Co-creating scholarship through collaborative writing in health professions education: AMEE Guide No. 143

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AMEE GUIDE 143. Research series

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Research series

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Subha Ramani, Judy McKimm, Kirsty Forrest, Richard Hays, Jo Bishop, Harish Thampy, Ardi Findyartini, Vishna Devi Nadarajah, Rashmi Kusurkar, Keith Wilson, Helena Filipe, Elizabeth Kachur

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Kachur
Abstract

This AMEE guide provides a robust framework and practical strategies for health professions educators to enhance their writing skills and engage in successful scholarship within a collaborative writing team. Whether scholarly output involves peer-reviewed articles, book chapters, blogs and online posts, online educational resources, collaborative writing requires more than the usual core writing skills, it requires teamwork, leadership and followership, negotiation, and conflict resolution, mentoring and more. Whilst educators can attend workshops or courses to enhance their writing skills, there may be fewer opportunities to join a community of scholars and engage in successful collaborative writing. There is very little guidance on how to find, join, position oneself and contribute to a writing group. Once individuals join a group, further questions arise as to how to contribute, when and whom to ask for help, whether their contribution is significant, and how to move from the periphery to the centre of the group. The most important question of all is how to translate disparate ideas into a shared key message and articulate it clearly. In this guide, we describe the value of working within a collaborative writing group; reflect on principles that anchor the concept of writing as a team and guide team behaviours; suggest explicit strategies to overcome challenges and promote successful writing that contributes to and advances the field; and review challenges to starting, maintaining, and completing writing tasks. We approach writing through three lenses: that of the individual writer, the writing team, and the scholarly product, the ultimate goal being meaningful contributions to the field of Health Professions Education.
Practice points

- Writing skills are integral to many forms of scholarship and the successful production of scholarly outputs.
- Co-scholarship across institutions and national boundaries is increasingly important as common challenges and opportunities are likely to be encountered.
- Although writing skills can be learned in courses and workshops, collaborative writing teams provide unparalleled practical opportunities to engage in scholarly projects.
- These teams should include members at various stages of their career, across a spectrum of successful writing experiences, representing multiple cultural and geographical perspectives and wisdom. Ideally writing teams are inclusive and diverse.
- Group leaders should focus on establishing psychological safety within the group, form trusting working relationships, and engage in critical self and team reflection.
- A growth mindset is key to anticipate, acknowledge, address, and learn from failures such as rejected manuscripts, not meeting timelines or scholarly outputs that do not meet all expectations.
- Mentoring is the central hub of a collaborative writing team with individuals representing multiple spokes that radiate from the hub. Such a team should prioritise senior-junior, peer-peer as well as junior-senior mentoring.
Background

In Health Professions Education (HPE), scholarly output is a significant mark of academic advancement. Most scholarly output is based on written communication, using a variety of media formats that each have particular styles and advantages. Educators who are successful writers give back to the profession through sharing the impact of their educational initiatives, both successes and failures, build on prior knowledge, and thus advance the field. Their writing can inspire educators to cultivate curiosity, willingness to investigate and evaluate their teaching and educational projects, and commitment to impart new learning. However, early career educators often find it challenging to jumpstart their scholarship as they may not have a structure to start the writing process and often lack guidance. Among those who have published before, writer’s block is not unusual. We believe that writing teams, comprising scholars at multiple stages of their career, can be valuable in motivating the less experienced writers and providing them with a roadmap as well as discrete milestones for success.

Purpose of this guide

The purpose of this AMEE guide is to highlight the value of forming a diverse team of collaborative writers, describe challenges for both individuals and the writing team, and provide theoretical underpinnings for the process of successful collaborative scholarly writing. The guide includes the application of principles to practice, describing practical guidelines to forming and sustaining a collaborative writing team from three perspectives- individual team members, the writing team, and the scholarly product.
Some definitions

A number of terms are used in this guide, most of which are defined and described in detail within specific sections. Some terms are from other disciplines and applied to collaborative writing; we define these below.

- **Collaboration** - When two or more people, groups or organisations work together to complete a task or achieve planned goals, it is referred to as collaboration. Although similar to cooperation, collaboration requires leadership that is typically not authoritarian but egalitarian. It allows a team to access a wider array of resources (financial, infrastructure and expertise) and resulting recognition and rewards are also greater.

- **Collaborative writing** - A team writing together and contributing to scholarly output. The writing could involve a variety of formats such as research and non-research papers, books and book chapters, blogs, educational resources, perspectives, reflective writings, and newspaper articles.

- **Teams** - A team is a group of people who share common characteristics, purpose, and goals. The members need to work together, share resources, knowledge, and skills, and synergise their efforts to successfully achieve their goals. Since projects have a defined purpose and endpoint, members may choose to disband on completion. However, a well-functioning team may choose to continue to work together.

- **Teamwork** - Though teamwork and collaboration are often used interchangeably, teamwork refers to activities where a group of people perform their individual roles to
contribute to the achievement of specified goals. Success depends on the presence of strong leadership that continually directs the team toward the objectives.

- Community of practice (CoP)- This refers to a group of people who share a concern, area of interest or a passion for something they do and learn how to do it better as they interact regularly.

- Community of scholars- This refers to a CoP which shares a common interest in scholarly output and advancing their field. Thus, they work together and engage in scholarship such as conference or online presentations, peer reviewed and non-peer reviewed publications and book chapters. Increasingly, communities of scholars form across institutions and national boundaries, as they encounter common challenges and opportunities. Co-scholarship that includes multiple and diverse perspectives can improve the quality of discussions and outcomes.

- Diversity- When we use the term diversity in this guide, we refer to diversity in many domains that would maximally benefit the writing product. Diversity can refer to a spectrum of writing experience, stages of one’s career, geographical locations, cultural context, varying perspectives, ways of looking at knowledge and constructed reality.

The value of collaborative writing

Whilst writing collaboratively has some disadvantages as discussed below, the benefits outweigh the challenges. If the right team is involved, it can be satisfying and fulfilling, and more likely lead to publication success.
A core value for all is the support provided by other members of the team, particularly important for less experienced writers. Writing for publication can feel very daunting and it is much easier when other people assist and there is an agreed roadmap. Given educators’ competing demands, it can often be hard to maintain motivation and momentum, and the wisdom and experience of senior members and scholars can inspire novice writers. There should be no pressure on individuals to engage in something they have little interest in or time for. A group that acknowledges everyone’s demands and interests will allow individuals to choose the level of participation for a given project.

Professional development and personal growth, as a form of peer learning, are key benefits for everyone. The CoP develops “professional friendships” (Gardiner 1998), utilises members’ strengths and works on areas of weaknesses, experiences interdependent individual and team competence and holds a shared ownership of their output (Ness et al. 2014). A huge personal benefit is learning to write. By that we mean learning the discipline as well as the art of writing. More experienced writers can help novice or less confident writers to develop the craft of writing and guide them in the discipline needed to write productively.

Notwithstanding the stage of career, each member of a writing group can grow as a scholar through collaborative writing and more likely to produce high quality scholarly outputs than if they worked alone. Early and mid-career educators can enhance their curriculum vitae (CV) and advance in their careers, while late-career educators can enjoy ‘giving back’ and nurturing others’ development.

A sense of belonging to a community of writers/scholars is internally motivating and rewarding, coupled with external motivation through seeing oneself in print and advancing scholarship.
Writing for publication helps writers to enhance their knowledge about the topic through researching and synthesising the literature, and a collaboration draws on the knowledge and skills of the whole team, so everyone learns more. Through striving for continual improvement, successes are celebrated as a team and ‘failures’ are used to improve, thus helping to develop the group into a high performing team.

Although larger collaborations can have challenges (addressed below), they can bring together a wider range of diverse perspectives, knowledge, and skillsets from a variety of settings, facilitating comparative studies between very different contexts and cultures, enhancing generalizability or transferability, raising the potential for obtaining research grants, waived or reduced submission fees for some publications, and enabling programmatic research where each study builds on the previous findings.

In summary, collaborative writing offers significant opportunities to network, facilitates writing skills, increases publication outputs and is rewarding for the individual, the community they form and for the discipline (Ness et al. 2014).

**The move towards collaborative writing**

Collaborative writing is not new, it is used as instructional method in schools, colleges, and universities, to encourage students to collaborate on projects and jointly write up reports to stimulate the academic process. Once professionals enter the workplace, the focus is less on “enhancing writing skills” and more on “communicating” data and information to move a field forward. As fields become more interdisciplinary, and scientific and academic work become increasingly complex, some experts predict the ultimate “extinction” of single-authored papers with multi-authored articles becoming the norm (Nabout et al. 2015; Fontanarosa et al. 2017).
Since HPE is a very interdisciplinary field, projects typically require the involvement of professionals from different backgrounds and the inclusion of diverse experts in writing collaborations. Indeed, science publications have been multi-authored for many years reflecting collaborations within large research teams and have established structures and approaches to engaging in collaborative writing (Frassl et al. 2018).

What is a scholarly product and how do we ensure its quality?

When a writing team aims to advance the knowledge on a specific educational concept or topic, they need to consider the quality of their scholarly output and reflect on three elements: (1) standards for scholarship, (2) author guidelines for papers and other publications, and (3) ethical considerations. We describe each of these below.

Standards for scholarship

To move away from a restrictive definition of scholarship in academia, Ernest Boyer proposed an expanded view of scholarship and described 4 categories, listed in Box 1: scholarship of discovery, integration, application and teaching (Boyer 1990). Later, Boyer added the scholarship of engagement, emphasising that scholarship is about sharing knowledge as well as taking into account social, global and ethical perspectives (Boyer 1996). Therefore, the writing team needs to be clear about the definitions and differences in scholarship to be able to focus on specific area (Hofmeyer et al. 2007).

Regardless of the focus of the writing project, there are standards for assuring quality of the work such as the six criteria described by Glassick (Glassick 2000): clear goals, adequate
preparation, appropriate methods, outstanding results, effective communication, and reflective critique.

**Guidelines for authors**

Implicit within Glassick’s criteria is that writers fully understand and appreciate the field in which the writing project is situated. Before starting the project, the writing team should consider whether their project goes beyond their collective passion and interests. Does it address an educational problem important to the rest of the field or fill a knowledge gap that is relevant to practice? If applicable, the writers should consider whether conceptual frameworks can guide their project. Conceptual frameworks are ways of thinking about a problem or a study and can be based on: educational or other theories with principles and propositions from experimental or observational research; educational models proposed by experts underpinned by theories or their own experiences; or best practices derived from evaluation studies (Bordage 2009; Bordage et al. 2016).

**Theoretical considerations of collaborative writing**

In this section, we highlight some core principles for successful and rewarding collaborative writing which would benefit individual members, the entire team as well as the quality of the scholarly product.

**Enhancing motivation**

Self-determination Theory (SDT) classifies motivation as autonomous (intrinsic) or controlled (extrinsic) (Deci and Ryan 2002; Ryan and Deci 2017). Participation in collaborative writing out of passion for the topic, interest in writing and scholarship, and being part of a community are examples of autonomous motivation that enrich a collaboration. The psychological needs for
autonomy, competence and relatedness should be satisfied to optimise motivation. These needs can be met when the team leaders make sure that each member perceives autonomy in the writing process, feels valued for their contributions and have a sense of belonging to the group. Because collaborative writing groups often comprise writers at different career stages, it is important that leaders assign tasks commensurate with individuals’ capability and confidence while also mentoring more junior members and allowing them to grow. Feedback needs to be constructive and sensitively given.

**Fostering a growth mindset among individuals and the group**

Carol Dweck, a psychologist at Stanford University, described two types of mindsets: fixed and growth, based on her research (Dweck 1990, 2016). Individuals who view difficult problems/failure as a learning experience are said to have a growth mindset. Those who believe that their self-esteem is at risk when confronted with challenges are said to have a fixed mindset. Individuals who write in isolation can easily default to a fixed mindset, with a temptation to give up whenever ideas seem stagnant. However, different self-beliefs among individual members of a writing group, spectrum of writing experiences and abilities, response to prior failure, multiple layers of wisdom, a variety of professional and cultural contexts etc can foster an overall growth mindset for the group. However, it must be acknowledged that individuals with a fixed mindset could feel intimidated by a group writing exercise, whereas those with a growth mindset stand to benefit hugely from it.

**Forming the team - Leaders, active followers, and managers**

An effective balance of leadership, followership and management is critical to manage a collaborative team (McKimm and O'Sullivan 2016). Role assignment and leadership negotiation
should be addressed to keep the project moving. Team membership should be revised periodically to bring in new members to broaden expertise, add new perspectives or to manage turnovers and should be balanced with the community stability. For each project, the collaborative writing community should collegially decide on the team leader, the size and assignment of roles, considering that more than one can lead and allow for legitimate peripheral participation. These early decisions will eventually help with authorship and manage expectations of the collaborative team (Mavis et al. 2019).

Holding the project’s big picture, the leader steers the project’s direction, navigates arising challenges, sets the order of the writing flows and updates the communication trail to harmonise versions without smothering any viewpoints. Leaders maintain group interest and collaboration by frequent communication, acknowledging all levels of participation and points of view, reaching consensus, and adjusting direction as needed. These elements also contribute to the positive psychological safety of the group (Gorsky et al. 2016; Edmondson 2019).

If one member repeatedly assumes leadership, negative reactions from other group members may arise. On the other hand, a healthy members’ tension can exist when a few take on the lead of innovative projects and co-work with independent and passionately committed followers (McKimm and Vogan 2020). The flow of opportunities to switch roles nurtures a living community, maximises individual contribution and enables collective fulfilment. It is usual, and perhaps ideal, for team membership and leadership to change according to the topic and relative expertise and interest of individual team members.

In the book ‘Good to Great’, Jim Collins highlights the importance of “getting the right people on and off the bus” (Collins 2001). Just as a community of scholars can spontaneously emerge
from formal or informal encounters of individuals sharing a mutual passion for developing excellence in their field of interest (Wenger 2000; Ramani et al. 2020), collaborative writing groups can also be formed this way. Recruitment of members should take into consideration individuals’ interest, skills, and motivation in a continuous renegotiation of joint enterprises conducive to effective collaborative writing and publication (Wenger et al. 2002).

**Serving a wider community**

Health professions educators are part of a global community, which benefits greatly from the sharing of practice and the development of a ‘collective wisdom’. Scholarly outputs are a vital part of the sharing of practice and so it is important to keep an international audience in mind, even if one is writing about a local initiative or research project. Engaging in and accomplishing collaborative writing may raise a critical question on the purpose of sharing the scholarly work with the community served by the profession. This means that scholars should work with the broader community (healthcare, patient or advocacy groups and global scholars) to specifically address ‘our most pressing social, civic and ethical problems’ (Renwick et al. 2020). We discuss next various ways to achieve this, i.e., the scholarship of engagement.

**Ensuring a global perspective**

For some groups, ensuring a global perspective is important. Creating and nurturing a successful global collaborative writing group involves embracing diverse authors from geographical, cultural, professional, generational, healthcare beliefs and systems. Given that the scholarly outputs in health professions education are mainly from USA, Canada, UK, Australia and countries in Northern Europe and much less from countries in the Asian, Africa and Latin American continents (Meo et al. 2015; Azer 2016; Meo et al. 2019), there is a strong
imperative for seeking global and cultural diversity. Taking a global perspective can be more evidence informed and relevant to health professions training in the context of a geographically mobile global healthcare workforce. Achieving this goal requires comfort with participating in virtual CoPs, which can facilitate global communication and engagement (Yarris et al. 2019).

**Ensuring diversity and inclusivity**

It is believed that diversity is a prerequisite for excellence since it assimilates inclusiveness, mutual respect, and multiple perspectives as core processes for equity in healthcare delivery, and HPE (Nivet et al. 2016). Furthermore, there is a growing case for HPE research to balance and challenge current assumptions of standardisation and contextualisation. While standardisation pivots towards benchmarking and best practices, contextualisation may offer a more authentic source of implementation and evidence. Collaborative writing projects with scholars from diverse backgrounds: geographical, cultural, professional, generational, education and healthcare systems enable deep group reflection considering different stages of understanding and adaptation of HPE practice (Stevens and Goulbourne 2012). This also offers opportunities for research output which is globally responsible as well as locally engaged (Bates et al. 2019).

While the principles of education may be similar in many contexts, implementation strategies and day to day practices vary. Collaborative writing should therefore aim to harness collective wisdom and reflect a relevant diversity of people, cultures, places and health and education systems (see Box 2).

*Box 2 here*
A proposed framework for collaborative writing

Collaborative writing requires much more than individual writing skills. Much of scholarly writing occurs as a team—small, medium, or large. Working on a writing team involves the ability to communicate a vision and goals, negotiate and reach consensus when individual goals conflict, respectful communications especially when there is disagreement, peer learning, leadership, and active followership skills, and more. Thus, a model of collaborative writing can and should be viewed through three key lenses as shown in Figure 1: individual, team and the scholarly product, and each group member should address all three perspectives as they make their contributions. In fact, individual group members may sometimes need prioritise team needs over their own in maximising the quality of the scholarly product.

The three lenses framework (Figure 1) is expanded in the next section in relation to offering practical strategies for collaborative writing. The tips are described under the three categories—the individual, the team, and the scholarly product.

Figure 1 here

Figure 2 aligns the theoretical considerations with the three perspectives.

Figure 2 here

Practical strategies for successful collaborative writing

This section describes practical with detailed recommendations for effective and efficient collaborative writing. The tips are described through the three lenses to benefit the individual, the team and the scholarly product. The primary goals of collaborative writing are to motivate, enhance the skills of individual writers; form a diverse community of writers/scholars who mentor, learn from each other and engage in ongoing professional growth regardless of the
stage of their career and level of expertise; and create writing products that uncompromisingly meet the standards of scholarship, communicate diverse perspectives that have a global impact and elevate the field. Key tips are shown in Figure 3.

*Figure 3 here*

**For the writer**

*Keep up with literature*

Reading articles and attending courses or conferences are fundamental to keeping up with scholarly advances (Saint et al. 2000; Burke et al. 2002). Reviewing academic literature provides exposure to a range of article types, presentation styles and structural formats, helping individuals to experientially determine from the reader perspective, what elements they can later emulate and what pitfalls they should avoid in their own writing. Scholars should choose a list of journals that reflect their personal needs and interest and subscribe to content alerts to keep abreast of emerging content. Early career scholars may want to read more broadly to try to develop an understanding of the ‘big picture,’ while senior scholars may choose to read more narrowly and focus on targeted areas of interest. Maintaining a “reading journal” (whether in paper or electronic form) can track publication information and content summaries, as well as strengths and weakness of the read article. Summarising relevant articles not only helps build knowledge but also helps develop *précis* writing skills. Given the volume of articles that a scholar may review, the use of citation manager software can be helpful. Compiling a list of core articles in the subject is also essential for citations and bibliography of the current project.
Enhance writing skills

Academic writing is a skill and discipline that needs to be learned, practised, and refined over time. New writers need to familiarise themselves with techniques to create a coherent easy-to-read and interesting argument involving the ‘3 Ss’ of story, structure and style (Watling 2016). Writing in a non-native language introduces additional challenges relating to adopting correct grammar and sentence construction. Novices require advice, guidance and mentorship to help them develop their own writing style. Even those with expertise in a subject may not be skilled writers. While more experienced writers may be able to complete writing tasks more efficiently and with less effort, it can be difficult to adjust to the group’s ideas and adapt one’s writing style to fit in the overall style of the manuscript.

Participate in writing workshops and writing groups

Participating in formal writing workshops offer a well-established way of building confidence in writing styles, stylistic and structural issues, manuscript editing and submission processes (Steinert et al. 2008). Such workshops can provide useful writing strategies and tips in terms of task allocation, deadline settings, draft and revisions. Writing groups can also help support development of writing activities (Grzybowski et al. 2003; Steinert et al. 2008). Groups of writers come together either through formal schemes or informal networks for the “social production and consumption of writing” (Aitchison and Guerin 2014). Writing groups help members execute their own individual writing tasks within a supportive group environment.

Key benefits to writing groups include sharing of good practice, immediate availability of feedback, learning through scholarly critique of others’ work and collegial competition to maintain writing productivity.
Access writing resources and peer groups

University writing centres (https://writingcenter.uconn.edu/collaborative-writing-resources/) and textbooks that focus on writing skills provide useful tips and practical suggestions for students as well as faculty across a variety of academic fields.

Many academic journals also offer a range of writing resources for authors with online guidance on the writing and publication process. Furthermore, becoming a journal peer reviewer provides opportunity to learn through critique, the building blocks behind a good quality publication. Whilst this may feel daunting for novices yet to fully acquire the skills in critical appraisal and review, several journals allow for those less experienced to participant in the review process as part of a group or mentored scheme (Ilgen et al. 2016; Richards et al. 2020).

Seek mentoring and coaching

Senior educators with experience in writing and scholarship can have a critical role in inspiring and guiding early-stage educators in developing their writing skills. Collaborative writing provides a favourable creative environment for novice faculty to increase their scholarly output whilst engaging in the discipline of writing. Early-career faculty or novice writers may flounder at some point of the writing process and the presence of experienced scholars can create unique learning opportunities to unlock challenges and develop solutions. In building mentoring relationships to guide the novice writer, consider establishing a network of mentors, each of whom can offer unique guidance and advice that is additionally enriching. This is what a collaborative writing group provides. The use of writing coaches is another support mechanism for inexperienced (Baldwin and Chandler 2002; Lingard and Watling 2020).
Through reflective questioning and feedback, the coach guides the writer through the various
writing and editing stages, helping them become ‘unstuck’ at points of standstill.

**Navigate the workload efficiently**

Whilst writing can be a motivating activity, academics and clinical educators often struggle to
find the time or inspiration to taken on writing work because of the burden of other work
commitments (Boice 1994). The team should recognise these struggles and respect an
individual’s decision to decline involvement in a particular project. The workload extends
beyond the writing itself and includes the ability to commit to frequent communications and
meet multiple deadlines. Writing needs focus and continuity so that one gets into the ‘flow.’
Individual writers need to decide what approach and routine works for them - some find it
more effective to block out a full day of writing while others prefer to break a project into
chunks and complete one section at a time.

**For the writing team**

A common pitfall in team writing is that the group just agrees to write ‘something,’ and each
person starts writing. This risks a poorly coordinated product that may be repetitive, omit
important material and use inconsistent terminology and grammar rules. The adage “Too many
cooks spoil the broth” is appropriate in this context. It is important that there is buy-in and
ownership from each member of the writing team on the intended product. Ideally, a small
leadership group coordinates the entire project, solicits contributions from group members
based on expertise and interest, allocates roles and tasks, sets and meets deadlines, and
provides feedback on individual contributions. A brief writing plan with roles, tasks and
timelines is helpful so that frequent checks can identify problems and gaps.
Consider ethical issues

The team should discuss conflicts of interest, such as leadership roles at institutions or academic and non-academic organisations and how these might shape their approach to the project. If it is a research project, ethical approval is mandatory. Since many teams are multi-institutional or even global, decisions should be made about who will obtain approval, how approvals from one ethics committee influence other institutional ethics boards and address how ethical guidelines vary across regions.

Assign roles

An initial online or in person meet and greet session can be useful for all authors to share their perspectives on the topic, especially when a given topic could go in multiple directions and disjointed conflicting views could emerge in the writing. Depending on the task length and complexity, sections can be assigned to an individual, dyads, or a small team. Circulating a list of questions such as “What comes naturally? What do you enjoy? What is easy for you? What do you find challenging?” enhances self-reflection, clarifies communication and allows for collegial decisions.

The collaborative writing group members can assume various complementary roles. Belbin described how people within teams have preferences for different types of team roles (https://www.belbin.com/about/belbin-team-roles/). Important roles for team writing could include the administrator, the brainstormer, the writers, the reviewer, the editors, the cheerleaders, and the graphic designers (see Figure 4). Identifying individuals within the team for the different roles is important, sometimes this is assigned but often it falls to the strength
of different people. The roles are not static, and individuals may adopt a different role in various projects.

*Figure 4 here*

**Decide on authorship and order of authors**

This can be contentious, particularly as universities value publications where their faculty are at the top of the order. Authorship roles in a collaborative writing project should reflect meaningful contributions from all those listed. Given the political, social and psychological dynamics involved in multi-authorship, many articles have directed attention to ethical issues that emerge when deciding on authorship order (Macfarlane 2018) and provided recommendations (Roberts 2017; Roberts 2018). Ultimately journal requirements are critical when reaching the manuscript submission stage and it would be important to note if there are any author limits. The International Committee of Medical Journal Editors has published clear guidance, and this should be followed (http://www.icmje.org). In summary, authorship is based around four criteria, see Box 3.

*Box 3 here*

**For the scholarly product**

**Plan the project**

Developing and following a plan is essential to success. Who will read the scholarly output and which publication is better suited to that audience? The agreed writing style may be influenced by the requirements of the chosen journal or publishers and editors of books. Projects may result in more than one academic output such as conference presentations, professional development workshops, webinars, or publications. Unnecessary overlap and duplication of
effort should be avoided. It is important not to ‘over-plan’, as writing projects are often essentially creative ventures that are likely to evolve. If a gap in the literature that sparked initial interest has been addressed by other authors, the team should be nimble in building on the more recent work.

If a writing project is research related, ethical approval is needed before the project even commences. Although many projects in HPE are regarded as ‘low risk’, all studies involving learners must have ethics approval because of the potential power imbalances, student privacy issues, and exemption should never be assumed (Hays and Masters 2020). Most journals require documentation of approval or exempt status conferred by institutional ethics boards.

**Do the writing**

The writing strategy can be sequential or parallel, each of which has pros and cons and may depend on the technology available to the group (Last and Neveu 2019). For example, when writing this Guide, we chose a parallel approach with pairs of writers taking on specific sections.

The benefits of this style, experienced in this process, include efficiency, a high volume of output and better use of individual talent. The drawbacks include repetition of concepts, stylistic differences and the generation of a large volume of writing which requires judicious editing.

Many layers of peer review opportunities are essential and wise in any writing project. Individual sections, when co-written by 2-3 contributors, allows one person to take the lead and then invite input from their immediate co-author(s)-as a first layer of peer review. The section is then sent to the project editorial team – as a second layer of peer review. This team checks for content coverage, ensures that overlaps are avoided and finalises the writing style.
Many web-based tools are now available to enhance group writing work, from initial brainstorming to editing. Popular online collaborative tools include Google Docs, Draft, Etherpad, Box, Dropbox, Microsoft Teams etc. (https://compose.ly/for-writers/online-collaborative-writing-tools/ last accessed 06-08-2021). Beyond that, tools such as DocuViz analyse collaboratively written text in order to identify/document the contributions of individual authors (Wang et al. 2015). Electronic writing tools should provide: centralised document control and commenting functions with tracking of changes and revisions (Kim and Eklundh 2001).

**Establish timelines and deadlines**

Skilful team project management is critical to coordinate efforts effectively, honour the value of each member’s contribution, keep the momentum, and reach individual and group fulfilment. The project leadership is pivotal to ensure achievement of goals and identify measures of success. A list with a logical sequence of essential tasks, completion timelines and responsible individuals needs to be created, agreed upon and communicated to all involved in the collaborative writing project. Members who delay in meeting the deadlines should receive kind reminders, and their personal and professional circumstances should be acknowledged (Gorsky et al. 2016). The degree of tolerance for individuals who submit contributions late should be built into the writing plan. Deadlines need to be able to accommodate delays, many of which will be unpredictable and unavoidable.

**Streamline language**

The larger the collaborative writing team, the greater the challenges in finding a mutually acceptable writing style or ‘voice.’ Some issues can be resolved by careful attention to author
guidelines from the chosen journal, manuscript type, book publisher and editors. Adjusting to others’ writing styles can be challenging, but necessary within a collaborative writing group. It can be decided in the early phases of writing to follow the style of one or two authors since collaborative writing is held together by the lead author/s. All members need to know that their sections will be revised, and the final version may look very different from their original input. Knowledge and use of grammar are likely to vary among authors, even when they share a first language. Examples include use of an active or passive voice, British or American English, partiality towards certain verbs over others, construction of sentences, text versus visual depictions such as tables and figures, action-oriented writing versus descriptive/theoretical writing, and selection of references. Once again, these decisions should be made early, agreed upon and a small team should take ownership of final editing to ensure uniformity of language, grammar, style, and flow.

**Edit and submit**

‘Near-final drafts’ are where the editorial pen is used more often, aiming for consistency in terminology, grammar and writing style, the ‘one-voice’ term is often used. Ideally, the whole product will read like it was written by a cohesive team with a clear purpose and message, rather than a group of individuals who write differently. When all contributions are received it is possible for the editorial group to move sections around to produce more logical and clearer flow of ideas. The task of finalising a manuscript falls to this group – ideally 2-3 people only, but all authors should read and approve the final draft. The order of authors should reflect the people who did more work at the beginning and less work at the end, not seniority or career stage. Where more than one paper or presentation is developed, lead authorship can be
rotated. Where a small team contributes roughly equally, alphabetical order may be appropriate. Others who make a lesser contribution should be acknowledged formally.

**Revise and re-submit**

When journals request major or minor revision, this stage is best left in the hands of a small group of the writing team—editorial team. Just one should be the corresponding author, although this could be an ideal task to delegate to a junior member of the team as a mentored learning experience. Reviewer feedback should be shared with the whole authorship team, but changes should be made by a smaller group. Again, the editorial team decides on finalising the re-submitted version, although all contributors should read and approve the final version.

**Challenges to collaborative writing**

Key challenges to collaborative writing and potential solutions have been identified in previous sections and are summarised in Table 1.

*Table 1 here*

**Summary and conclusions**

In this guide, we have discussed the importance of collaborative writing and framed it through three lenses: the individual writer, the writing group, and the scholarly product. We have selected relevant principles that apply to individual members of the team as well as the collaborative writing team overall. We describe the implications and practical strategies to ensure that the journey of a collaborative writing team reaches successful conclusion, weaving in mentoring (up, down and sideways), and community of practice principles. As diversity is an important concept, we strongly emphasise and have showcased diversity and inclusivity in the team who wrote this Guide—diversity in educational and professional background, geographic
location, cultural context - as we believe this is essential to produce scholarship that has far-reaching relevance and application. Having covered individual writers and the writing team, we assert that every collaborative writing team ought to reflect on their scholarly contribution from the planning stages to ensure that their scholarship advances the field of Health Professions Education. This is critical if the contribution of the whole team is to be greater than the sum of its individual members’ skills. Finally, to achieve successful scholarly output from a team, comprising scholars from different contexts, possessing a range of writing experiences, the solutions to the key challenges are highlighted and addressed throughout the text.

Box 4 here
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References


Figure 1: In this figure, we view collaborative writing through three lenses that influence the quality of the scholarship: the individual writer, the writing team and the scholarly product. These lenses and scholarship are positioned within the larger field of Health professions education, which ideally addresses the overlap of education, professional practice and the health of the community.
Figure 2: Applications of theoretical considerations for the individual, the team, and the scholarly product
Figure 3: Key practical tips for successful collaborative writing
Fig 4. A diverse and inclusive writing collaborative writing team with multiple complementary roles.
Box 1

Boyer’s expanded definitions of scholarship, applicable to all types of writing products

- The scholarship of discovery refers to original research that provides new knowledge, adds to existing knowledge in an area or challenges current knowledge in a discipline such as HPE.
- The scholarship of integration, gaining visibility in the era of interprofessional healthcare education, relates to making connections across disciplines and aims to stimulate a more integrated use of knowledge.
- The scholarship of application refers to application of knowledge to real-life problems of individuals or of society, in this case learners, teachers, institutions and all other educational stakeholders.
- The scholarship of teaching is not about transmitting information to learners but should involve transformative learning and stimulate critical thinking and lifelong learning.
- The scholarship of engagement includes sharing knowledge with peers and future scholars but needs to take on large and humane goals that address societal, global, and ethical challenges and serve the nation and the world.
Box 2: Harnessing diversity within a collaborative writing group

1. Include people with varied perspectives deliberately and purposefully.
2. Showcase a broad range of views within the scholarly product.
3. Reach consensus when necessary, but not all writings need a uniform perspective; multiple views are equally important to communicate.
4. Respect multiple opinions from many levels of experience.
5. Embrace a variety of perspectives about social reality (ontology) and nature of and ways of constructing knowledge (epistemology).
6. Create inclusive and person-centred leadership to provide a safe psychological space, model respect for differing opinions and welcome diversity.
Box 3: Four criteria for authorship

1. Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
2. Drafting the work or revising it critically for important intellectual content; AND
3. Final approval of the version to be published; AND
4. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.
Box 4: Questions for self-reflection before engaging in collaborative writing

To engage in collaborative writing, ask yourself the following questions:

1. What are your areas of expertise?
2. What is your level of passion for this subject and form of writing?
3. What comes naturally to you?
4. What do you have time for?
5. What type of topics/publications are more/less suitable for collaborative writing?
6. What type of contributions are you most likely to make?
7. What team are you considering joining and what do you expect to learn from them?
Table 1: Challenges to collaborative writing and potential solutions

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Challenges</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>• Lack of writing experience</td>
<td>• Join a community of writers</td>
</tr>
<tr>
<td></td>
<td>• Writing in a language other than one’s first language</td>
<td>• Develop language skills from other group members</td>
</tr>
<tr>
<td></td>
<td>• Writing style</td>
<td>• Learn from senior members on crafting a unified style</td>
</tr>
<tr>
<td></td>
<td>• Time commitments</td>
<td>• Commit to time that is feasible, communicate when challenges arise</td>
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<tr>
<td></td>
<td>• Knowledge of the subject</td>
<td>• Review literature on the topic of the writing project</td>
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<tr>
<td></td>
<td></td>
<td>• Attend courses, read, seek mentoring on writing skills</td>
</tr>
<tr>
<td>Team</td>
<td>• Assigning roles and responsibilities - Leaders and followers</td>
<td>• Leaders must be inclusive, understand group dynamics, be able to reach consensus that satisfies</td>
</tr>
<tr>
<td></td>
<td>• Authorship</td>
<td>the group, be respectful to all viewpoints</td>
</tr>
<tr>
<td></td>
<td>• Meeting timelines</td>
<td>• Roles and tasks should be assigned based on knowledge, writing skills and experience, interests</td>
</tr>
<tr>
<td></td>
<td>• Being inclusive</td>
<td>and time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Decide authorship order which satisfies team members</td>
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<td></td>
<td></td>
<td>• Rotate lead authorship for different projects</td>
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<tr>
<td></td>
<td></td>
<td>• Diversity on the team can include: context, geographic location, subject expertise, writing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>skills, career stage, disciplines, opinions, culture etc.</td>
</tr>
<tr>
<td>Scholarly</td>
<td>• Writing style</td>
<td>• Acknowledge that language style will vary</td>
</tr>
<tr>
<td>Product</td>
<td>• Language and grammar</td>
<td>• If not first language, encourage use of simple language. Overall, simple language is preferable</td>
</tr>
<tr>
<td></td>
<td>• Quality of the writing product</td>
<td>as readers are international</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Small team should edit for grammar and style</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Quality assurance should involve language, flow, scholarly standards</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reflection on how the product advances the field</td>
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