***The structure of a scientific paper***

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| Module 6 | Mentorship in preparing scientific papers |
| Sub-module A | The structure of a scientific paper |
| Length of sub-module | Approximately 1 hour and 10 minutes to 2 hours |
| Sub-module summary | In this next module, divided into two sub-modules, we will focus on mentorship in preparing scientific papers, drilling down to the necessary core research communication skills mentees need to exercise. In this first sub-module we will focus on what the overall structure of a scientific paper looks like, the importance of getting the title of a journal article right and criteria for authorship. You are encouraged to draw on your own (mentoring-related) experiences and the lessons gained from them, during discussions. |
| Equipment, visual aids and handouts (on the day) | PowerPoint projector, screen and laptop  Internet connection  Flipchart paper, pens, sticky notes  Put the **exit cards** up on the wall from the previous day or module (if applicable)  **6A-prep\_structure paper.pptx**  **HO1 cases to distribute.doc** |
| Guidance to facilitating learning activities | **Morning review** (5-15 mins)  Start off with some banter about what you or the participants did the previous evening, for example. Don’t make it about yourself – get the participants talking!  Next stand beside the **exit cards** on the wall and make some overall comments on the frequent themes. Say that you won’t have time to respond to all the cards but you will be commenting on the key ones. Invite further comments from the participants.  Remind participants of the learning contract on **6A-prep\_structure paper.pptx-slide 2** (on animation fade setting) if necessary.  Throughout the sub-module, trainer/s should refer participants to the **four reflection questions** on the wall and at the back of their handbooks. Trainer/s should encourage participants to makes notes in response to these four questions, at regular intervals (not just at the end of the sub-module or day).  **Sub-module summary** (2-3 mins)  Display **slide 3** and verbally present the sub-module summary above to set the scene. It is important that these points are shared with participants from the outset.  **Mini-participatory presentation: Structure of a scientific paper** (10-15 mins)  Using **slides 4-6**the trainer/s can present the key points and ask the questions on the slides to the full group. The questions are highlighted in blue and can be asked first before revealing some suggested responses (on animation fade setting).  The trainer/s might want to spend a couple of minutes asking participants whether a different structure of papers is used for reporting research in their research area for example:   * With the methods section at the end (IRDAM) * With a combined results and discussion section (IMRADRADRAD…) * With a conclusions section at the end (IMRADC)   Ask one or two participants in what order they tend to read the sections of a journal article. It is worth emphasizing that the same person may read the sections of different articles in different orders, depending on factors such as how familiar the person is with the topic and what the main type of information the person is seeking from the article.  Ask participants in pairs to discuss briefly the question on **slide 6**. If the following point doesn’t emerge from the discussion, then make it: a paper should be written such that each part (including each table and figure) is understandable without reading previous parts.  **Case 11: Title troubles** (5-10 mins)  First, trainer/s can select their preferred case discussion method/s for Case 11 from the ‘Guidance for trainer/s section’.  Case 11 is short and simple and so might best be read individually (in **HO1 cases to distribute.doc)** and then discussed briefly (this step may not even be necessary) by the full-group.  The main point is the definition of a running title. This definition appears in the following mini-presentation.  Invite participants to make any notes from the discussion, under Case 11 before moving on to the next presentation.  **Mini-participatory presentation: Title** (3-5 mins)  Display **slide 7** ask participants in pairs to briefly discuss the question on the slide in blue (on animation fade setting). Do not reveal the bullet points yet.  Invite participants to share their pieces of advice with the full-group before revealing the points of advice (on animation fade setting) on the slide.  The trainer/s might want to emphasize that the title of a journal article is very important, as it can determine whether people access and read the article and note that titles should be straightforward, not cute, because cute titles can be confusing.  **Case 12: Authorship decision and Case 13 What’s in a name?** (5-10 mins)  First, trainer/s can select their preferred group discussion method/s for Cases 12 and 13 from the ‘Guidance for trainer/s section’.  Again, as the cases are short, the trainer/s might want participants to work in pairs, assigning one participant Case 12 and the other participant Case 13 so that they can read them individually at the same time and then share their thoughts and suggestions with each other.  The trainer/s can simply ask the full-group what they think is the main point being made in Case 12 i.e. letting someone use a piece of equipment does not qualify one for authorship; this paves the way for the next presentation which addresses criteria for authorship. The author identifier number ORCID mentioned in Case 13 will also be touched upon.  Invite participants to make any notes from the discussions, under Cases 12 and 13 before moving on to the presentation.  **Mini-presentation: Authors and authorship** (10-15 mins)  Before displaying the first slide, invite participants in pairs to briefly discuss and write down at least two questions they have related to criteria for authorship. Note that they will be expected to share some of their questions to the full-group a little later in discussions.  Display **slide 8**and go through the points on the slide.The trainer/s may choose to draw on the following points:   * Whether a person qualifies to be an author depends on whether they have made substantial intellectual contributions to the research, not whether they have physically gathered the data. * Ask participants for some examples of intellectual contributions, for example coming up with the research idea, planning the research, and interpreting the findings. * Qualifying as an author does not depend on rank. A student or technician who made sufficient intellectual contributions should be listed as an author, and even a department head should not be listed if they have not made sufficient intellectual contributions to the research. * The International Committee of Medical Journal Editors’ authorship statement, includes authorship criteria. Invite participants to find **Resource 15** which lists the four criteria in their participant handbook and spend a minute or so reading them. * In addition to listing authors, some journals (especially in medical fields) have a contributor list. The list includes, and states the roles of, all people who contributed to the research, whether or not they meet authorship criteria. * The trainer/s could ask for some examples from the full-group, for example someone who collected data on patients but did not have other roles would not qualify to be an author but would be listed, along as a contributor.   **Mini-presentation: Open Researcher and Contributor ID (ORCID)** (3-5 mins)  Display **slide 9**and go through the points on the slide.The trainer/s may choose to draw on the following points:   * Note that ORCID is basically an author identification number that one can use on everything one writes regarding one’s research. * Note that ORCID can aid especially in distinguishing different researchers who have the same name and making clear that an author is the same person even if the person’s name changes or is presented in a different format (the trainer/s can use some examples to illustrate these points). * If time and Internet permits it can be worthwhile to show the ORCID website, for which a link is provided and to have participants register for ORCID if they have not already.   **Q&A session: Criteria for authorship** (5-10 mins)  Before moving on to the next topic, invite participants to share any questions which remain unanswered related to criteria for authorship, following the previous presentation and discussions.  Invite participants to share their questions with the full-group and encourage other participants to answer each other’s questions as far as possible. The trainer/s of course may need to step in if there are inaccuracies or if a question is proving a challenge for the participants. There might not be time to cover all the questions, so in this instance the trainer/s can offer to cover the remaining ones, during a later section at the end of the day or start of the next day.  **End of day or sub-module reflection** (20-30 mins)  Trainer/s can share a summary of the day’s or sub-module’s activities and the highlights for them as trainer/s. Then invite participants to share their reflections on the day’s or sub-module’s work and impressions of the workshop.  Finish by asking participants to individually fill out exit cards. Display **slide 10** (on animation fade setting) with the instructions. Make sure the colours of the sticky notes or cards correspond with those named on the slide. They can be of any colour, as long as they are of three different colours, and preferably not white. |