The academic poster genre

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Published online on: 25 Jan 2016
Advantages and disadvantages of the academic poster genre

Almost all students or novice researchers, upon entering the academic world, know that eventually they will be invited to prepare and present an academic poster. This task is often met with mixed feelings not only because it is often the entry point into academic life, but also because what the genre entails is not always clear to the novice author (Hay & Thomas, 1999). The poster session itself is often met with mixed reviews both from the participants as well as the viewers, because of several physical limitations, and the fact that still today it considered less prestigious to present at a poster session than at a paper session (Swales & Feak, 2000; Swales, 2004).

De Simone et al. (2001), for example, have noted that the traditional poster presentation can at times be frustrating for authors and can leave them, as well as the audience, with a sense of incompleteness. This negative evaluation of the genre leads De Simone et al. (ibid.) to consider the academic poster as a communication tool that is frequently inadequate for the message it carries. Probably triggering this idea is the fact that each poster generally attracts a limited number of viewers and sometimes not enough attention is given to the poster session by conference organizers. A poster presenter does not have the advantage of having a committed audience and has to compete with other presenters for space, visibility and attention (Morin, 1996a, 1996b), and if poster presenters do manage to attract someone’s attention, they have to accept the fact that in most cases, the interaction will be brief and superficial; a frustrating experience to say the least.

Sometimes instead, the interaction might carry on longer than expected, which is at the same time rewarding and challenging. The possibility to interact personally with an author, with no time limitations, in fact means that viewers are given the chance to pose numerous questions and comments which, if particularly challenging, might put the poster presenter into difficulty. If paper presenters have to endure five or ten minutes of question time, poster presenters are asked to remain available and interact with viewers for one or two hours at a time, sometimes even longer. Staying alert and attentive for such a long time can be tiresome and stressful. Fortunately, as mentioned before, this smaller arena is also traditionally more informal than other sessions. This colloquial, almost intimate aspect of the poster presentation is what makes the genre so unique and challenging at the same time.
A person approaching a poster presenter, if interested, can establish a relationship with him/her, which is undeniably less intimidating than the one taking place at a paper presentation. It is also here that the presenter can engage, if necessary, in longer discussions, describing the work done (or yet to be done), admitting to mistakes and doubts, asking questions and receiving answers from viewers. Finally, it is often here in this smaller academic arena that researchers socialize and the most fruitful networking is done.

Notwithstanding the apparent limitations of the genre, poster sessions do play an important part in scientific conferences, or at least they have the potential to do so for various reasons. Posters, if done well, can become a valuable tool because they enable researchers to display not only completed research work, but also on-going research and preliminary findings, which would often not be accepted for paper sessions. In this sense, the poster genre can be said to have ‘intermediate status’ (Swales, 2004, p.199), a characteristic that distinguishes it from other genres, and makes the poster session an engaging and often highly productive event to participate in.

It is also a type of conference presentation that makes the use of visuals pivotal because, like PowerPoint presentations, posters display text and visuals and are organized in such a way that the viewers are able to ‘glimpse’ the research work of a colleague, having, in this case, the freedom of ‘reading’ the poster at their own speed, of lingering on a specific aspect of the work, a table, graph or picture displayed. Finally, if they wish to, they have the rare opportunity to engage with the author in a one-on-one discussion.

Given the fact that the academic poster comprises a textual, visual and oral component, it can be defined as a multimodal genre (D’Angelo, 2011) that, compared with genres with more rigid structures such as the research article, lacks precise prescriptive guidelines but at the same time allows presenters not only to be creative but also inform and persuade. Already in the early 1990s, researchers realized that the poster genre requires numerous artistic and stylistic skills from the author and is not a genre to be taken lightly:

Integrating text and graphics within a limited space to convey a visual message requires detailed organization. Without professional assistance, the poster presenter must function as a writer, editor, designer, and artist. In displaying scientific information, a poster functions “to give visual access to the subtle and the difficult – that is, the revelation of the complex” (Tufte, 1983); it achieves this function through the pure form of a condensed, high-impact message integrating text and graphics.

(Matthews, 1990, p. 231).

As Purrington (2014) notes, since then numerous programs other than PowerPoint have appeared on the market (e.g. InDesign, LaTeX, Illustrator, CorelDRAW and PosterGenius) enabling researchers to design and format posters with relative ease. These technological tools, however, implicate that the poster presenter has a good command of IT and knows how to utilize these tools correctly.

Another point to consider is that the poster session is a relatively safe place to test the oral capabilities of speakers and the soundness of their research. It is during poster presentations that students and young researchers can, in fact, learn from trial and mistake because they are protected by an informal setting that allows minor mistakes and omissions and that, most of all, allows researchers and students alike to build and strengthen their academic persona.
The technological evolution of the academic poster genre

What also sets the poster genre apart from other, more traditional genres such as the research article is the fact that it is a genre closely linked with technology and is therefore subject to rapid changes and technological innovations (Bach et al., 1993). With the aim of transforming poster sessions into wider, more appealing events, a number of disciplines has been experimenting with different ways of facilitating presentation and discussion of posters (MacIntosh-Murray, 2007). Among them are poster projections followed by two- to three-minute oral presentations, online poster sessions, digital interactive poster presentations (DIPP) and virtual science fairs with online conferencing or weblogs (De Simone et al., 2001; Powell-Tuck et al., 2002).

As De Simone et al. (2001) explain, the DIPP is a PDF version of a traditional paper poster, which is usually projected on a screen during specific DIPP sessions that precede (or replace) traditional poster sessions featuring paper versions of posters. During these DIPP sessions, presenters are asked to project their PDF posters on a screen for three to five minutes maximum, and summarize their research work. The audience present can then look for any poster that interests them during the regular poster session. The chance to take the floor, even for a few minutes, is undeniably precious as it gives presenters the possibility to showcase their work even before the poster session starts and probably attract a greater number of interested viewers as a consequence. During the brief presentation, presenters can enlarge parts of the posters, such as tables, graphs and images so that they can concentrate on certain aspects of the presentation. A DIPP can also be made available online by conference organizers, not only after but also before a conference takes place, so that participants can browse through a database of posters presented (or to be presented) and retain the information they are mostly interested in. DIPPs allow, for this reason, the participation of a much larger audience; they create an interactive presentation and a more effective discussion of scientific data. Because of these innovative features, the audience generally meets these digital poster presentations with wide and enthusiastic acceptance (De Simone et al., 2001).

In comparison, a traditional poster (i.e. printed on paper and showcased on a panel) has severe time and space constraints, because the research work it displays remains available to the public only for the duration of the conference. The fall-out of a regular poster presentation is, therefore, limited and the poster itself is bound to have a short life span. It is the norm, in fact, for a poster that has been presented at a conference to end up either in a bin or on the walls of a department for display before it deteriorates and is eventually thrown away.

Powell-Tuck et al. (2002, p. 261) used the term ‘e-poster’ for a form that resembles a DIPP and is handled and displayed in the same way. Their work is, however, interesting because it provides an initial appraisal of this new ‘technological’ version of posters provided by conference participants attending the e-poster session. As Powell-Tuck et al. (ibid.) write, at a medical congress which took place in 2001, presenters were invited to send their PDF versions of posters to the organizers. As for the DIPP,

Presenters were encouraged to ‘talk to’ the projection as if it were a traditional poster, but could ‘click’ with a mouse onto individual components, perhaps a table or figure, of the ‘e-poster’ and thereby enlarge it to full screen size. A further click of the mouse returned the presenter to the poster format.

(Powell-Tuck et al., 2002, p. 261)
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Delegates attending two e-poster sessions, and a control group attending two simultaneous traditional poster rounds, responded to a questionnaire evaluating the ability of delegates to hear and see well, the posters’ clarity and attractiveness and whether the format of the session was able to capture viewers’ interest and encourage discussions. Finally, delegates were asked if they would respond positively to the use of e-posters in the future. The feedback received, Powell-Tuck et al. (2002) say, clearly favoured the use of e-posters, because they facilitated the viewing of the full content of all posters, they captured viewers’ interest and encouraged discussion.

The fact that an e-poster database makes it possible to carry out a detailed search of a computer-based database of presentations is pointed out by Powell-Tuck et al. (2002), who also believe that post-conference collaboration is enhanced by facilitating e-mail exchanges. This is possible especially when the digitalized poster is no longer just projected on a wall and is instead shown through a computer or LCD screen. In this case, numerous features, such as QR codes, hyperlinks and email addresses that allow instant messaging can be added, enhancing the communication passing between the presenter and the audience (D’Angelo, 2012). Also, the amount of information provided by the presenter is tremendously increased, in this case. For example, e-posters can be quickly scrolled through and viewers can email comments and feedback to presenters immediately, a feature that allows communication and feedback to instantly reach poster presenters, even if they are not physically present or the e-poster session has already closed. Smartphones can scan the QR code displayed on the e-poster to receive further visual, audio or textual data, to note the author’s contact information or to be re-directed to a specific web page. The possibility to hyperlink a poster’s content is particularly useful, because it eliminates the space limitation problem typical of posters (ibid.).

A few years after e-posters started to be used, Rowe and Ilic (2009, p. 5) reported on the development of another interesting and innovative type of interactive poster called ‘MediaPoster’:

In developing the ‘MediaPoster’ concept, we have looked to enable the combined evolution of the DIPP principle and its traditional forebear. The ‘MediaPoster’ aims to combine information technology (IT) with a ‘traditional’ poster appearance, thus retaining the static image and at the same time releasing the full interactive potential of the medium.

Just like the e-poster, the ‘MediaPoster’ is presented on an interactive LCD or whiteboard screen, and displays embedded links to additional information. Like with the e-poster, viewers can select a particular area on the poster and instantly access additional data, images, video and audio material, as well as texts. The novelty in this case is that this additional material opens at the side of the screen, so that the original poster presentation always remains in sight (Rowe & Ilic, 2009). Viewers are not redirected to a webpage, which would force them to virtually leave the poster presentation, but instead remain within the same media, with the original poster always open and accessible. In this case, as Rowe and Ilic (2009, p. 6) have noted, authors are given the chance to ‘assign their own academic “depth” to the medium’. Likewise, readers are free to browse through as much information as they wish, concentrating on a single aspect of the research displayed or retaining all the additional information provided through the hyperlinks. This digital system is currently being utilized by electronic poster software companies such as ePosterLive and is rapidly gaining a wide acceptance by academics (PR Newswire, 2012). What is important to note here is that with
systems such as the one mentioned, the poster session experience changes enormously. Large monitors replace traditional paper posters, and boards are no longer needed. By presenting posters in sequence and on-demand, more posters can be viewed at different times. Also, the strategic use of dedicated workstations allows attendees to find, review and download posters during the entire conference. There are, however, a number of drawbacks to consider when it comes to the use of e-posters. For example, what happens when more than one person wants to look at a poster on an interactive LCD screen? Probably, if a conference participant finds an LCD screen occupied, s/he will avoid approaching the screen because only one person can ‘navigate’ an interactive poster presentation, zooming in and out of the hyperlinks. We see here a genre that was traditionally meant to be open to multiple viewings (imagine a small crowd of people gathering around a traditional paper poster, all listening to the presentation or individually looking at the poster content) becoming instead an exclusive experience. If the author of the e-poster is physically present next to the LCD screen, then s/he might be able to mediate between the needs of multiple viewers, but one viewer will always prevail over another, monopolizing, even if briefly, the discussion and therefore the interactive poster presentation. Also, setting up e-posters might make the costs of conferences rise because of the need for new software and hardware, as well as the costs associated with electronic poster software companies. Meeting these technological and financial demands might not always be possible, especially for conferences in the humanities.

Another dedicated online service is MULTIEPOSTER, but in this case, the procedure to convert traditional posters into digital posters is not always a straightforward one. The poster author attending a conference that utilizes the MULTIEPOSTER system is required to send the PDF or PPT version of the poster, divide it into sections and give these sections a title, as well as a chronological order. The poster is, thus, transformed into a PPT presentation, an important shift in medium that has a number of important consequences for what concerns readability, salience and, most of all, the reading process. The magnifying glass tool is no longer available, because it was deemed ‘confusing’ by the creators of the system, and it was replaced by a guided auto-zoom that guides users into the various poster sections, apparently facilitating reading and enhancing the comprehension of the content. Also, slides are easily embedded with video and audio clips which enhance the presentation’s content. The shift from the poster genre to the PPT genre is a radical one, and the consequences of this change are not entirely positive. As with every PPT presentation, especially if automated, the reader is forced to follow the sequence of the slides and cannot skip unwanted information or quickly browse through the entire poster before deciding on which aspect to focus. The use of a uniform template, moreover, prevents presenters from using key visual elements capable of attracting viewers (cf. D’Angelo, 2012). The presenter in this case has no way to ‘stand out from the crowd’, because each poster is rendered equal (from a cognitive point of view) to everyone else’s. A final negative aspect of this shift is that neither the best practices of poster design nor those of PPT are followed. When assembling a PPT poster presentation, authors are advised to avoid slides overcrowded with text, as this diminishes the retention of information, and might even eventually lead the reader to stop reading the presentation altogether (Alley, 2003; Atkinson, 2005; Doumont 2005).

Another type of medium that sometimes replaces the traditional poster or e-poster at conferences is the website. In this case, presenters choose to construct a website to display their research results or on-going research, as well as additional information in the form of text, pictures and videos. Because of the infinite space a website provides, the amount of information conveyed through such a medium cannot possibly be compared with the limited paper boundaries of the traditional poster. Also the e-poster, with hyperlinks, emails
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and videos, is still bound to two reading levels: the first one being the original poster and the second being the enlarged section of the poster, the PDF file that can be downloaded as supplementary material or the video that can be viewed. Websites, instead, contain numerous reading levels that in turn provide as many hyperlinks and downloadable material as desired. Because of the different nature of this medium, an e-poster/website is capable of containing as much content and information as a research article, if not more. This aspect represents a radical change for poster presenters who are, in this case, given the tools not only to go ‘online’, but to go online with endless space to communicate. Unfortunately, as with the e-poster form, the presentation loses its public aspect because it only allows one viewer at a time, browsing through the website poster at his/her own speed and depth.

A final example of how far the poster genre has come in the past few years, and how the tools available to presenters have changed, are virtual science fairs with online conferencing or weblogs (Powell-Tuck et al., 2002). In October 2006, the New Media Consortium (www.nmc.org) hosted a 12-day international symposium on the impact of digital media. The symposium took place entirely within the virtual world of Second Life (www.secondlife.com), where NMC has also built a virtual campus. On this occasion, poster presenters were not required to physically travel to the conference, but made use of virtual reality to log on to the website, insert proper credentials and use an alter ego to display the poster and interact with any other conference participant who was also online and was interested in the subject. Much like in a real poster session, gigantic posters are displayed in the background, and an alter ego, also called an avatar, moves about the poster and has human features. Interested viewers, who are participating in the virtual conference and would like to hear the presenter speak through his/her avatar, simply need to step closer to the poster and enter the circle, which surrounds the avatar. A viewer can decide to simply hear the presentation or pose questions and make comments.

A virtual conference undoubtedly offers a number of advantages, such as the fact that there is no need to travel far and wide to present at conferences and carry or post large, heavy posters. The cost and burden of travel are eliminated, and there is no risk to damage or even lose a poster. However, to participate in such conferences, one must have a certain amount of IT knowledge, which is not always the case. Also, no matter how similar to real-life the virtual environment is, it can hardly reproduce the atmosphere and sheer excitement that is often associated with these events, thus making networking harder and certainly less natural and spontaneous. One should also take into consideration the fact that the setting up of a virtual conference is inevitably expensive, and this will probably raise conference fees significantly.

In conclusion, these digital versions of poster presentations undeniably offer a number of advantages such as lower conference costs, archival capabilities, additional material provided to attendees, as well as eliminating the burden of carrying a fragile and bulky paper poster. However, technology also changes, sometimes dramatically and not always positively, the way posters are displayed, presented and retained by the audience. Because information retention and a fast spreading of knowledge is the ultimate goal of poster sessions, be they traditional, digital or virtual, hopefully in the near future proper investigations will be carried out on these new media formats.

**Current literature on academic posters**

Although research on new types of digital posters is still in its infancy and should be developed in the near future, thanks to the Internet there is now a considerable amount
of material searchable online on traditional academic posters. This informative material ranges from how-to tips and techniques (Alley, 2003; Block, 1996; Briscoe, 1996; Miller, 2007; Purrington, 2014) to a vast kaleidoscope of downloadable templates. Alley (2003), for example, brings forth examples of good presenters in the hard sciences (engineering in particular), and advocates that an assertion–evidence approach should replace the typical bullet-point format in scientific presentations. Block (1996) lists basic dos and don’ts that are still useful today, regarding the layout and format of posters, their content and their presentation. Briscoe’s (1996) work is another landmark when it comes to preparing good scientific poster and presentations, and is particularly interesting because it focusses mainly on how to correctly handle images, tables and graphs. In Miller (2007) we find useful, hands-on annotated examples of ineffective writing and weaknesses in poster productions, followed by an explanation of how to improve the content and format of presentations. Finally, Purrington (2014) provides an example of fun, easy and direct tips to design a good poster, together with an array of first-hand experiences, meant primarily for students, but not exclusively. All these resources could represent valuable entry-points for EAP teachers to introduce students to a correct use of the poster genre.

Besides the numerous tips on poster construction, there are a number of publications focussing on the use of posters in the workplace, by professionals in various fields. Miracle (2003, 2008), for example, explains how posters can be used to communicate and discuss important decisions between hospital units effectively, yet still informally. Other authors, mostly belonging to the medical field, have also commented on the use of posters in professional settings (see, for example, Hardicre et al., 2007; Keely, 2004), and Nemcek et al. (2009) even considered extending its use to improve patient–doctor communication.

Clearly, the use of posters is no longer limited to the hard sciences or the medical field, but is spreading to other situated practices as diverse as nursing (Boullata & Mancuso, 2007; Briggs, 2009; Campbell, 2004; Halligan, 2008; Price, 2010), marketing (Brownlie, 2007), law (Heller, 1999), psychology (Beins & Beins, 2011; Marek et al., 2002), psychiatry (Singh, 2014), statistics (Moreno & Schollenberger, 1998) and geography (Vujakovic, 1995). An extensive literature also exists describing how, in the past two decades, posters have been utilized as in-class activities at university. MacAndrew and Edwards (2003), in particular, compared the essay against the poster production as a tool to assess students, considering also the workload involved, and the benefits for students and lecturers. A similar analysis has been carried out by Remi and Bolalne (2013), who concentrate mostly on the use of posters to manage and evaluate large classes at university level. Others also provide positive examples of how to use posters to evaluate undergraduate and graduate students. The work by Marino et al. (2000) is interesting because it demonstrates how this genre can positively replace a standard hour exam by probing students’ communication skills as well as their topic knowledge. The positive outcome of the case study is reinforced by students’ encouraging feedback. Orsmond et al. (2002) carried out a study assessing the use of poster exemplars and peer assessment with students, which helped them produce better posters as well as make more informed and objective judgements.

A further example of the varied research carried out on this subject is Billington (1997), who compared students’ achievements in different assessment exercises, demonstrating that by using poster presentation as an assessment tool, next to written and oral exams, it is possible to provide a diversity of assessment strategies so as to assess students fairly and to avoid discrimination. Akister et al. (2000) provide a useful case study describing how the genre can become a valuable tool to develop the skills of social work students to verbally support assessments carried out in the workplace. They also record the interesting feedback
of those students who chose to present a poster vs. those who did not. Finally, Menke (2014) explained how online poster sessions used in class eliminate the need for large rooms (inevitable, in the case of traditional paper poster presentations) on the one hand, and on the other hand, allow one instructor to quickly evaluate a large number of posters in a short period of time.

Another aspect related to academic poster presentations that has been considered is the selection process of posters at conferences. Bushy (1991) presents the sole example available of a research poster appraisal tool (RPAT) consisting of 30 items that aid professionals, teachers and students in selecting, grading and critiquing posters. The habit in the hard sciences of presenting the same poster at different conferences has been investigated instead by Bhandari et al. (2005), who have calculated an alarming 20 per cent duplicate presentation rate between annual meetings in orthopaedics, and call for a stricter guidelines enforcement and a more careful poster selection on the part of conference organizers. Their plea is reasonable and is valid for all scientific fields, because researchers that present the same results at different meetings prevent others from presenting original and possibly important research.

Salzl et al. (2008) have carried out an interview-based study that evaluates the organization and the significance given to poster exhibitions in medical conferences. They documented attendance, analyzed the poster review process and calculated the redundancy of presentations. Their results are particularly interesting because they document a low participation in poster sessions, despite the fact that the research displayed was deemed of great interest by attendees. Furthermore, like Bhandari et al. (2005), they calculated that almost 30 per cent of posters present had already been displayed at other meetings. Wang et al. (1999) researched the publication rate in peer-reviewed journals after papers and posters were presented at three major spine meetings held over a three-year period. Their main finding was that almost 90 per cent of the papers and posters presented at these meetings were published within four years. Other interesting and valuable studies have considered the motivation of authors to design posters (Tulsky & Kouides, 1998), or how much time conference participants dedicate to poster presentations (Wright & Moll, 1987).

Although not numerous, a number of linguistic/semiotic analyses on the poster genre have also started to appear after the pioneering exploration of the genre carried out by Matthews (1990). For example, Morin (1996b), Larive and Bulska (2006) and Nicol and Pexman (2003) evaluate the use of colour, typography and basic design principles in posters to increase readability and create visually appealing scientific posters, whereas Maci (2012) investigates the macrostructure of medical posters and what relevance images have in relation to text. Her multimodal analysis reveals that visual elements are predominant over text, so much so that even methodological aspects and results might be communicated through visual elements instead of text. She also highlights a predominance of tables over graphs and images in medical posters, a custom that seems to be caused by computer-designed visuals. In Maci (2012), instead the diachronic evolution of abstracts in medical posters is analyzed and we see that poster abstracts have changed from narrative to non-narrative style, which marks a significant shift to the IMRD (introduction, methodology, results, discussion) format.

An interesting work that also considers visual communication in posters is one by Rowley-Jolivet (2002) who seeks to identify the recurrent features of the visual dimension in posters. Visuals here are classified and a wide range of meaning-making strategies is revealed. These strategies, she explains, facilitate communication between native speakers (NSs) and non-native speakers (NNSs) of English during conferences, because they rely on a common visual knowledge.
She has also researched extensively the logical connections, discourse structure and rhetorical claims that are found in conference presentations taking place in three different disciplines: geology, medicine and physics (Rowley-Jolivet, 2004). Although she doesn’t address poster presentations directly, her results are worth mentioning because they demonstrate that disciplinary practice, methodology, epistemology and type of data investigated heavily influence visual communication in science.

Shifting the attention to the way posters are perceived and valued by the scientific community, MacIntosh-Murray (2007) takes into consideration, for the first time, the forms, norms and values associated with poster presentations; that is, the poster creation process, the different presentation practices (depending on the disciplinary field) and the way posters are perceived and valued as we move from one discipline to another. Also, Rowe and Ilic (2009) have explored how the academic poster presentation is perceived, addressing, in particular, attitude and opinion items. Their study revealed that the academic poster genre is widely regarded as a good genre for the transfer of knowledge, and constitutes a valid form of academic publication. As the literature mentioned earlier suggests, this is a debatable topic and further analyses focussing on the value and status given to the poster genre in different academic fields are needed. However, given the shortage of empirical studies evaluating the effectiveness of posters (Ilic & Rowe, 2013), this survey provides interesting initial results.

Despite the numerous studies mentioned so far, it seems that a cross-disciplinary linguistic and visual analysis has never been carried out on the genre of academic posters. This lack of data makes it unclear whether certain poster presentation rules and conventions are discipline-specific. Are posters in the hard sciences similar to the posters in the so-called soft sciences? Are there any unspoken rules and conventions that recur within single disciplines and should, therefore, be openly known to novice academics? These are just some of the unanswered questions that still revolve around the eclectic and fascinating poster genre. Because a fast and efficient spreading of scientific knowledge is the ultimate goal of poster sessions, be they traditional, digital or virtual, one can only hope that further investigations will be carried out on this new genre type.

Further reading
Brownlie (2007); D’Angelo (2012); Purrington (2014)

Related chapters
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33 Research blogs, wikis, and tweets

References
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