

A field guide to medical writing training

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Abstract

Teaching medical writing is a varied, interesting, and satisfying role. You might find yourself teaching PhD students to write theses, laboratory scientists to write posters, clinicians to write papers, or professional medical writers to improve their skills. Each of these groups starts with different levels of knowledge and requires different teaching approaches. There is no single prescription for the ideal training course. In fact, to provide maximum benefit to trainee writers, each course will have to be fully tailored to their needs and designed to keep them interested and involved. This article provides ideas to help develop and run effective (and fun) writing training courses. The five main aspects covered are research, planning, developing content, assembling course materials, and managing the training day.

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Effective dissemination of scientific data has never been more critical. Publication of clear, well-constructed papers helps to maintain the standard of the burgeoning scientific literature, and is essential for individual career advancement and building the reputation of institutions. Therefore, effective training of new medical writers (scientists, clinicians, and medical writing professionals) is becoming increasingly important.

This article provides practical tips for anyone who is thinking of becoming a full- or part-time medical writing trainer or for established trainers looking for new ideas. Most of the activities have been tried and tested by me, and some of the notes on things to remember are in here because they are things that I have at some stage managed to forget. When I am running a course on medical writing, I stress the importance of knowing your subject, doing your research, consulting the guidelines, planning your content, and taking care over details. These same

principles are true for creating an effective training course.

Do your research

Like a first day at school, it can be daunting to arrive at an unfamiliar building, negotiate security and reception staff, find the right room, and then embark on a day of training with a group of people that you do not know. Make it easy on yourself – get to know the course organiser(s), keep in touch while you develop the course, ask for the facilities that you need, and then plan, plan, plan, plan. You cannot plan too much. Try and picture the whole day in your head. Make sure that you know what is happening when. You do not need the stress of running round an unfamiliar building looking for an information technology (IT) technician at the moment when your trainees arrive. A training day without surprises makes for a happy trainer.

Before you begin to prepare the course content, get a full briefing from the course organisers – they are there to help you. Very often, one person is in charge of logistics and another in charge of content; in an ideal world you would visit the institution and meet the organisers. In reality this seldom happens, but do not let this put you off getting the information you need. Draft yourself a list of questions and make sure that you get the answers (Fig. 1).

It is important that that you are clear on the client's objectives for the training. Do not just take a verbal brief – write it down and send a confirmatory email. If your course is successful and you are asked to repeat it several times, there can be 'objectives creep'. Review of objectives can keep everything running smoothly.

Then find out everything that you can about the audience. What do they know? What do they not know? What level of information do they need? How experienced are they? Are they students, laboratory scientists, or medical communication

<p>Course objectives</p> <ul style="list-style-type: none">• What are the areas to be covered?• Should there be particular emphasis on one or more aspects that are important to the students or the institution?• How long is the course? <p>The audience</p> <ul style="list-style-type: none">• How many will attend?• What is the scientific/medical/professional background of the trainee writers?• How many do not have English as their first language?• Do they all have the same level of experience in their field?• What are their primary target publications (e.g. key journals and congresses)?• What guidelines and constraints are there on the trainees (e.g. regulatory, journal, house style or industry guidelines)? <p>Logistics</p> <ul style="list-style-type: none">• Who will be the course contact at the training site (you can be very delayed while reception determines that you are a bona fide trainer)? What is the name, department and extension number of your contact?• Who will photocopy your hand-outs? What is their extension number? When do they get into work?• How will the hand-outs get to the training room? Where can you collect them from? When?• Will there be an IT professional on standby before your course starts? If so, what is their name and extension number?• Is coffee and lunch provided? For you? For the trainees?• Will there be everything that you need, such as a computer/projector/flip chart/pens/post-its/Blu-Tac?• What computer operating system are they using? (Linux can be a nasty surprise for Windows-based mortals)• Will you be allowed to use your own laptop or to plug in a USB stick?• Can you have the room set up for group work?• Will the students receive a certificate of attendance? Do you need to give it out? If so, who will provide this? When?• If you are staying overnight before the course who will book the hotel? Does it include breakfast?• If you are travelling overseas, who will book the flights? (Some institutions get advantageous rates and prefer to do the booking); make sure that you book early to get the best rates <p>The venue</p> <ul style="list-style-type: none">• Get a map! Not just how to get to the institution, but also get instructions on what door to use where to park and how to get to reception (very important for big hospitals and research facilities) <p>Feedback</p> <ul style="list-style-type: none">• Will you be given feedback? Do you need to hand out a feedback form? How will this be provided? <p>Fees</p> <ul style="list-style-type: none">• Agree course fees and travel expenses in writing• If you are developing a bespoke course, ensure that your fee covers both planning and giving the course• If you are travelling by air or another potentially costly route and your fare is non-refundable, make sure that the organisers know that you will ask for a refund if the course is cancelled or the date is altered• Make it clear if you will need to arrive the night before and so will have to pass on the costs of bed and breakfast
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Figure 1: Important points to cover when researching your training event.

professionals? Do a bit of method acting – put yourself in their shoes. Your course will be greeted with wild adulation if you adapt it for your audience.

Logistics are the biggest source of stress – try to plan for all eventualities. I travel with all the course material on a laptop, on a USB stick, and as a printed copy. I also email everything to the

organisers in advance. Most organisers say that they have a laptop and projector already set up, but it is surprising how often I have had to use my own laptop or even work from photocopies of my own printout because of IT or other issues. I also take my own water bottle and sandwiches. Some institutions cannot organise a jug of water on a table or lunch for the trainer!

Most training organisers prefer to print your hand-outs for you as it is cheaper (and it is a big burden for you to carry hand-out booklets for up to 30 trainees). However, tracking down these hand-outs and other course materials when you arrive on site can be difficult. Always arrive at the venue with enough time to deal with these logistical issues. If there are none, you might have time for a cup of tea and a break!

The biggest difficulty for most institutions seems to be organising the layout of a room between its use, the night before, and you starting your course at 9 am. Often, furniture must be rearranged before the trainees arrive. Wear clothes that allow you to move tables and chairs without becoming dishevelled. And do not rely on the trainees to help; before 9 am, many trainees appear to be sleepwalking.

Planning your course pays dividends

Have you been to one of those courses where the trainer obviously gives the same course every time? I have sat through many, often wondering about the relevance of the material to me. I have subsequently popped the course hand-out on the shelf and forgotten about it. Random information is not useful; information and examples directly relevant to my daily life – now you have my attention! Of course it is easiest and most time- and cost-effective to develop your ideas once and give the course multiple times. However, to really make a difference for the trainees, each course needs to be carefully tailored to their needs. Be aware that planning a course can take a lot more time than actually giving it – make sure that you allow yourself enough time to develop an outline, slides, hand-outs, and exercises or games. Also build in time to rehearse beforehand – luckily my friends and family are very patient and could probably give most of my courses now!

Develop a detailed outline

A detailed outline helps on many levels. And I mean a really detailed outline – with a time allocation for every element, a clear flow of ideas throughout the day and learning objectives for each activity. One of the most important uses for an outline is as a document for discussion with the client. That way you both know what to expect from the training. I generally ask the person in charge of course content (and any appropriate student bodies or line managers) to sign off on the outline before I develop the course. I find the outline is also very useful as an onsite agenda – it stops individual

sessions overrunning and means you can complete the entire course on time.

Think modular structure

There are going to be elements that are common to all courses and others that are specific to the knowledge level and expertise of the trainees or the requirements of the course organisers. If you develop a series of standard elements that will suit all trainees, then you can mix and match these with bespoke elements for individual courses. This saves time on course preparation and means that on the day you have an easier training day – familiar content is easier to deliver than new material.

An approach that I have found to be successful is: *Do – Discuss – Recap*, which reinforces the training elements several times, without being boring. ‘Do’ is a writing exercise or a game. ‘Discuss’ is a group discussion designed to pull out all the key points from the trainees (a flip-chart and coloured pens are all you need for this) and ‘Recap’ is a PowerPoint presentation or a chat from you, the trainer. I like to use a short PowerPoint presentation so that all the relevant points are covered without too much brain-strain on my part during the day. Slides are also useful additions to a hand-out because trainees can listen to you rather than simply scribble down your slides. Avoid ‘death by PowerPoint’ – drawing pictures on flip-charts remains an effective though low-tech training technique...and is not susceptible to computer crashes, power cuts, and other technical problems. A modular series of *Do – Discuss – Recap* exercises is a valid way to design a training course – the trainees are involved in all stages of the course and the day is livelier and more fun than a series of lectures.

Exercises and games should be designed so that they can easily be adapted to different audiences. If you have more than two or three people in your class, aim for group exercises. The objectives and outcomes of the exercise must be clear to the trainees – if you cannot relate the activity directly to medical writing then do not use it. Exercises should be selected based on an understanding of the needs of the audience; examples of subjects for generic exercises that can be adapted to any audience are shown in Fig. 2. Both for you as the trainer and for the trainees, it is worth mixing modules of ‘heavy’ and ‘lighter’ content throughout the day. Perhaps a session on grammar and style could be followed by an hour critiquing diagrams and posters.

- Planning content for a trainee’s own thesis or dissertation or a scientific paper that they will soon have to write
- Discussing the content of the various elements of a scientific paper
- Writing an abstract for a paper which has had the abstract removed and then comparing it with the actual published abstract
- Rewriting a poor paragraph
- Spotting errors that have been introduced into a congress abstract
- Criticism of published abstracts/posters/graphs and tables/papers

Figure 2: Topics for writing exercises that can easily be adapted to any audience.

Even keen students can find it hard to stay awake during a long training day. To keep their attention focused on the training, design exercises that make them move around. Use teams of different sizes, so desks and chairs have to be shuffled around or appoint spokespeople from groups who have to come up to the flip-chart to report on group findings.

Many trainees find it difficult to write on any subject other than their own specialty. If your audience is trained in health economics, use health economics examples and exercises, but do not try those examples with optical physicists. For exercises that require individuals to write or edit, try the exercise yourself and then allow them twice the amount of time taken by you. If this is too long for the time available, then think again – trainees are very slow at writing in a training situation. Also, always have backup material available – trainees will have differing speeds of working and some may need additional work to keep them quiet while slower students are concentrating.

Many people are extremely worried about being embarrassed in public, particularly those with poor spoken English. Getting trainees to discuss issues in pairs or to mark each other’s work is fun for them without being stressful (and is less work for you than assessing and criticising all their work).

And finally, be cautious about using humour – this may not work with all nationalities, and humour differs greatly between cultures.

Start the day with a writing exercise

Many trainers start by going around the room and asking people their names and research topics. This does not work for me. The trainees probably know each other, but if not, unless they need to know each other to successfully complete the course, this is a slow and uninteresting way to start (especially if there are many participants). I begin by asking everyone to create a name card for their desk by folding a piece of card and then,

using black felt-tip pen, to write their first name in capitals on the front and the back of the card. Once everyone in the group has finished, I ask anyone who was stressed by, or unable to carry out that writing exercise, to raise their hand. Of course no-one does and people often laugh. We then discuss why this task is easy. In this one 5-minute exercise there is everything that you need to know to be a medical writer: you have to understand the subject (most people know their own names), know what you are going to write and how you are going to do it (your name in capitals on a piece of folded card) and follow the relevant guidelines (instructions from the trainer). This activity involves all trainees immediately, starts the bonding of the group, makes a key point about writing, and sets a light-hearted tone. Stragglers who miss it will not be at a disadvantage, as all the ideas will probably be repeated several times during the day. Never start your course using material in hand-outs, just in case the photocopies are unavailable.

Grab their attention after lunch

The period immediately after lunch is difficult. Lunch has a tendency to drag trainees back into their normal daily routines. Do not schedule a presentation from you in the postprandial dip period unless you want to watch people snooze. Instead, start the afternoon with a bit of fun, ideally a short game or a fun exercise relevant to writing skills. For professional medical writers I use a game of *Chinese Whispers* to illustrate the importance of giving and taking an effective briefing. As always, the whispered message becomes more and more garbled as it passes from one person to another. The discussion point is that the final person in the chain would be unable to undertake the writing task because the brief would be insufficient. For scientists and medics, I have a team game to remind them of the basics of writing I hand each team a brown envelope containing a jigsaw puzzle in a box (I use six Disney jigsaw puzzles with 20

pieces each that I got from toy shop.) After a count-down from three, the teams race each other to complete the puzzle in the fastest time. However, I have tampered with all but one puzzle. The team with all the correct pieces and the correct picture on the box usually wins the game. The message to the students is that if you research and plan your article (assemble all the pieces) and have a picture in your head of what you are going to write and how you are going to write it (the picture on the box) AND that the pieces correspond to the picture, then writing is a relatively smooth and frustration-free process.

Take it easy at the end of the day

On a one-day course, plan the most critical content for the middle of the morning. Interactive training is very tiring for trainees and they are often running out of energy by 3 or 4 pm. At the end of the day, do something which requires them to walk and talk, such as a poster walk. To do this you can ask the course organisers to supply up to 10 posters produced by that institution. Using their newly obtained understanding of medical writing in general and of content, structure, and design of a poster in particular, the trainees can assess how well the posters work as scientific communication tools. This useful end-of-day exercise shows trainees that they have learned a lot about medical writing during the training day and are now able to write and design an effective scientific poster. It also demonstrates that many published scientific posters fail to inform the audience effectively and so fail to disseminate the hard-won research results of the author.

Top tips for trainers

Once you have written the course, do not forget to check that you have all the arrangements in place and the tools that you need (Fig. 3). Try not to leave

this to the last minute or you and your computer will be working all night on the night before the course – just when you should be getting some sleep. And this is always when your printer runs out of ink.

On the day of the training course, perhaps the most important tip for success is to *Make Time for You*. Always arrive early; far better to be twiddling your thumbs or to have time to brush your hair and go to the loo than to rush flustered and sweating into a room full of trainees. And do not get so carried away with the wonders of medical writing that you forget to eat or drink. Make sure that you take a bottle of water with you and drink it while the trainees are doing group work. I also carry throat sweets in case I talk too much and my throat dries out! Keen students often ask lots of questions at coffee breaks and at lunchtime, so take care to leave enough time to drink your coffee and eat your lunch.

As you enter the building, note the locations of toilets and fire escapes near to the teaching room and try to remember the way out – you will need at least two of these important places on the day. (I have been stranded for what seemed like hours in the darkened basement of a major London hospital after teaching hours).

A first impression counts, as does day-long comfort, so plan your clothing. Wear a jacket to give a professional first impression, but make sure that you dress smartly with layers of clothing underneath – 20 focused individuals can generate a lot of heat and poor temperature control is common in training rooms. Also, wear comfortable shoes – you might not have a chance to sit down for 8 hours.

Do not forget to introduce yourself and highlight your experience to establish your credentials for the day. It is surprising to me that many trainees turn-up and spend a day or two in a writing skills course, yet have no idea of the competence of the trainer. Certainly, most institutions do not tell

- Laptop containing all slides and material
- Projector if you have one
- All slides and print items on a USB stick
- One clear colour printout of all hand-outs (in case they have to be photocopied at the last minute)
- An agenda with timings and an annotated set of slides and hand-outs for you to use
- Props for games (I often carry 4 small jigsaw puzzles and a roll of A3 poster printouts)
- Essential stationery for any activities (e.g. post-its, pens, Blu-Tac)
- Map & directions
- Travel tickets and money
- Booking confirmation for B&B or hotel if needed
- Water, snacks and any medications you might need

Figure 3: Pre-course checklist.

trainees who the trainer is and why they have been chosen.

Trainees love hand-outs and checklists – but do not be tempted to give these out until the end of the day, otherwise some may choose to leave at coffee or lunch break. Let them know at the beginning of the day that they need to stay to the end to get the hand-outs. Similarly, if the institution provides a *Certificate of Attendance*, do not hand this out until the course ends.

Good luck and good training!

I hope that these thoughts and observations prove helpful to other trainers. Although it is not possible to give comprehensive guidelines for medical writing trainers in an article such as this, you can be sure that the advice and exercises given here have been fully field-tested and definitely work well in a variety of training situations and across a range of audiences.

Author information

Louise Fuller is a medical writer, publication planner, and medical communications consultant based on the beautiful Isle of Mull. Before moving to the wilds of the West of Scotland, she worked through her company (Centreline Creative Solutions Ltd) to provide medical communications services for pharmaceutical companies, medical communication agencies, and charities. In addition, she ran courses in scientific writing and publishing for PhD students, laboratory scientists, and medical communication specialists. She is co-author of: *Conference Abstracts and Posters in Biomedicine: 500 Tips for Success*. Jane Fraser, Louise Fuller, Georgina Hutber. Radcliffe Publishing, Oxford, 2009.