



Best practice guidelines

WASP (Write a Scientific Paper): Preparing a poster

A B S T R A C T

A poster is a visual communication tool, but crucially, it is absolutely not a research paper directly transposed onto a board. It shows the results of research but it does not explain in detail in the way that a conventional paper does. This paper will explain how poster creation accedes to newspaper article writing theory, while adhering to the IMRAD (Introduction, Methods, Results, and Discussion) format.

1. Introduction

Poster creators must be mindful that research garners attention via an equilibrium of a tripod of forces: authors are keen to publish while readers are overwhelmed and must perforce strictly censor that which they allow themselves to read, simply due to time constraints. The third factor in the tripod is the journal editor, whose main scope is to increase a journal's impact factor by enhancing the quality of the papers accepted for publication.

However, the reality is that a poster is usually presented at a conference wherein the organisers are often keen to accept as many posters as physically possible since accepted posters mean more conference registrations (and payments). This third force is thus somewhat attenuated for poster submission acceptances. However, a poster must still somehow attract attention if it is to be effective – what is worth doing is worth doing well. This paper provides a guide to this effect by acceding to newspaper article writing theory [1].

2. Methods

A poster in a poster session in a large meeting will need to vie for attention with several dozens or even hundreds of other posters, and possibly be just a poster in one session in an event wherein there are several poster sessions. In this situation, a poster must compete keenly in order to be noticeable: it must be interesting and visually slick, and must somehow also stand out. This is crucial, as if a poster garners no feedback whatsoever, it is a waste of the creator/s' time. It is for this reason that a poster must utilise newspaper article guidelines, thus, in effect using economic nudge theory [2] to gently urge passers-by to read the poster.

2.1. Title

The title of the poster is like a newspaper headline, struggling for attention among multitudes, and must be snappy and not only stimulating but somehow also intriguing enough to encourage a reader to read the first sentence, the so-called lead sentence that will determine whether the reader can be nudged into reading the rest of the poster. All

unnecessary detail should be dropped from the outset. A title should be in sentence case and in general, if a title includes a colon, it is likely too lengthy.

2.2. Lead sentence

Following the title, the lead sentence should grab and hook the reader straight away. It is for this reason that a poster should ideally focus on single message. The lead sentence should be part of the poster's introduction, and indeed, the entire poster should follow the IMRAD (Introduction, Methods, Results, and Discussion) which was pioneered by Louis Pasteur in 1876 [3].

2.3. KISS

A poster should not have an abstract, but it may include a very brief reference list and must include a brief list of acknowledgements. A key point that should be borne in mind at all stages in poster construction is the KISS principle: keep it short and simple. A poster is only a summary of a research paper, and not an entire paper or dissertation that must somehow be squeezed and crammed onto a poster. This is, in any case, an impossible task and a thankless one as no one will stop to read masses of text on a poster. Once a poster viewer is attracted, attention will be retained by good design and good science, probably in that order of importance.

A poster should incorporate as little text as the creator can get away with. Reams of text are unattractive – passers-by know full well that they will not be able to read a voluminous amount of text in a poster as there is simply not enough time during conferences. The points to remember are that “simplicity is the ultimate sophistication”, as extolled by the great Leonardo da Vinci and that “perfection is achieved not when there is nothing more to add, but when there is nothing left to take away” as commended by Antoine de Saint-Exupery, the French writer, poet, aristocrat, journalist, and pioneering aviator. The poster's message should therefore be imparted graphically and creatively, ideally with a total count of ≤ 800 words, along with a crisp and clean design that will entice a strolling audience.

Since a poster is not a printed page, there is no extant formal convention in which the content may be presented. For this reason, the

desired reading order should be made crystal clear: an ordered sequence with a logical hierarchy of information. Feel free to make this obvious if necessary by numbering the poster components or introducing arrows to indicate how the poster should be read.

2.4. Practicalities

In practical terms, at a distance of 3 to 4 m, a poster should have a title that is easy to read and should look overall uncluttered, with neat illustrations and text. The temptation to overpack a poster and clutter it with text must be avoided at all costs – blank spaces are absolutely fine, and even restful to the eye. Indeed, elements of different sizes and proportions should be used to prevent reader boredom (e.g. blocks of text alternating with graphics). Dark poster backgrounds should be avoided as this looks unattractive.

The main points should be one-liners in large font, followed by a bit of detail in smaller font sizes, and these should be bullet points for the sake of brevity, at a minimum of 18 point font. Use bold and/or italics for emphasis, but no underlining. Common, simple and readable fonts should be employed. Outré fonts should be avoided. In general, serif fonts are preferable to sans-serif fonts. The former refers to a small line attached to the end of a stroke in a letter or symbol.

Illustrations should be simple and bold. Avoid 3D graphs if at all possible. The inclusion of actual physical objects, glued on to a poster, is actually desirable (if applicable), as this is unusual and will attract attention. All tabular materials should be converted to simple graphs if at all possible.

3. Result

A poster will be effective if it can be read in about 10 min, if gets across the main point instantly (preferably in the title), if it engages you in conversation with other delegates and frankly, if it enhances your network and serves not only as a summary of one's work but also as self-promotion for the purposes of career advancement. A contact email is therefore important and may also be made available as a QR (Quick Response) code for readers' ease. One should also do one's best when creating a poster as a "best poster" award is ideal for one's curriculum vitae.

4. Andreas Grüntzig

A poster is not necessarily a demotion from an oral presentation, and may still herald important research. For example, the German radiologist Andreas Grüntzig (1939–1985) performed the first successful coronary angioplasty, and this was accepted as a poster presentation at the 49th Scientific Sessions of the American Heart Association in Miami in November 1976 [4]. This was one of the most important technological and therapeutic advances in medicine of the 20th century, for which Grüntzig was nominated for the Nobel Prize in Physiology or Medicine in 1978 [4].

5. Common errors

A poster should be relaxing to view and read! Common mistakes in poster creation include:

- Objective/main point not instantly obvious.
- Text is too small.
- Poor quality graphics.
- Poorly organised poster components.
- Jagged edges, chaotic or untidy impression.
- Too much colour (and remember: 8% of males are colour blind).
- A dark or black background.

6. Other considerations

In general, in a conference, an oral presentation is taken to rank slightly higher than a poster. However, if a researcher is a poor speaker, when submitting an abstract, the poster preference tick box is preferable. In any case, a conference's proceedings are published together in one collection.

After submitting a poster application and being accepted, instructions will be sent by the conference organising committee as to:

- Conference dates and times and other relevant additional details.
- The required poster size with height and width clearly specified.
- Instructions for setup including date and time and venue.
- Instructions for timing of poster session, when one is expected to attend the poster for viewing and discussion by a judging panel.
- When the poster must be taken down (or it will be typically discarded).

7. Software and hard copy

For the actual software creation of a poster, one should ideally start and end with the same software, and this may be PowerPoint, QuarkXPress, InDesign, LaTeX, Illustrator, CorelDRAW, Inkscape etc. Templates may be found online and adapted to one's purposes so as to facilitate this process.

Once completed, a poster should be printed professionally, and carried in a carry tube. If travelling by air, it should be hand luggage – lest it is lost en route! If the conference organisers fail to specify how the poster will be mounted, it is advisable to take along adhesive tape, pins/tacks, scissors, Velcro etc. If the organisers have somehow failed to alert you as to any of the points above, it is sensible find out.

8. Presentation

One should be smartly attired when attending one's poster session and one should rehearse presenting the poster. Tips with regard to speaking (general) when standing next to a poster in a poster session are given in another paper in this Best Practice Guideline collection [5, 6].

9. Ineffective

Your poster is ineffectual if it is only visited by competitors who wish to obtain an update on your current work, and your sycophants. If people just glance and hurry past, your poster is ineffective.

10. In conclusion

Do ensure that your poster adheres to the tenets of simplicity, parsimony and elegance, with the main points, the poster's essential content and take-home message, in the title and the main headings. After poster presentation, it is important to incorporate any useful comments that may have been arisen during the discussion, and to write up the research on which the poster is based and to submit it. The publication of a paper is the most important part of the academic curriculum vitae and if research is not published, it is almost as if it has not been done.

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Conflict of interest statement

There are no known conflicts of interest associated with this

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