a Different Genre*

Items	M	SD
8. The skills needed for creating an academic poster are the same required for writing a research paper.	2.6	1.0
9. In its design, an academic poster allows for a space of creativity.	3.9	1.0
10. Creating an academic poster according to a certain template restricted my creativity.	3.2	1.1
23. The more unique my academic poster looks like, the more it meets academic expectations.	3.3	1.0

Item 8 in particular touches upon one of the basic notions in the literature on multimodality, the fact that in multimodal genres, language is not restricted to the written text (Serafini, 2013), but other skills may be required. As noted by (Matthews, 1990), seeking no assistance from a professional, the poster author “must function as writer, editor, designer, and artist” (p. 231). The relevant statement (item 8) received a low level of agreement ( $M = 2.6$ ) suggesting that the students tended to disagree with the statement believing that academic posters need other skills in addition to the skills required for writing a research paper. Their beliefs thus tend to agree with what has been established in the literature in this regard. However, the relatively higher standard deviation ( $SD = 1.0$ ) reflects a bit of divergence of opinion around this point among the respondents. The same attitude was almost resounded in the responses of the interviewees as some of them seemed to realize that this genre requires other skills, especially in terms of design, organization, and using a condensed language. “The most important distinction is that the poster has to be visually appealing. I guess what would differentiate a good poster and a bad poster is

its design, not the content. As for the content it matters, but I'm to judge between a good and a bad poster, I would judge by the design, and the organization, the overall neatness. I guess it's all related to design skills" (Student 1). "Okay, so the first thing I would say maybe organization skills like how will you organize your poster How you will divide different sections and so on ... designing and organizing the poster. You have different sections and like sometimes you can't like put a lot of data so it makes it difficult to read you know, you have to make the font clear or use colors which go together so that the reader can read it easily without an effort" (student 2). Student 4, however, thinks that an academic poster requires no additional skills: "But in the end, if I can compare both, I'd say that the academic poster doesn't require any additional skill and it takes obviously less time."

Moreover, items 9, 10, and 23 build on an established notion in the relevant literature on the academic poster that it is not a rigid genre by looking into how students perceive the space of creativity when working with that type of writing. Item 9 which targeted that specific idea received one of the highest means ( $M = 3.9$ ) reflecting the students' tendency to agree that there is a space for creativity when working with academic posters. The next item (item 10) which looked into whether using a certain template limited their creativity received a lower level of agreement ( $M = 3.2$ ) but with a relatively higher standard deviation ( $SD = 1.1$ ).

Finally, item 23 taps into the concept of modality as established by Kress and van Leeuwen (1996, 2006) and adopted later by Maci (2016) which suggests that "an excess of creativity may be seen as non-real and having low modality ... the more the individual is reduced to the general and the concrete to its essential qualities the higher is the modality" (Maci, 2016, pp. 59-60). The level of agreement with item 23 ( $M = 3.3$ ) reflects the students' awareness of that fact that

despite being less rigid than other genres, such as a research article, yet an academic poster is still an academic genre where certain conventions of writing should be observed.

#### 4.3.3.1 Students' Perception of Poster's Textual Mode

This theme and the following one are subthemes of the abovementioned one concerning posters as a different genre. In this subsection and the following one, further insights are unveiled regarding how those novice multimodal writers perceive the two modes, text and visuals, that operate in academic posters. Table 4.10 below shows the level of agreement with the relevant items by presenting the mean and standard deviation of each item.

**Table 4.10**

*Students' Perceptions of Academic Posters' Textual Mode*

Items	M	SD
16. The nature of language used in an academic poster is the same like in a research paper.	3.0	1.0
17. An academic poster should provide all the details of a research paper.	2.2	0.8
20. An academic poster should be self-explanatory or understandable on its own.	4.2	0.7

The results of the above three items are very significant in revealing how those novice multimodal writers envisage the language of posters. In general, the mean of the above items, especially item 17 and 20 gives a strong indication of how those students comprehend how the language of an academic poster should be. They tended to obviously disagree with item 17, which was designed as a misleading item, suggesting that they are quite aware that the language of a poster should be concise and condensed. Notably, this specific item received the lowest mean ( $M = 2.2$ ) across all the responses with a relatively low standard deviation ( $SD = 0.8$ )



which denotes that there is a relatively higher convergence among the respondents about that item. The same attitude was almost reflected in the responses of the majority of the interviewees. Except for student 1, the three other students thought that there is a difference that mainly revolves around density and a high degree of flexibility in the language of posters. Student 3 for example, said that, “in posters, I can just write bullet points, very short sentences unlike the research paper I have to write in proper English with proper grammar. So, Yes, I think they are different.” Student 2 also expressed a similar view that the language of posters may sound a bit different as it may allow for using catchy words: “Sometimes you have to put a word or a symbol like something to attract to grab people's attention. So, like maybe you have a title, which is not professional enough to put it in a paper, but you can put it in a poster ... so a catchy title may be not professional enough to put it on a paper ... other than that I believe no, they are the same.” Student 1, on the other hand, stated that there is no difference in the type of language used in posters and research papers: “I don't think they are different. Or I for myself, I use the same language I used in my research paper in the academic poster, given that they're both academic.” Hence, overall, the majority of participants perceived the language of posters as still in the realm of academia, albeit concise and more flexible.

Further, item 20 suggesting that an academic poster should be self-explanatory, speaking on its own received the second highest level of agreement ( $M = 4.2$ ) with one of the lowest standard deviation ( $SD = 0.7$ ).

#### **4.3.3.2 Students' Perceptions of Posters' Visual Mode**

Visuals play a pivotal role in academic posters. To tap into the students' perceptions of that particular mode, four items were specifically designed. Table 4.11 below shows the level of agreement with the relevant items by presenting the mean and standard deviation of each item.

**Table 4.11***Students' Perceptions of Academic Posters' Visual Mode*

Items	M	SD
21. A table is the best tool to display numerical data in an academic poster.	2.7	0.9
22. A chart is the most suitable way to display numerical data in an academic poster.	3.9	0.7
24. The white color is the most appropriate for the background of an academic poster.	3.1	1.1
25. The more my academic poster uses intense colors, the more it looks academic.	2.3	0.8

Each one of the above mentioned items is designed on the basis of what has been established in the relevant literature on academic posters. Again, students' perceptions of the visual mode of academic posters reflect their apprehension of the nature of that genre. Their perceptions also are in congruent with their practices as attested in the answer of research question 1. Item 21 about the use of tables in displaying numerical data received a relatively low level of agreement ( $M = 2.7$ ) which typically conforms to what has been found in the visual analysis of their posters. No single table was found in the 100 posters analyzed. Their responses to the next item (item 22) confirm what has just been concluded about their apprehension of the nature of posters and that their responses quite conform to their practices. Contrary to the previous item (item 21), this item (item 22) received a significantly higher level of agreement ( $M = 3.9$ ) with one of the lowest standard deviations (0.7). In the posters analyzed for the purpose of this study, charts, whether pie or bar charts, are the most frequently used figure to present results.

The other two items (24 and 25) tapped into the use of color in the background and the intensity of the colors used in general. A moderate level of agreement was indicated with item 24 ( $M =$

3.1), but with a relatively high standard deviation (SD = 1.1) while item 25 about the intensity of color in academic posters received the second lowest level of agreement (M = 2.3) suggesting a very good grasp on the part of those multimodal writers of modality in relation to academia.

#### ***4.3.4 Students' Perceptions of the Relationship between Text and Visuals***

The last group of items in both the questionnaire and the interviews tapped into the essence of multimodal writing, the interplay between the different modes, in such a case text and visuals. Five items were specifically designed to address this theme in the questionnaire and mirrored by five other eliciting questions in the interviews. Table 4.12 below shows the level of agreement with the relevant items by presenting the mean and standard deviation of each item.

**Table 4.12**

*Students' Perceptions of the Relationship between Text and Visuals*

Items	M	SD
14. Visuals (e.g., charts, diagrams, pictures, etc.) can convey the same message presented in a text.	3.8	1.0
15. In an academic poster, visuals have the priority over text.	3.8	0.9
18. I found it easy to balance words & visuals within my academic poster.	3.5	1.1
19. When using a figure (e.g., a chart, a diagram, or a picture) in my academic poster, I find no need to elaborate on the information mentioned in that figure through the following text.	3.1	1.0
26. When using a figure (e.g., a chart, a diagram, or a picture) in my academic poster, I prefer to explain in detail what is mentioned in that figure through the following text.	3.0	1.0

Among the significant results of the above items is the relatively high mean that item 15 received ( $M = 3.8$ ). It reflects the students' perceptions of posters as a visual medium in the first place.

The responses of the interviewees typically correspond with that result. Except for student 4, all other interviewees answered that in a poster, the priority is for visuals as this is what distinguishes a poster from a research paper. "visuals ... Because visuals are what makes the difference between a poster and academic paper. I mean without the visuals, the poster would be like a summary of a research paper, so it would not appeal to anyone." (student 1).

They also show a relatively high level of agreement ( $M = 3.8$ ) on item 14 which suggests that text and visuals can be used interchangeably. A divergence of opinions was indicated in the interviewees' answers about that particular point. While student 1 stated that they can be very close to each other if the language is so vivid in description, student 2 added an interesting angle to the argument by stating that text may be needed to restrict or determine the broad meaning a picture may suggest: "I believe that like, pictures can hold different meanings. So, like, I see that you have to add like, even a short text below the picture so that people understand what you mean" (Student 2). Student 4, on the other hand, stated that no difference exists between the two modes. And by exploring their perceptions of how they generally see the relationship between text and visuals, they unanimously expressed that text and visuals tend to be complementary to each other: "I think they complement each other. As we said, each one of them has its own limitations. None of them can be enough on its own" (student 1).

They also showed a high level of agreement (3.5) with item 18 related to their ability to balance text and visuals in the posters they produced, though with a higher standard deviation  $SD = (1.1)$ , which suggests more divergence of opinions compared to the two other previous items.

Nonetheless, the four interviewees agreed that they encountered no problem in distributing the

roles in creating their posters: “I know that for the results I was gonna use visuals and charts for the literature and the key findings I was gonna write some text and so on” (student 1). Student 3 expressed a quite similar opinion: “It was very easy to decide which is visuals and which is words”.

The last two items (19 and 26) tapped into their preferences when working with the two semiotic resources. Astonishingly, the two items which inquire about almost two contradictory kinds of relationship, whether a stopping-off (item 19) or illustrative (item 26) received almost the same mean and the same standard deviation ( $M = 3.1$ ) and ( $SD = 1.0$ ) and ( $M = 3.0$ ) and ( $SD = 1.0$ ) respectively.

## Chapter 5: Discussion

### 5.1 Chapter Overview

The present study attempted a close investigation of the multimodal writing of first-year university students. In doing so, academic posters were particularly chosen for the sample of the study where textual and visual analysis was carried out to answer research question 1 about the common characteristics of academic posters produced by first-year university students, and self-reported data was collected to address research question 2 about the students' perceptions towards that special multimodal genre. In this final chapter, the major findings of the study are summarized and linked to the relevant literature to see to what extent those findings agree or disagree with the previous studies. Interpretations are also suggested for the major findings in light of the context of the study. The discussion is organized in accordance with the two research questions guiding the study. The chapter concludes with referring to the implications of the study, acknowledging its limitations, and finally, making recommendations for further future research.

### 5.2 Discussion of Results

#### *5.2.1 Research Question 1: What Are the Common Textual and Visual Metadiscoursal Resources Characterizing Academic Posters Created by First-Year Composition Students?*

To answer that question textual and visual analysis was conducted adopting the framework of D'Angelo (2016a) specifically designed for the multimodal analysis of academic posters. The results of the textual analysis indicated that the number of interactive metadiscoursal resources (70.1%) is more than twice the number of interactional metadiscoursal resources (29.9%) with a

significantly high standard deviation ( $SD = 5.3$ ) reflecting a glaring disparity among poster writers with respect to their use of interactive resources.

The relatively larger number of interactive resources compared to their counterparts is not a surprising finding. Quite similar results can be noticed in the relevant literature on academic posters, specifically the findings of the three examined sub-corpora (physics, law, and psychology) of D'Angelo (2011), the clinical psychology sub-corpus of D'Angelo (2016a), and the three investigated sub-corpora (chemistry, speech and hearing sciences, and linguistics) of Li (2014), albeit in various degrees. The ratio found in the physics sub-corpus (D'Angelo, 2011) (69.5 interactive vs. 30.4 interactional) in particular may be the closest to the finding of the present study. Comparing academic posters to another academic genre, namely research articles, similar results were almost reached. In Hyland (1998), the number of interactive resources was found to be almost ten percent more than the interactional (55.1% vs. 44.9%).

However, that particular finding of the present study of having the interactive resources as significantly higher than their interactional counterparts should be read with much caution.

Based on the textual analysis carried out, the number of interactive resources was seemingly enlarged due to the huge number of frame markers used in the analyzed posters. In fact, the way posters are organized in bullet points must stand behind that significantly big number of frame markers, which in turn ushered in a noticeable increase of interactive resources. That typical reason of having a large number of frame markers in the form of bullet points resulting in a considerable discrepancy between interactive and interactional resources was similarly stated by D'Angelo (2016a) when she interpreted the results of the clinical psychology sub-corpus where the interactive resources were found almost five times higher than the interactional. This means that taking those frame markers away or even downsizing their number would result in having

interactive and interactional resources very close to each other which would reflect a tendency on the part of the multimodal writers to maintain a balance between guiding their readers and showing their persona throughout the discourse.

Apart from those frame markers whose use had a considerable influence on the findings of the study, evidentials came as the second recurring interactive device with an average use of 4.0 and a relatively lower standard deviation ( $SD = 1.8$ ). This finding indicates that the poster writers in total were concerned with backing up their arguments with strong support from the literature. This is quite obvious in the first section of the analyzed posters (Key Studies in the Literature) where the students usually include references to the past studies supporting their claims, and sometimes in the Critical Discussion and Conclusion sections where they also relate their findings to the literature. That finding also agrees to a great extent with the findings of Li (2014), in which evidentials were also found as the second recurring interactive textual metadiscoursal resource in the two sub-corpora of hearing and speech sciences and linguistics with a percentage of 15.6 and 17.8 respectively while the fourth recurring, just before the last, in the chemistry sub-corpus with a percentage of 7.8. that particular finding about the frequency of evidentials in the corpus investigated for the present study however contradicts with the findings of D'Angelo (2011, 2016a) where evidentials were found to be the least frequently used interactive textual resource in the three examined sub-corpora.

Contrary to the high frequency of frame markers and evidentials, endophoric markers were found to be the least recurring textual resource; only eight instances were detected throughout the investigated corpus, representing 0.5% of the total interactive resources. This must be attributed to the nature of the poster genre where a text of an average of 300 words on a single slide is displayed; therefore there is no need for the writer to guide the readers or the viewers by pointing



to a specific figure or section. All the sections of the poster are assumingly pretty clear to the viewers. That particular finding typically agrees with what was found in D'Angelo's study (2016a) as endophoric markers came at the last position in the two sub-corpora of law and clinical psychology and before the last in the high particles physics sub-corpus. Very similar results were also obtained through the textual analysis conducted by Li (2014). According to Li's results, endophorics came in the last position in the hearing and speech sciences (3.39%) and in linguistics (6.9%) and before the last in chemistry (12.9%).

As previously mentioned, considering the high frequency of frame markers, which exasperated the number of interactive resources, it would be noticed that interactional devices were also employed significantly by the poster writers. Boosters and attitude markers in particular represent around 60% out of the total interactional devices. That particular result gives a strong indication about how those novice multimodal writers are able to boldly express their views, clearly show their authorial presence, and engage their readers. The frequency of boosters is almost ten percent higher than hedges, which shows how those young researchers are assertive about the findings of their preliminary research. Compared to the results of Hyland's textual metadiscourse analysis of 28 research articles in seven leading journals (Hyland, 1998), those novice multimodal writers seem much more confident about their results than their elder peers where hedges occurred four times more than boosters. But again, much caution should be taken while drawing such comparisons bearing in mind the nature of each genre.

The visual analysis shows that the findings of the present study closely correspond with the findings of D'Angelo's (2016a), the main study guiding this research in which three sub-corpora of academic posters were investigated: high energy particle physics, law, and clinical psychology. Similar to what has been found in the present study, interactive font was the second

recurring visual element in the two sub-corpora of physics (17%) and law (24.2%) while the most recurring in psychology (31.4%). Likewise, framing was the third recurring visual element in the physics and psychology sub-corpora with a percentage of 20.6 and 18.3 respectively, while the fourth in the law sub-corpus with a percentage of 15.8. Closely similar to the finding of the present study, information value came in the last position in both the physics and law sub-corpora (12%, 12.1%) respectively, while before the last in the psychology sub-corpus (13%).

Nevertheless, it should be taken into account that the total number of occurrences is not necessarily an indication of the wide usage of a specific visual element. While some elements are achieved through more than one resource, such as connective elements which can be realized through any or all of four resources (vectors, alignment, repetition of shapes, repetition of colors), other elements are achieved through one resource only, such as the information value which is achieved through only the layout of the poster. While the information value, for instance, which is concerned with the overall layout of the poster (e.g., left-right, top-bottom, triptych) is achieved in all the analyzed posters (100%), it holds the least frequency with only 100 occurrences, and subsequently the least percentage (10.4%) of the total occurrences, and the lowest mean (1.0). The connective elements, on the other hand, realized by vectors, repetition of shapes, repetition of colors, and/or alignment, holds the largest frequency (274 occurrences), representing 28.9% out of the total occurrences used, and the highest mean (2.8). Hence, relying on the numerical data solely is too far from drawing firm conclusions regarding the participants' use of visual resources.

While according to the self-reported evidence collected by the questionnaire and interviews, most of the participants appeared to perceive the academic poster as a primarily visual medium where they responded to item 15 of the questionnaire, which states that in an academic poster,

visuals have the priority over text with a high level of agreement (mean 3.8), and three of the interviewees (75%) acknowledged the same claim, their practices indicate that they may not have made the best use of some available visual resources, specifically

Color contrast as a framing device (only 7 out of 197 occurrences) and font color (only 46 out of 224 occurrences). This finding typically conforms to what the interviewees revealed regarding not touching upon the point of color during the instruction they have received. Overall, the findings of the visual analysis show that in light of the instruction the students received and the resources available to them, they managed to address the goal of multimodal writing.

With respect to the interrelation between text and visuals, as mentioned in Chapter 4, it tends to be illustrative or interactive and content oriented. Thus, coupled with the noticeable large number of interactive textual and visual resources, the posters of the novice multimodal writers examined for the purpose of this study tend to be dominantly interactive, whose writers are primarily concerned with guiding their viewers throughout the posters and facilitate the comprehension of their content.

### ***5.2.2 Research Question 2: How Do First Year Composition Students Perceive Academic Posters as a Multimodal Genre?***

To answer that question, self-reported data was collected via a questionnaire and interviews. A valid response rate of 66 responses was received on the questionnaire while four students participated in the interviews. As will be shown in the following lines, the results of both the questionnaire and the interviews showed no surprises; on the contrary, they tended to agree to a great extent with the findings of other similar studies, what has been established in the relevant

literature on academic posters, as well as the practices of the participants as attested in the textual and visual analysis carried out for the purpose of this study.

The results of both the questionnaire and the interviews revealed that the students tended to have positive perceptions of the academic poster genre believing that due to its condensed form and visual appeal, the academic poster is able to communicate the diligent work done in their research projects and can also be an effective tool for disseminating knowledge across the academic community or at least attract other members' attention to see their research projects. This particular finding strongly agrees with the major findings of the frequently mentioned study of Rowe and Ilic (2009) where 62% of the participants agreed or strongly agreed that posters are a good medium of knowledge transfer within the academic environment. That finding also agrees with Kim and Belcher's (2020) where undergraduate students majoring in different disciplines had generally positive perceptions of a digital multimodal composing task (DMMC), a similar multimodal genre, especially as for its effective role in meaning making).

The students' perceptions of the flexibility of the academic poster compared to other academic genres and the space of creativity it may allow also conforms to what has been frequently stated in the relevant literature. "You can put your creative touch in your poster ... Yes, creativity, I believe, as I mentioned previously, you have to make it visually appealing so that the people get interested to know, read your topic. So like, I feel that a visually appealing poster is linked with creativity" (student 2). This agrees with what has been established in the relevant literature that compared to other genres, such research articles, this is a less rigid genre (Baird, 1991; D'Angelo, 2010, 2018; Maci, 2016; Rowe & Ilic, 2009). "This is an interesting aspect of posters: although their main aim is to inform and persuade readers, they also allow the author a certain amount of creativity, all the while lacking precise and universally accepted poster guidelines"

(D'Angelo, 2018, p. 70). However as explained in the results, the fairly level agreement with item 23, which stated that “The more unique my academic poster looks like, the more it meets academic expectations” (M = 3.3) reflects students’ awareness that despite the space of flexibility it may permit, academic conventions should be observed, which typically corresponds with the concept of modality as explained in detail in section 4.3.3. Hence, the space of creativity is not infinite, they are still academic, not advertisement posters.

Moreover, the students’ perceptions of the textual and visual modes of the academic poster came in congruent with not only what has been unanimously agreed upon in the relevant literature, but conformed to their practices as attested in the multimodal analysis of their posters. The students tended to strongly disagree with item 17 of the questionnaire which stated that an academic poster should provide all the details of a research paper. That item received the lowest mean (M = 2.2) suggesting the students’ grasp of what has been recommended in the literature on the concise language of academic posters, its density in communicating only the key points of research, and that a good poster should speak for itself (D'Angelo, 2010; MacIntosh-Murray, 2007). Worthy of note in this respect is to mention that the average word count of the analyzed posters is 277.1 words, a quite reasonable word count that shows students’ compliance with the recommendations frequently set in this regard.

In a similar vein, as noted in the results chapter, the students’ perceptions pertaining to the visual mode of posters do conform to what has frequently been mentioned in the relevant literature that a poster is a visual medium in the first place (Maci, 2011; Rowe & Ilic, 2009). The relatively high mean (3.8) of item 15, which states that in an academic poster, visuals have the priority over text, strongly agrees with Rowe and Ilic’s finding where the majority of their participants believed that the visual aspect of posters was much more appealing than the text and subject

content. It is worth mentioning in this regard that students' perceptions totally agreed with their practices regarding the use of tables and charts as sub-types of graphic elements, which in turn typically conforms to what is recommended in the literature. To explain further, it is recommended in the literature to avoid tables for displaying numerical data due to their uneasy readability and the need to interpret the displayed numbers and to use charts instead as they are able to communicate general trends and compare results in a clear way (as cited in Maci, 2016). As shown in Chapter 4 of the results, no single table was used in the posters analyzed, only pie and bar charts, and in terms of perceptions, the students showed a significant low level of agreement ( $M = 2.7$  with the item suggesting that tables are the best tools for displaying numerical data while agreed to a great extent, on the other hand, with item 22 (mean =3.9, with the lowest standard deviation ( $SD = 0.7$ ) which states that charts are the best way to represent numerical data.

The generally positive perceptions of those novice multimodal writers of academic posters and their conformity to their practices, the findings of other studies, and the recommendations or what has unanimously been agreed upon in the literature may be attributed to two main factors: the type of instruction they received and the nature of the poster genre. As indicated in the results, specifically in the responses of the four interviewees, a fair amount of time was devoted to familiarize the students with the nature of the poster genre, many samples of good posters were shown to them, and at the end, they were required to work according to a certain template designed by the department. The support the students received in this respect corresponds to a great extent with the pedagogical implications stated by relevant studies on similar multimodal genres, especially in terms of allocating a reasonable amount of time to help students working through their challenges with the multimodal task (Beard, 2012) and providing them with models

of multimodal ensembles with the aim of illustrating the potential of doing such academic tasks in creative and interesting manner (DePalma & Alexander, 2015). This may also touch upon the basic concepts of scaffolding and zone of proximal development set by Vygotsky, the founding father of the sociocultural approach. Simply put, the zone of proximal development is the difference between what learners can do without help and what they can do with help (Hummel, 2014). The template in that context may have played the role of bridging the ZPD. Thus, with their little experience with a genre that is distinctly different from what they used to produce, they were not left to fully work on their own, but rather received quite reasonable support that helped them to proceed smoothly with the task.

Nevertheless, it is crucially important while attempting an interpretation of the results of this study to take into account the nature of the poster genre and to remember that along the multimodality continuum, that ranges from textually dominant to visually dominant texts with blended structures in between (see table 1.1 adapted from Serafini (2013)), the academic poster is likely to be located under the blended structure multimodal forms. Hence the difficulties and the high level of anxiety mentioned by Beard (2012) as usually accompanying the production of multimodal projects are not expected to be experienced in this context. It is almost the same language that the students used to use in their other research papers, though with a bit of flexibility, good summarization and selection skills, and making the best use of the available visual resources, albeit in light with what is accepted in that community to maintain the concept of modality mentioned by Kress and van Leeuwen (2006).

Finally, with regard to the view of those novice multimodal writers of how they perceive the relationship between text and visuals, no firm conclusion can be drawn in this respect as some sort of contradiction was found between the responses to the relevant item in the questionnaire

and their responses in the interviews. While they show a relatively high level of agreement with item 14 ( $M = 3.8$ , which states that visuals (e.g., charts, diagrams, pictures, etc.) can convey the same message presented in a text, they generally acknowledge the relationship between the two semiotic modes to be a complementary where no single mode is assumed to undertake the whole load of representing the meaning. It should be mentioned that in order to elicit the answer to that specific question in the interviews, the researcher had to rephrase the question and maybe provide some explanation and examples to convey the intended meaning. Therefore, part of that contradiction between the responses collected by both instruments may be attributed to the difficulty of the question itself and that it may have needed to be rephrased. Perhaps also that writers in general do not tend to think in such a sophisticated manner and contemplate about such issues; they rather apply what they may think as will be effective in communicating their intended meaning.

### **5.3 Implications of the Study**

The present study sought to extend the burgeoning strand of research on multimodal writing and make a contribution to the scarce literature on academic posters, a genre that is garnering remarkable attention now in linguistic research after it has retained an invisible marginalized second-class status (D'Angelo, 2016a) or regarded as “the poor country cousin of papers” (Swales & Feak, 2000). Due to its pivotal role in promoting research projects, helping researchers to enter into informal discussions on their topics, and connecting researchers, especially younger ones, in networks, a set of recommendations was made to investigate how young researchers in particular acquire the knowledge related to that genre and the resources that may be available to them (MacIntosh-Murry, 2007). The present study attempted to realize that goal by investigating academic posters produced by first-year university students, a cohort of



participants that to the best of the researchers' knowledge has not investigated yet, and exploring their perceptions of that special genre in a deeper manner.

As attested in the results, especially the responses of the interviewees, a great deal of the positive perceptions that the participants hold about the multimodal genre of posters may be attributed to the clear instruction they received and the support provided to them to proceed with the task. A reasonable amount of time was allotted to introduce them to that genre, samples were shown to them, and they were required to work according to a specific template, which was found to be very helpful in fulfilling a multimodal writing task which they were to do for the first time. This may to some extent correspond with Vygotsky's concepts of scaffolding and the zone of proximal development (ZPD). Working with a variety of modes or semiotic resources may not be something new to the majority of those digital natives, as termed by Prensky (2001), but bringing that knowledge into an academic writing task may need some sort of scaffolding from the teacher or a peer. Hence, a major implication of this study is that when they receive scaffolding and are exposed to models, novice multimodal writers proceed smoothly with the new multimodal task.

Moreover, the findings of the present study indicated that the participants made a good use of both textual and visual resources, albeit in different proportions. The visual analysis signified that although the students deployed many of the available resources, yet they may have made a better use of some others, particularly the use of color. An important implication in this regard is that in approaching multimodal writing, instructors should help their students to be aware of almost all the available resources that they may use to communicate their meaning.

In sum, the academic poster is a crucially important genre that all students and researchers, novice and graduate, are requested at some point to produce and present. Hence, that genre should be incorporated as a basic component in academic writing courses, and instructors should scaffold their students as much as they can and raise their awareness with all the available semiotic resources that can be deployed for making meaning.

#### **5.4 Limitations of the Study**

No effort has been saved to make this study a significant contribution to the limited body of literature on academic posters. However, no research whatsoever is without shortcomings. In this section, some of those limitations will be acknowledged hoping if they can be addressed in other future studies. First of all, since the sample collected for the purpose of this study is convenient, the findings of this study are not to be generalized by any means. Secondly, a major limitation of the present study is that most of the participants, whether the respondents to the questionnaire or the interviewees, have almost been taught by the same instructor, which should have an impact on the findings of the study. Furthermore, given that the search to identify the textual metadiscoursal resources has been carried out manually with no assistance from corpus software, the exact numbers of the use of each lexical metadiscoursal item was beyond the scope of this study. A further corpus-based study may be required to fill that void. Furthermore, as acknowledged by Hyland (2005, 2018), the designer of the metadiscourse model adopted for the textual dimension of the framework guiding this study, no taxonomy whatsoever will be able to do more than partially describing “a fuzzy reality”, the clear-cut boundaries between categories or even between metadiscourse and propositional meaning have no existence. Hence a probability of error should not be disregarded. Last but not least, more studies are needed to

extend the line of research on multimodal writing, an area which has become indispensable especially for today's digital natives.

### **5.5 Recommendations for Further Research**

Despite its wide prevalence especially in conferences and congresses, the academic poster has yet received little attention (D'Angelo, 2018). The present study sought to contribute to the scarce literature on academic posters by focusing on the production of novice multimodal writers. The line of research in this area can be expanded to compare the findings of this study to one about graduate or professional multimodal writers. Also, other variables, such as gender in particular, need to be examined to know for example to what extent gender differences may affect the textual and visual choices of multimodal writers. Finally, addressing one of the limitations of the present study, a further quantitative corpus-based study may be carried out to identify the specific number of each textual device in particular. Generally speaking, the field of multimodal research is still a fertile soil that needs to be enriched with further research.

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## List of Appendices

### Appendix 1: A Copy of the Questionnaire

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#### Part I: Demographic Data

The aim of this section is to collect demographic data to be documented in the study.

1. I have taken the RHET 1020 course.

Yes

No

2. If yes, please specify which semester.

Fall 2020      Spring 2020      Fall 2019      Spring 2019      Fall 2018      Spring 2018      Fall 2017      Spring 2017      Other

3. Please specify your gender.

Male

Female

#### Part II: General Perceptions towards Creating Academic Posters

The aim of this section is to explore your general perceptions towards creating academic posters.

4. I have created an academic poster while taking the RHET 1020 course.

Yes

No

5. It was my first time to design an academic poster in the RHET 1020 course.

Yes

No

6. I needed more instruction and guidance on how to create an academic poster.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

7. When I created my academic poster, I was familiar with the visual effects in Microsoft PowerPoint.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

8. The skills needed for creating an academic poster are the same required for writing a research paper.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

---

9. In its design, an academic poster allows for a space of creativity.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

10. Creating an academic poster according to a certain template restricted my creativity.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

11. Academic posters are a good medium for transferring knowledge within the academic community.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

12. An academic poster is able to accurately reflect the effort done during conducting a research project.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

13. Overall, creating an academic poster was a useful experience.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

### **Part III: the Academic Poster as a Multimodal Genre (Words and Visuals)**

The aim of this section is to look into your perceptions of the textual and visual conventions of the academic poster.

14. Visuals (e.g., charts, diagrams, pictures, etc.) can convey the same message presented in a text.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

15. In an academic poster, visuals have the priority over text.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

16. The nature of language used in an academic poster is the same like in a research paper.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

17. An academic poster should provide all the details of a research paper.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

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18. I found it easy to balance words & visuals within my academic poster.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

19. When using a figure (e.g., a chart, a diagram, or a picture) in my academic poster, I find no need to elaborate on the information mentioned in that figure through the following text.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

20. An academic poster should be self-explanatory or understandable on its own.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

21. A table is the best tool to display numerical data in an academic poster.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

22. A chart is the most suitable way to display numerical data in an academic poster.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

23. The more unique my academic poster looks like, the more it meets academic expectations.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

24. The white color is the most appropriate for the background of an academic poster.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

25. The more my academic poster uses intense colors, the more it looks academic.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

26. When using a figure (e.g., a chart, a diagram, or a picture) in my academic poster, I prefer to explain in detail what is mentioned in that figure through the following text.

Strongly disagree                      Disagree                      Neutral                      Agree                      Strongly agree

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27. For enriching this study with further understanding of students' experience with academic posters, relevant interviews will be carried out. Will you participate in that interview?

Yes, I will

No, I will not

Maybe

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## Appendix 2: A copy of the Interview Questions

### 1. General experience

1. When you were assigned the task of creating an academic poster, Did you receive specific guidelines or explanation of what you were going to do exactly?

And to what extent did you find them adequate?

2. What were the challenges that you encountered during creating your academic poster?

### 2. General perceptions

3. In your opinion, to what extent may an academic poster be useful in presenting the results of your research project?

4. In general, do you think that academic posters are good tools for transferring knowledge within the academic community?

5. How do you evaluate your overall experience with academic posters? Were they useful? waste of time? Have you learnt new things? If yes, what are they?

### 3. Students' perceptions of academic posters as a different genre

6. Is creating an academic poster different from writing a research paper? Or in other words, does it need to other skills in addition to the writing skills? If yes, what are those skills?

7. To what extent was sticking to a specific templet useful in designing your own academic poster?

Did you feel at some point that it restricted you?

8. How can you describe the space of creativity in creating academic posters? I mean is there a space for creativity when producing academic posters?

And is it limited or unlimited?

4. Students' perception of its text mode

9. Do you think that the language used in academic posters should be different from that used in research papers? If yes, in what way? And why?

### 5. Students' perception of its visual mode

10. What are the visuals that are commonly used in creating academic posters?

11. When you created your academic poster, to what extent were you familiar with the visual resources in Microsoft PowerPoint that could be employed in producing your poster?

12. Did you talk with your instructor about the point of the colors that appropriate for academic posters? The background, the font? The intensity of colors?

## 6. The relationship between the two modes

13. In an academic poster, which one has the priority, text or visuals? And why?

14. In your opinion, do words convey the typical meaning a visual (like a picture, a chart, a diagram) conveys?

15. Do you think that there is limitations for each mode (and by mode I mean text, visuals, sound, gestures, etc.)?

16. In an academic poster we use text and visuals, right? How do you see the relationship between them?

Do they work independently or do they complement each other?

17. When you created your academic poster, in the RHET 1020 course, was it easy for you to divide the labor between text and visuals, or in other words to specify which part would better be expressed through words and which part would you express through visuals?

## Appendix 3: IRB Approval



IRB Approval Case #  
2020-2021-054 Noha