Round Tables: Diversity

Promoting Inclusive Mentoring Practices With The Productive Postdoc Conversation Framework

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Abstract

Mentoring relationships impact postdoctoral scholars' ability to be independent, resilient, and productive professionals, well-informed to make career decisions. However, 40% of postdoctoral scholars are not satisfied with the mentoring they receive, and many report anxiety in having conversations with their mentors and/or are fearful of conflicts. We propose to integrate Productive Postdoc Conversation (PPC) frameworks in our Postdoc Academy Massive Open Online Courses (MOOCs) content, to help initiate conversations on topics covered in our MOOCs.

Our dialogue framework, informed by our research and other studies, aims to improve postdoctoral scholar/mentor relationships. The framework helps both parties relate the content of the Postdoc Academy 6- and 7-week MOOCs to their mentoring context with evidence-based introduction videos and learn about peers' experiences and strategies from recorded interviews. Self-reflection prompts encourage mentors to empathically listen, while postdoctoral scholars are empowered to lead productive discussions with mentors and maintain conversations in the future.

The PPC framework will be published on our project website in the Fall of 2023. We will evaluate PPC through pre- and post-MOOC surveys, which will provide data on learning/behavioral outcomes right after and six months after the end of the MOOCs. We hope to see an increase in confidence in mentees and mentors overcoming common hesitancies and discussing topics important to postdoctoral success (e.g., short- and long-term career planning, resilience, leadership).

The PPC framework aims to promote inclusive mentoring practices for postdoctoral scholars across fields (STEM, Social Sciences, Humanities…). Instead of focusing on only mentees or mentors, PPC uses evidence-based content combined with self-reflection and discussion prompts to help generate empathy and relatedness between both parties. This framework also empowers both mentors and mentees to define and discuss what success means individually and collectively in their mentoring context and decide whether, why and how change is needed.

Introduction & Literature Review

The National Academies defines mentorship as "a professional, working alliance in which individuals work together over time to support the personal and professional growth, development, and success of the relational partners through the provision of career and psychosocial support" (National Academies of Sciences Engineering and Medicine et al., 2019). An effective mentoring alliance is built upon mutual respect, reciprocity, and shared values, and supports the mentee in gaining aptitudes and skills that align with their short- and longer-term goals (Straus et al., 2013). When these key features are intentionally addressed, mentoring can lead to a wide range of positive relational, behavioral, attitudinal, motivational, learning- and career-related outcomes in academic and other professional settings (Eby et al., 2008; Jones et al., 2019; Vassallo et al., 2021).

Academic mentoring programs have successfully supported gains or improvement in researchers' skills to become more effective mentees and mentors. For example, a study that analyzed the evaluation data from 31 different mentoring training programs showed that regardless of the training length and mentoring experience, all research mentors enrolled self-reported a significant gain in their mentoring skills (Rogers et al., 2020). Beyond improving the overall quality of the mentoring provided, these trainings also have a positive impact on the mentor/mentee relationships and the career advancement of both the mentors and the mentees. Because of their demonstrated ability to promote the retention, motivation, and persistence of early-career researchers in academia, mentoring programs have successfully been used as tools to address different types of systemic oppression, e.g., ableism, sexism, or racism, to advance equity and inclusion in academia (Byars-Winston et al., 2023; Freeman, 2020; Johnson et al., 2021; Lewis et al., 2016; Risner et al.,

2020).

Academic culture only transforms when mentors seek to "learn their mentees" (Montgomery, 2017) by growing their awareness of and doing their best to address the specific needs of their mentees (Lewis et al., 2016). At the heart of this process is the mentoring conversation, also called "mentoring dialogue" (Coombs & Goodwin, 2013; Rachamim & Orland-Barak, 2018). Dialogue in a learning and teaching context is defined as a "collaborative, mutually constructive, critically reflective, participatory" process, as opposed to being monological, i.e., with an expert mentor pouring their knowledge into their mentee (Bokeno & Gantt, 2000). Multiple studies have demonstrated that such dialogues help create safe spaces for individuals to share and experience ideas, investigate their practices, and come up with solutions to solve issues at hand without trying to "fix the mentee" (Coombs & Goodwin, 2013; Helgevold et al., 2015; Rachamim & Orland-Barak, 2018; Timperley, 2002). Interestingly, teacher mentees and their mentors have successfully explored and used a range of media to have and maintain such dialogues, like writing blog posts or journaling, in addition to virtual and in-person conversations (Coombs & Goodwin, 2013; Nahmad-Williams & Taylor, 2015).

A few scholars have studied and mapped the key roles of mentors in mentoring dialogues. Their analyses led to the creation of the MERID (MEntor Roles In Dialogues) model, in which the combination of the mentor's style – i.e., "active" when they initiate conversations or "reactive" when they don't – and directiveness result in one of four specific roles (initiator, encourager, advisor, imperator) (Hennissen et al., 2008; Munroe, 2021). Becoming aware of their go-to style and analyzing their mentoring practices and their impacts is essential for mentors to become cooperative mentors who can adapt their style to their mentees' needs (Clarke et al., 2021). These findings are aligned with recent encouragement from national agencies, like the National Institute of Health, and postdoctoral scholars (Davis et al., 2020) who call for initiatives to support both mentees in mentoring, and mentors in intentionally enhancing their mentoring core competencies. Since the mentoring conversation/dialogue is at the core of the mentoring relationship and has such an important impact on the well-being and career advancement of postdoctoral mentees (Davis, 2009; McConnell et al., 2018), we created a new tool to foster postdoc-led dialogues: the Productive Postdoc Conversation (PPC) framework.

Our aims in this paper are to: (1) provide a brief historical overview of the Postdoc Academy, a professional development program in which the PPC framework will be embedded, (2) describe the PPC framework (overall design, development, and example of one PPC), and (3) highlight the PPC framework evaluation plan.

History and Impact of the Postdoc Academy on Postdoctoral Training

The Postdoc Academy (https://www.postdocacademy.org/) is a comprehensive and free online program that supports postdoctoral scholars across fields in their professional development, from the beginning of their appointment to their transition to their next career step. Its content includes two free, self-paced, Massive Open Online Courses (MOOCs), open facilitation materials, and supported learning communities that can be held in-person or virtually.

The 6-week MOOC Succeeding as a Postdoc supports early-stage postdocs in gaining skills and establishing the habits that will help them strategically prepare for a successful postdoctoral experience. The first module enables participants to understand the role shifts in the graduate student-to-postdoc transition and build a support system to thoughtfully join their new community of practice. The second module supports participants in building a career plan and putting it into action, anticipating potential challenges, and reflecting on ways to overcome them. The third module focuses on developing resilience; it helps postdocs reflect on stress and deterioration, acknowledge that failure is part of the learning process, reflect on strategies to bounce back and learn from challenges, and build a resilience action plan. The last module encourages participants to self-reflect on the multiple identities they hold, explore the literature on microaggressions and implicit bias, and reflect on ways to manage social interactions inclusively. Since January 2020, 5366 postdocs have enrolled in 6 offerings of this MOOC (21% completion rate, 92% post-MOOC survey respondents satisfied or very satisfied).

The 7-week MOOC Building Skills for a Successful Career supports mid- to late-stage postdocs in gaining and honing advanced skills to transition into their chosen career path. The first four module themes explore leadership, team building and supervision, project and budget management, and applying teaching skills beyond the classroom. The fifth module supports postdocs' oral communication skill development by having them craft an elevator pitch. The last module provides participants with tips and tools to explore career options, network, and navigate the job application process. The launch of this MOOC in Summer 2021 attracted 1362 postdocs (18% completion rate, 90% post-MOOC survey respondents (very) satisfied), and it has been

offered twice since to more than 3000 postdocs.

Both MOOCs use a wide range of learning materials and methods, including videos to present evidence-based content, self-reflection prompts, case studies, and goal setting activities. The MOOCs are hosted on the edX platform, which provides participants with discussion forums to share their experiences, answer discussion prompts, discuss case studies, and interact with the pedagogical team. Additionally, the Postdoc Academy supports learning communities to expand the impact of its two online courses. Since the launch of the Postdoc Academy program, 56 unique institution-based or field-specific learning communities (668 participants) have been facilitated by 68 project-trained facilitators across the US.

Content

Development of the PPC Framework

Mentoring has been shown to play a critical role in supporting postdoctoral scholars' career choices, although that support is differentiated for scholars from underrepresented backgrounds (Lambert et al., 2022; McConnell et al., 2018). Postdoc Academy program participants have the option to join learning communities, which some choose to participate in because it gives them the opportunity to have conversations on key professional development topics (Hokanson et al., 2019). However, Postdoc Academy program evaluation data concludes that such conversations with peers can and should be extended to include their advisors and mentors. Multiple reasons could explain the struggles postdoctoral scholars have in initiating mentoring conversations, like previous unsuccessful conversations (Eberle, 2019), a lack of relatedness, or a difference in power dynamics that induces fear of conversations that might introduce conflicts (Rock, 2008).

Given the benefits mentoring conversations have on the well-being and the productivity of postdoctoral scholars (Davis, 2009; McConnell et al., 2018), we sought to create a tool that would boost the effectiveness of mentoring relationships, by encouraging (1) mentees to be self-reflective and proactive by initiating conversations, and (2) mentors to practice empathy and active listening (Pfund et al., 2016; Straus et al., 2013). Additionally, to support both postdoctoral mentees and mentors in having conversations on key professional development topics, like career planning, work/life integration, or time management, we embedded the PPC framework in the Postdoc Academy content, which covers all these topics. The PPC framework thus invites postdoctoral scholars and their mentors to relate each Postdoc Academy module content to their mentoring context and develop and use evidence-based strategies to overcome potential hesitancies and barriers to engaging in these conversations.

To ensure that mentees and mentors could explore the PPC framework contents in 10-15 minutes, we developed a simple design. First, both mentees and mentors would be invited to first watch an evidence-based video introducing a topic, e.g., setting expectations, followed by advice from other academics on how to approach that topic, e.g., by discussing and documenting mutual expectations. Then, mentees are encouraged to watch a video in which interviewed postdoctoral colleagues share how they approach the topic of interest with their mentors (e.g., by leveraging local resources, asking for a dedicated meeting to discuss and set explicit expectations). In parallel, mentors are invited to watch a video of mentor colleagues sharing how they approach the topic of interest with their mentees (tools used, encouragement to build specific skills and motivations to do so). Finally, while mentors are given self-reflection prompts to prepare for the upcoming mentoring conversation, mentees are given discussion prompts that can be used to initiate the dialogue. Mentees also have access to a handout to set goals for and lead the conversation, take notes during the discussion, and list action steps to be taken afterward and follow-up for a future conversation if needed.

One PPC framework was created for each Postdoc Academy course module (i.e., ten in total) and an example outline of the PPC framework developed on time management is presented in Table 1.

Table 1.
Outline for the Time Management Productive Postdoc Conversation Framework

Introduction Video
o Literature on the importance of time management in academia; o List of key symptoms of suboptimal time management; o Strategies for effective time management (including encouragement to track one's time and use time tracking data to intentionally manage one's time).

Postdoc Activity	Faculty Toolkit

o Set of Postdoc Interviews, where peers describe:
  ▪ Their top priorities for their postdoc
  ▪ Their top 3 time management tips
  ▪ The boundaries they are proud of or are working on setting
o Prompts to lead the conversation with the mentor:
  ▪ Describe the mentee's time management strategies and their effectiveness
  ▪ Discuss areas in which the mentee needs more support
Note: a handout is available for postdocs to prepare and lead the conversation, and list and take key action steps afterwards.
	o Set of Faculty Interviews, where peers describe:
	  ▪ Their top 3 time management tips
	  ▪ How they set priorities
	  ▪ How they exemplify good time management through their team culture
	  ▪ How they support mentees who struggle to manage their time effectively
	o Self-reflection on their mentees' needs and how they could support them

References cited in the framework:
• Bartlett, Arsan, Bankston & Sarabipour, Ten simple rules to improve academic work-life balance, (2021). PLoS Computational Biology. • Susi et al., 'I'll work on it over the weekend': high workload and other pressures faced by early-career researchers, (2019). Nature. • Woolston, C. Workplace habits: Full-time is full enough, (2017). Nature. • Flaherty, C., So Much To Do, So Little Time, (2019) Inside Higher Ed.

Evaluation Plan for the PPC Framework

Evaluation of the PPC framework is embedded in the evaluation plan of the Postdoc Academy program and is described within an IRB-exempt protocol number 5419X. PPC-specific questions will be included in course pre-surveys, which are used to collect baseline information about Postdoc Academy content users' awareness and understanding of each topic covered in the MOOCs. The PPC-specific pre-surveys will measure initial perceptions of postdoc mentoring relationships and the current frequency and perceived success of past mentor/mentee conversations. We will gather formative data (e.g., how many minutes did you spend preparing for your mentoring conversation? or, how engaged were you with the PPC materials?) within the course after each module to improve our program content and design. We will also collect summative self-reported data on specific learning outcomes associated with the new content (e.g., strategies mentees and mentors will try, key talking points) and behavioral outcomes (e.g. intent and confidence in participating in conversations).

To evaluate the longer-term impacts of the framework, we will administer a six-month delayed post-survey to all mentees and mentors who engaged with the PPC framework materials. We seek to understand whether or not the individuals (a) followed through on conversations, (b) thought the conversations they had as a result of using the PPC framework were successful, (c) intend to continue the dialogue or follow-up, and (d) experienced any barriers to dialogue.

Finally, to understand the accessibility and outcomes of our content relational to demographics, we will connect edX registration and pre-survey demographic information to the other course assessments and post-surveys. We will use univariate statistical tests to assess how much participants learned on quantitative items and multivariate statistical analyses and logistic regression to assess the impact of the MOOC content on specific identity subgroups (e.g. gender, race/ethnicity) and to assess the impact of demographics and institution characteristics on program outcomes and satisfaction.

Conclusion

Mentoring conversations are the core of mentoring relationships. Yet, postdoctoral scholars sometimes struggle to initiate important conversations or follow up on past discussions, while faculty mentors may not feel equipped to support their mentees with all their professional development needs. To encourage post-doctoral mentees and mentors to advance their productive conversational skills and discuss key professional development topics, we created the Productive Postdoc Conversation framework. One conversation framework will be embedded in each module of the Postdoc Academy courses. The design and use of the framework encourages postdoctoral scholars to initiate conversations on important professional development topics, from the beginning of their appointment to their transition to their next career step, and perhaps beyond. On the other hand, the framework also increases mentors' knowledge of the struggles postdoctoral scholars currently face and encourages mentors to demonstrate active listening and empathy towards their mentees. The evaluation of the PPC framework will be embedded in the evaluation plan of the Postdoc Academy program. Through post-module, post-MOOC, and six-month-delayed-post-MOOC surveys, we will quantify the use of the framework and evaluate its ability to support the initiation of mentoring conversations, as well as its impact on postdoctoral professional development and mentoring relationships.

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