

AuthorAID capacity development impact study 2017

Summary report, June 2017

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Contents

Acknowledgements.....	2
Executive summary	4
Aims of the study	7
Three AuthorAID capacity-development activities	7
MOOC	7
Intensive courses	9
Mentorship	10
Multiple interventions.....	11
Methodology.....	11
Participant observation.....	12
Survey.....	12
The survey design and administration	12
Survey respondents	13
Interviews.....	15
Sampling interviewees	15
Semi-structured questionnaire.....	15
Interviewees	16
Findings	16
Overall difference	16
Perceived impact versus publication outputs	17
Success rates for each approach.....	19
Combined activities	20
Context	20
Age and pre-publication index.....	21
Gender – women progress at slower pace	22
Regional, national and institutional context.....	23
Additional finding – mobility.....	25
Conclusions	26
Recommendations and suggestions for future work.....	26
List of internal INASP reports and documents reviewed	28
List of references	28

Executive summary

INASP's AuthorAID project was launched in 2007 to address the needs of researchers in the Global South for support with research writing and the publication process.

To assess the success of the AuthorAID project against these aims, and to contribute to the body of knowledge on the effectiveness of developing research capacity in the Global South, a study was carried out into three of the main approaches used in the project between 2013 and 2016.

The first of these approaches is the Massive Open Online Course in Research Writing (MOOCs), which started in 2015; the study also included two mini-MOOCs, which took place in 2014. The second approach is the Research Writing in Environmental Health course (intensives), which has a focus on a specialized subject and involves a smaller number of pre-selected participants. The third area, the AuthorAID mentorship scheme (mentees), connects mentees with mentors who can provide support on research writing and other tasks.

The AuthorAID capacity development impact study was undertaken between February and June 2017, with the following objectives:

1. To compare the success rate for three distinct AuthorAID capacity-development approaches in supporting early-career researchers to publish
2. To explore which type of AuthorAID capacity development approach works best for whom
3. To contribute to INASP's evidence base of capacity development in research

A multi-methodology approach was adopted, incorporating internal documents and literature reviews, participant observation, a large-scale online survey and targeted in-depth interviews with a small number of participants. The survey was completed by 1,126 participants (896 MOOCs, 149 mentees, 24 intensives, and 57 multiples who had taken part in different combinations of courses). 100 individual countries were represented. A total of 13 in-depth interviews were conducted via Skype and email, with respondents from Nigeria, Tanzania, Somalia, India and Nepal, to explore key issues arising from the survey. The interviews explored what facilitates or acts as barriers to successful academic career progression and publishing, and provided contextual insights.

Main findings

This study found that all AuthorAID capacity-development approaches have positive impacts on publication outputs and research communication skills. However, the study also revealed that different approaches may be more beneficial for the participants depending on their particular needs and research stage.

Publishing in peer-reviewed journals was perceived as being central to career development in academia and research for 92% of survey respondents. Overall, 56% of survey respondents reported that AuthorAID helped them to publish and 39% of survey respondents published at least one paper in a peer-reviewed journal in the period between their involvement with AuthorAID and March 2017. The group most likely to have published in the period were the participants from the intensive course (67%) followed by mentees (60%), and MOOC course participants (34%). When we looked at publishing within a fixed period of one year following involvement with AuthorAID, we found a similar pattern, with intensive course participants being most likely to publish within one year (59%), followed by mentees (53%) then MOOCs (36%).

When we controlled for age, gender, geographical region, academic qualification and prior publication record, mentees are more likely to have published within a year compared to participants of any of the other courses. We also found that prior publication record was the strongest single determinant of publication and that participants with a PhD are significantly more likely to publish within a year compared to those with a Bachelor degree.

In addition to publications, we asked about perceived impact of involvement with AuthorAID in several areas including confidence, understanding of the publishing process, publication preparation, preparation of other materials, originality and quality of work.

The study found that MOOCs are particularly effective for early-career researchers or those at an introductory level but that MOOCs are also valuable as refreshers for more experienced researchers. The perceived impact of MOOCs by the learners in terms of confidence, understanding of publishing process, quality and originality of research is particularly significant.

Mentoring works best for those researchers with more experience and for those who already have a paper in progress and need specific support. Mentoring has the broadest scope of the AuthorAID capacity-development approaches studied because the remit of the activity is learner-led. Due to this self-led learning nature, the perceived impact reported by mentees is lower than for intensive course or the MOOCs, although 60% of mentees reported publishing since they received this support.

This study found that intensive courses have the most impact on publication outputs (67%). Participants are pre-selected based on relevance to the topic and having a paper already in progress. However, the sample size in this case is smaller than for the other two approaches. This approach demonstrates the effectiveness of delivering a good intervention at the right time.

A small number of survey participants had been involved in multiple activities. No statistical evidence was found that doing multiple courses of the same kind, or combinations of different courses, resulted in either more publications or a greater amount of publishing-related activity.

However, the interviewees who had taken part in multiple AuthorAID activities believed that they benefitted from each course in a different way. For example, the combination of MOOC and mentoring provided researchers with a theoretical orientation and practical application of their learning under the guidance of a more experienced individual. Similarly, those who took part in a MOOC and intensive course believed that the MOOC gave them a broad understanding and the intensive course provided them with an in-depth understanding focused on environmental health.

In addition to achieving the key goal of supporting publication outputs and improved confidence in research communication skills, there are other benefits of the AuthorAID approaches.

The social aspect and opportunity to interact with peers emerged as a positive effect of engaging with AuthorAID courses. This was explored further in the in-depth interviews. Peer support at work and online was identified as a major contribution to publishing. The ability to communicate research at international conferences and to take part in fellowship and exchange programmes in different countries were also seen as key to a successful research career.

We identified a number of barriers to publication success. These include: lack of data analysis skills, limited writing skills, bias in journals and teaching workload (all identified by over 30% of survey respondents).

The in-depth interviews further revealed that national policies that limit funding for Higher Education result in a lack of infrastructure and equipment necessary to conduct scientific research, which forms the basis of any publication. Lack of funding also negatively impacts on the ability of researchers to network and communicate their work at scientific gatherings, such as conferences and workshops.

While it was generally accepted that gender was not an issue within the publication cycle per se., both men and women identified gender-specific barriers to developing a research career. The survey data indicated that women were less likely to publish following an AuthorAID course than men (38% of women publish compared to 44% of men) and that the total amount of publishing-related activity is lower for women. In addition, while most interviewees thought that being admitted to higher education and progress in academia and publications were judged purely on basis of merit, they conceded that women academics face more challenges than men.

Conclusions and recommendations

AuthorAID activities reach a wide range of different individuals in a variety of contexts. All activities produce results in terms of measurable publication output, wider-ranging publishing activity and perceived impact on improvement of skills and knowledge. Different course types are more suited to different individuals depending on their individual context and specific learning needs. This study has

helped explore issues connected with producing publications and a series of recommendations are made aimed at improving course content, presentation format and eliminating the barriers identified by some early-career researchers.

Our recommendations concern the following areas:

- **Presentation format:** Our study showed that more could be done to increase confidence and other areas of perceived impact, especially among mentees. Further work might be done on creating a sense of 'social presence' specifically in the mentorship work; membership of a 'community' might afford added benefits.
- **Collecting course data:** If future work is to involve comparing outcomes between courses, it is important to incorporate comparable outcome measurements within each course and at equivalent time periods. Also, because publishing is often a process that takes considerable time, feedback should be collected from participants after suitable time periods.
- **Gender:** gender-specific data for women *and men* should be collected. Gender-specific issues consistent with cultural context should be taken into account in the development and implementation of courses to ensure neither gender is disadvantaged.
- **Course content:** Time management was mentioned by many respondents and interviewees as a primary obstacle for their publishing. We therefore recommend that AuthorAID courses include more tips on how to create time to work on manuscripts.
- **Inter-activity promotion:** People who did multiple types of AuthorAID courses generally reported increased benefits. However, there was little awareness of other AuthorAID offerings for people who only did single courses. Our recommendation therefore is for AuthorAID to increase inter-activity promotion.
- **Inclusive feedback:** The present study only involves feedback from those who had successfully engaged with AuthorAID courses – it is equally (perhaps more) important to gather information from those who fail to complete courses, or get a mentor etc. to ensure optimal engagement.
- **Mentoring and MOOC for starters:** Previous publication experience was the strongest determinant of future publication success. We recommend that AuthorAID establish how to best support those who come to AuthorAID with no previous publication record. It seems that this group could especially benefit from mentoring or peer-mentoring activities.
- **Intensive courses for other disciplines:** Given the success of the intensive course format, it may be worth considering developing intensive courses for other disciplines.
- **Continue to learn from feedback:** Participants had strong and informed opinions about what they had most benefitted from and about what they required from AuthorAID courses. Furthermore, the publishing environment itself is in a continuous state of flux. Therefore, we recommend that AuthorAID continues to collect, analyse and learn from participants' experiences in order that courses are responsive to individual needs.
- **Develop better understanding of impact:** The existing AuthorAID courses focus largely on publishing research papers in peer-reviewed journals. However, the impact of these courses can also be seen in other areas of research and publishing activities. Developing ways of understanding impact and measuring the outcomes in these other areas will help in evaluating existing courses and developing new ones.

Aims of the study

INASP is an international development organization based in the UK and working with a global network of partners in Africa, Latin America and Asia to produce, share and use research and knowledge. INASP runs AuthorAID - a wide-ranging project supporting Southern researchers to gain the confidence, knowledge and skills needed for publishing and communicating scientific research.

During the current Strengthening Research and Knowledge Systems (SRKS) programme, 2013-2018, several internal studies were conducted focusing on different aspects of the AuthorAID project. Evaluations conducted at the time (see the final sections for the list of internal reports) suggest that some of the capacity-development approaches have been more effective in supporting researchers to publish, while others have been more effective in achieving other outcomes, such as increasing networking opportunities, building confidence and core skills. In the final year of the SRKS programme, INASP decided to conduct a retrospective study to identify and understand the impact of AuthorAID's capacity-development approaches with regard to publishing and other outcomes.

The AuthorAID capacity development impact study was undertaken between February and June 2017, with the following objectives:

1. To compare the success rate for three distinct AuthorAID capacity-development approaches in supporting early career researchers to publish
2. To explore which type of AuthorAID capacity development approach works best for whom
3. To contribute to INASP's evidence base of capacity development in research

To meet these objectives, the specific study questions were:

1. What is the overall difference in the three AuthorAID approaches with respect to enabling early-career researcher capacities?
2. What is the success rate for each type of approach regarding production and publication of manuscripts?
3. Is there a significant difference in the publication rate of the three approaches in terms of individual, institutional and country contexts?

Three AuthorAID capacity-development activities

The three activities being compared in this study are AuthorAID's Massive Open Online Course in Research Writing (MOOC), courses in Research Writing in Environmental Health (intensive courses), and the AuthorAID mentorship scheme. All three activities are provided online.

Online learning is a rapidly growing platform providing a range of possibilities including engagement of multiple formats, access to large resource repositories and innovative pedagogy (Anderson 2008, Moisey and Hughes 2008, Hurst and Thomas 2008). While online learning can allow groups to study together in synchronous format, it also allows for the opposite (asynchronous learning) – for people to study in their own time and in spaces of their choosing (Garrison 2007, Anderson 2008). A prominent model for online education, the concept of 'Community of Inquiry' (CoI) proposed by Garrison, Anderson, and Archer (2000) maintains that online learning can be successful if social, teaching and cognitive presence are established. While the model is referred to by several sources, its critics claim that deep learning does not occur (Rourke and Kanuka 2009). Literature suggests that successful online learning happens when teachers provide clear guidelines and students are efficient in managing their time (Anderson 2008, Moisey and Hughes 2008, McSporrán and Young 2001, Hart 2012).

MOOC

Since 2008, Massive Open Online Courses (MOOCs) have become a popular format for many online learning providers. They are free of cost for the participants (although some MOOCs have monetized

their certificates and exams), and are open to anyone to enrol. According to Haggard, a typical MOOC in 2013 took between four and 10 weeks with the final week or two dedicated to production of a piece of work. On average, students spent between two and six hours a week working on the course and many MOOC materials remained accessible after the course had closed. Haggard argues that MOOCs are yet to achieve stability as the courses usually undergo a process of experimentation followed by maturation (Haggard 2013). According to Liyanagunawardena, Adams, and Williams 2013, studies concerned with MOOCs suggest that people who take part in one MOOC are more confident and likely to sign onto another one. In terms of audiences, the published studies have been based on courses that had most of their participants from North America or Europe. While thousands enrol, only hundreds complete. Some suggest the MOOC completion rate is around 10% (Liyanagunawardena, Adams, and Williams 2013). It has been noted that MOOC completers report positively on their experiences and the views of non-completers are largely unknown (Haggard 2013).

Between 2013 and the end of 2016, AuthorAID ran five Online Courses in Research Writing for developing-country researchers, using INASP's Moodle platform. The content was developed and tested over several years before the first year of the SRKS programme. The first two courses called Mini-MOOC 1 and Mini-MOOC 2 were held for selected audiences¹, while the three courses run in 2015 and 2016 (MOOC 1, 2, and 3) were open to all, attracting over 1,300 people per course.

AuthorAID MOOCs differ from what general literature on MOOCs suggests in three aspects:

1. AuthorAID MOOC audiences are mostly early career researchers from low and middle-income countries
2. AuthorAID MOOCs have a high completion rate of 47-68%. There is a higher completion rate (compared to overall completion rate) for female participants ranging between 49 and 72%
3. There is a small degree of professional facilitation²

Participation takes up to three to four hours a week of participants' time. Internet connectivity and low bandwidth are often challenges in developing countries, so the course was developed in text-based format. The course is run on INASP's Moodle site and its content is inspired by 'the Community of Inquiry' model (Murugesan, Nobes, and Wild, 2017). The 12 lessons are divided into four key topics - literature review, research ethics, writing a research paper and publishing a research paper. The course uses discussion forums, optional videos provided separately from the lessons, and multiple choice check-your-understanding quizzes at the end of each week. A key feature of the MOOC is the peer-assessment exercise when participants write and evaluate short texts of others and thus not only get feedback but learn to critique the work of others. Participants are supported by guest facilitators who respond to questions and make posts in discussion forums. Participants' improvement in knowledge is measured through pre- and post-assessment tests which they take at the beginning and at the end of the course (Murugesan, Nobes, and Wild, 2017). The course content encourages participants to take part in other offerings of AuthorAID such as mentoring. At the end of the course, participants provide feedback on individual sections of the course and if they meet all course requirements, they receive a course certificate.³

The content and the length of the course have marginally changed, with Mini-MOOC 1 lasting five weeks and all the subsequent courses six weeks. Over time the completion rate among participants of the two Mini-MOOCs and the three full-scale MOOCs ranged between 47% and 68%, with more women than men completing the course. Significant proportions of MOOC 1, 2, 3 completers came from low or middle-income countries with most completers coming from Nigeria (281), India (217), Sri Lanka (206), Kenya (192), Ghana (128), Philippines (120), and Nepal (114).

¹ Participants had to hold Bachelor's degree and work on research project in order to be able to take part in Mini-MOOC.

² This trend is now beginning to emerge in MOOC courses run by other providers

³ Our interviews have shown that MOOC certificates are used in CVs, on job and grant applications.

A survey of MOOC 1 participants carried out 10 months after the course showed that a smaller proportion of women published after the course than men.⁴ Nevertheless, both males (69%) and females (67%) felt that the course had helped considerably with their research output. Open-ended answers suggested that the course built their capacity, confidence and improved their understanding of the publishing process (Nzegwu 2017).

Course	Dates	Number enrolled	Number completed	Completion rate	% female completers ⁵	Number of countries
Mini-MOOC 1	14/7/2014 – 17/8/2014	267	181	68%	72%	44
Mini-MOOC 2	1/6/2015 – 19/7/2015	356	176	49%	49%	28
MOOC 1	20/10/2015- 30/11/2015	1275	596	47%	49%	51
MOOC 2	1/4/2016 – 12/5/2016	1555	902	58%	61%	62
MOOC 3	18/10/2016- 28/11/2016	1356	648	48%	51%	61

Intensive courses

AuthorAID started delivering thematic online courses in “Research Writing in Environmental Health” in collaboration with Blacksmith Institute (known as Pure Earth since 2015) in 2013. The content was based on the generic AuthorAID research-writing course and adapted to the needs of environmental health scientists with mainly Master’s or PhD degrees. Four courses were delivered between 2013 and 2015 ranging from 15 to 49 participants with completion rates from 67% and 92%. One more course is planned to take place in 2017. Due to feedback from participants and strategic advice from Pure Earth, the course content and duration have changed considerably over time. The most significant changes concern the duration and the assignments written by the participants. While the courses in 2013 and 2014 required participants to submit *abstracts*, the participants of the (most recent) 2015 course worked and got feedback on entire *academic papers*. The former courses lasted five weeks while the 2015 course ran for 10 weeks. (Another course is planned for 2017 and its content and length will be longer than the 2015 course). In this study, we refer to all the courses in this activity as “intensive”.

Consequently, various intensive course cohorts have had diverse learning experiences, resulting in a different degree of impact and sustainability. This diversity has already been explored in part in INASP’s internal report, ‘Blacksmith and AuthorAID Intensive Research Writing Course 2014-2015 –

⁴ 44% of men and 34% of women reported producing one or more publications since the course finished. (Femi Nzegwu, ‘AuthorAID MOOC Survey: An Analysis of the Findings.’, 6 February 2017).

⁵ INASP reports do not monitor rate of male completers. Our recommendation is to report rates for both genders. See recommendations section.

Mini Evaluation’ by Jan Liebnitzky (INASP, 13 January 2016). The report concluded that the group that had taken the 2015 course will have been the most likely to publish as they worked intensively on their papers and had them in a near-completion stage by the end of the course. Our study has neither confirmed nor disproved this conclusion.

Intensive course	Dates	Number enrolled	Number completed	Completion rate	% female⁶ completers
Course # 1	1/4/2013-5/5/2013	49	45	92%	95%
Course # 2	7/10/2013-10/11/2013	25	20	80%	91%
Course # 3	18/8/2014-21/9/2014	26	22	85%	93%
Course # 4	7/9/2015-15/11/2015	15	10	67%	62.5%

Mentorship

Mentoring is a popular way of capacity development in a number of sectors. Colvin and Ashman suggest that there are many different perspectives on what role mentors could play, ranging from an individual who mediates connections, to a coach, advocate, through to a trusted friend (Colvin and Ashman 2010). Marina (2015) notes that in academic settings mentoring early on can help build confidence and self-esteem. It can help tap into aspirational capital as well as expand navigational and social capital. Mentors often help mentees access critical (unofficial) knowledge, networks, and professional development opportunities and provide them with insights into institutional dynamics. Mentoring also helps one realize that they are not “the only ones” and that others have been through similar experiences (Marina 2015). Traditionally, mentoring involves a more experienced individual supporting a less experienced one (Angelique, Kyle, and Taylor 2002). And in this context, mentors and mentees should be well matched in terms of aims in order for the relationship to be positive and productive (Nielson, Carlson, and Lankau 2001, Bierema and Merriam 2002, Sedlacek et al. 2007). Recently, innovative approaches to mentoring have appeared – for example peer mentoring has become particularly popular (Angelique, Kyle, and Taylor 2002, Bierema and Merriam 2002, Marina 2015).

Since 2009, AuthorAID has been running online mentoring. This is a traditional model of mentoring connecting early-career researchers from developing countries with senior researchers and experienced editors. AuthorAID mentors⁷ provide pro bono support that is specific to the needs of their mentees. This ranges from small-scale work such as editing papers and providing general information about writing, to subject-specific advice in varying fields of expertise, through to large-scale guidance about research direction and potential grants.

Prospective mentees and mentors can search for other researchers in their area, or look for and offer requisite skills and support. The system can also suggest suitable mentors based on the information provided by the mentee. Once connected, mentor and mentee agree and initiate a mentoring task.

⁶ INASP reports do not monitor rate of male completers. Our recommendation is to report rates for both genders. See recommendations section.

⁷ Since 2015 new mentors have been undergoing screening process before being able to register in the online system.

They have the option to sign a learning agreement. An automated system monitors how many tasks were initiated and completed (although internal statistics show that there is a disappointing level of completion, perhaps due to people neglecting to mark tasks as completed on the system).

Over the course of the mentorship activity there have been some very successful relationships, including that of a Nigerian chemist who was mentored by a researcher from the university of Michigan. This mentee-mentor relationship eventually led to the mentee being accepted on a six-month work exchange programme at the University of Michigan to work alongside her mentor in her laboratory.

The mentorship work has gradually evolved to address various issues raised by mentors and mentees: the matching system has been improved, mentoring guidelines have been created and mentees are being instructed on how to clearly formulate their needs. It has not always been easy for potential mentees to find a mentor as sometimes those whom they contacted did not respond. In June 2017, the platform showed that, out of 491 mentors, 318 had been active and that, out of 9,331 mentees, 2,276 had been active (i.e. logged into the system in the past 12 months). So, while the general mentor: mentee ratio is 1:19, the ratio of *active* mentors: mentees is 1:7. Our interviews suggest that the activity of mentors and mentees fluctuates depending on their career stage and commitments.

There has been an ongoing effort to improve the system through recruiting more mentors by advertising⁸ and providing guidance on how to get the most out of the collaboration.⁹ The system has been further improved with follow up emails to new mentees, thematic calls for mentors, a mentoring newsletter, a reminder email for outstanding tasks, the introduction of electronic badges, a 'new mentors/mentees in your area' matching tool and an improved search function. Also, a Mentor of the Year award was introduced in 2015 to recognize the work of the mentors who offer their services voluntarily.

Women have been a minority in the mentoring system. In 2015, 33% of mentees and 26.5% of mentors were female (Nobes 2015). However, INASP has been addressing this gap by linking with networks such as the Organization for Women in Science for the Developing World (OSWD) and encouraging more women in the AuthorAID network to sign up as mentors. In 2016 the number of female mentors increased to 30% (Bishop 2016). There are currently 33% female mentors on AuthorAID database (AuthorAID Leaflet 2017).

On average, three to 15 tasks were completed per month between 2013 and 2015 (Liebnitzky 2016). Mentees usually need most support with writing, article planning, proofreading, grant proposal development and language editing (Nobes 2016) and mentors help them with networking and capacity development as well as boost their research-writing confidence (Liebnitzky 2016b). In February 2017, the AuthorAID system had 389 open tasks in mentoring, with most needing support with manuscript editing, study design, publishing process, and discussion (Bishop 2017). Mentees have diverse needs, decide their own path through the mentoring process and hence their experiences are very varied.¹⁰

Multiple interventions

There are also AuthorAID members who have taken part in multiple presentations of the same course and/or taken part in different activities. AuthorAID encourages this combined approach by advertising its activities on the AuthorAID website and within other areas of INASP's work. Detailed analysis of participation in combined approaches was not undertaken.

Methodology

To explore the nuances between the impacts of the three activities, INASP commissioned a study employing a mixed-methods approach comprised of participant observation, a survey, and interviews.

⁸ E.g. Editorial Office News and other relevant societies.

⁹ Blog posts on AuthorAID website how to work effectively with mentors (December 2014).

¹⁰ Mentoring experiences are discussed in depth in the full report, section 5.5.3. Other stories of mentees can be found on AuthorAID website www.authoraid.info/en/news/details/1205.

We reviewed existing INASP studies and carried out a literature review on topics such as online learning, mentoring, science communication and gender in academia. We also joined the offered interventions/activities as participants. We then carried out an online survey, which provided us with data about the experiences of 1,126 researchers around the world. Based on the data, a semi-structured questionnaire was formulated and 13 individuals were selected for the interviews. The results of the interviews helped explain some of the survey data. (Note: In the subsequent text, we refer to survey respondents as “respondents” and those who were interviewed as “interviewees”).

This report brings together the main findings of our integrated multi-method approach.

This study has its limitations as it necessarily employs a cross-sectional design. Data collection occurred only once and only those who had completed an AuthorAID activity were involved. We therefore do not have the perspective of non-completers. There is also the inherent problem that it is difficult to differentiate the effects of interventions on the publication rate from that of natural maturation (i.e. people who took courses much earlier on will have had a longer period in which to publish than more recent course participants). Alternative designs using control groups and longitudinal observation of participants - whilst possibly making comparison easier – were neither feasible nor practical under the circumstances.

Participant observation

To understand the experience of the AuthorAID community, the researcher took part in a MOOC course set up by the administrators especially for the purposes of this study. The researcher completed the course as a regular participant, experiencing the design, content and learning of the course. Similarly, the researcher registered as a mentee and looked for a mentor with whom a mentoring agreement was signed. Content of the intensive course was also reviewed but because of its heavy reliance on the involvement of expert facilitators, participant observation was not feasible. However, facilitators of both MOOC and intensive courses were interviewed to obtain information about the development and content of the course as well as their experiences of facilitation and contact with participants.

Survey

After consultation with INASP, a decision was made to carry out a survey of all possible respondents in the population of people who had been meaningfully involved with one or more of the three AuthorAID approaches under investigation. The target survey population was identified as only those who:

- had completed a MOOC
- had completed an intensive course
- had agreed (not necessarily completed) at least one task as mentees

The survey design and administration

The survey was developed and distributed from SurveyMonkey - an online survey platform. We tried to keep the survey as short as possible whilst still collecting all relevant information because length of survey is known to be a strong determinant of response rate (Deutskens et al., 2004). We also used additional incentives in the form of a draw for Amazon tokens (four tokens each worth US\$50) or the offer of free professional editing services by American Journal Experts (AJE).

The survey contained questions concerning demographics,¹¹ involvement with AuthorAID (timing and activity participated in),¹² publications (before and after engagement with AuthorAID) where the

¹¹ Individual (Age, Gender, Level of Education), Location (Current Country, Country of Origin, Country of Engagement with AuthorAID), Contextual (Main Occupation, Field of Study, Institution Type).

¹² Knowledge of the timing of engagement with AuthorAID allowed us to determine the time that respondents had potentially had to publish. An important factor when comparing outcomes for courses that had taken place at different times.

respondent was the named author or contributor, impact (perceived effect of engagement with AuthorAID) and opinions on specific issues pertinent to the international publishing situation.

The question wording was refined after a pilot study was carried out using six AuthorAID volunteer members who confirmed an average time of completion to be an acceptable 22 minutes. Following consultation and final modifications, the finalized survey, as implemented on Survey Monkey, was 19 pages long and consisted of 40 questions. The survey was launched 20 March 2017 and distributed to 3,148 contacts. Data collection continued until Tuesday 28 March with a reminder email sent out on 23 March.

Survey respondents

A total of 1,126 responses were received.¹³ This represents a response rate of 37% of surveys distributed and over 50% based on confirmed receipt (when the invitation email was confirmed as opened). Although precise comparisons are difficult, this would seem to be a high response rate for this type of survey and certainly generated sufficient data with which to address the main study questions. Demographic characteristics of survey respondents were as follows:

Age	The median age of respondents was 35 years, with an age range of 21-72 years
Gender	58% of respondent were male and 42% female
Country	100 different current countries were represented. The countries with the most respondents were Nigeria with (166), Kenya (92), India (83), and Sri Lanka (64)
Academic qualifications	Master's or equivalent 60% Bachelor's or equivalent 17% PhD 16%
Main occupation	Student 31% University professor / lecturer 26% Researcher 21% Other 11% Consultant 5% Management or policy making 5%
Academic field	Applied Sciences 37% Sciences 26% Social Sciences 18%

¹³ Some respondents did not give complete answers. SurveyMonkey analytics reports 1 128 answers but two answers did not contain any data other than country of origin and were therefore discounted, making the total collected number 1126. Some respondents did not provide answers to some questions. Therefore, total numbers presented in some of the charts do not always give total numbers as 1126.

Other 15%
 Arts or Humanities 4%

Institution type	Higher Education (e.g. University, College) 65%
	Research Institute or Think Tank 13%
	Government or State Department 9%
	Charity or NGO 6%
	Private Company 4%
	Other 4%

The largest number of survey respondents took part in the MOOC, followed by those who had joined the mentoring system, combined MOOC and mentees and finally a smaller number of intensive course takers.

Author AID activity	Survey respondents (according to INASP database)
MOOC	896
Mentees	149
MOOC & Mentee	52
Intensive course	24
Intensive course & Mentee	4
MOOC & Intensive	1

Survey respondents came from the following geographical regions:¹⁴

Region	Number in region	Percentage of total respondents
Sub-Saharan Africa (SSA): Ethiopia, Ghana, Kenya, Nigeria, Tanzania	386	34.2%

¹⁴ Regions were defined by INASP

South Asia (SA): India, Nepal, Sri Lanka, Bangladesh and Pakistan	229	20.3%
Southeast Asia (SEA): Philippines, Indonesia, Vietnam, Myanmar	72	6.4%
Fragile states: Afghanistan, Chad, DRC, Guinea, Iraq, Libya, Sierra Leone, Sudan, Yemen, Somalia	40	3.5%
Other: All countries <i>not</i> in any of the above groups	401	35.5%
Total	1,128¹⁵	100.0%

Interviews

To explore contextual aspects of the survey findings, qualitative methodology was used, namely semi-structured interviews.

Sampling interviewees

The survey results informed and shaped the qualitative component of the study. The majority of AuthorAID participants studied came from South Asia (20%) and Sub-Saharan Africa (34%) and after consultation with AuthorAID team, it was decided that it was important to understand the perspectives of academics from countries representing these two regions. India and Nigeria were selected as they had the most numerous respondents and only a small difference between men and women in terms of numbers of papers published. Nepal and Tanzania, on the other hand, were chosen because of their lower levels of representation in the survey and because there was a clear indication of gender differences in publications – with a strong pro-male bias. Somalia was chosen as representative of a fragile state. Interviewees were to have taken part in a range of AuthorAID capacity-development activities. We also wanted equal numbers of men and women to be represented. Based on these criteria, groups of ‘representative’ individuals were identified – closest to the median age and representing the most commonly observed disciplines and degree types for the country. Survey responses were also screened for ‘interesting’ comments to identify individuals who may have raised issues in open-ended responses which could illuminate the debate. Based on this purposive sampling, 28 people were identified as possible interviewees.

Semi-structured questionnaire

Survey and participant observation informed the development of a semi-structured questionnaire. It was designed after consultation with INASP to guide the interviewees to share their experiences of the academic world and publishing, while giving them space to speak outside the prescriptive framework. The interview questions probed areas of discipline, institutional context, country context,

¹⁵ Some respondents did not give complete answers. SurveyMonkey analytics report 1,128 answers but two answers did not contain any data other than country of origin and were therefore discounted, making the total collected number 1,126. Some respondents did not provide answers to some questions. Therefore, total numbers presented in some of the charts do not always give total numbers as 1,126.

career progression, gender, work-life balance, experience with publication processes and their experience with AuthorAID activities.

Interviewees

An email detailing interview aims and the interviewee selection process was sent to 28 people.¹⁶ In total 13 interviews¹⁷ were conducted between 9 and 22 May 2017 (11 via Skype and two by email). The seven men and six women interviewed came from five countries. Their identities have been anonymized. They were at different stages of their academic careers, ranging from postgraduate, to doctoral and post-doctoral positions. Two of them were employed outside of an academic setting. Most had scientific backgrounds in areas of climate change and mountain ecology, forest resource management, marine pollution, indoor air quality, veterinary medicine, pharmacology and chemistry. The two who had social science backgrounds had degrees in public administration and policy, and library and information studies. Their job titles included Assistant Lecturer, Lecturer, Programme Researcher, Principle Research Officer, Postdoctoral Researcher, Assistant Professor and System Coordinator. Among the seven interviewed men, three were married, two with children and one without. All six female interviewees were married, and all, except for one, had children. 12 of the 13 interviewees took part in MOOC courses and, of these 12, five took also part in other AuthorAID activities.

Interviewees	Mentee	MOOC	MOOC + intensive	MOOC + mentees	Total
Female		3	2	1	6
Male	1	4		2	7
Total	1	7	2	3	13

The interview method allowed us to hear the unique stories of 13 individuals from five countries and brought to the fore factors that facilitate or are barriers to communicating research and career progression in academia.

Findings

Our combined methodologies produced large quantities of data that could be interpreted in extensive volumes. In this report, we present findings pertinent to the study questions and additional findings important to the work of INASP. This section looks at the overall difference between the three AuthorAID approaches, perceived impact versus publication outputs, success rates for each approach and contextual factors that may contribute to or hinder publishing among AuthorAID project participants.

Overall difference

The first study question defined by the ToR was:

¹⁶ Emails were sent on 8 and 9 May 2017, along with a reminder on 16 May 2017.

¹⁷ The interviewees understood that their interviews would be recorded, transcribed, analysed (using NVivo) and used for final report and promotional materials.

What is the overall difference in the three AuthorAID approaches with respect to enabling early-career researcher capacities?

Our combined methodology revealed that all three types of AuthorAID activities are highly regarded by participants and feedback about the mentoring support, course structures, content and impact is overwhelmingly positive. The feedback for all activities includes many affirmations and positive comments.

Our interviews confirm that the three AuthorAID capacity-development activities are suited to different audiences as a result of their content and approach. In general, the MOOC is most suited for undergraduates and graduates with less experience of the general publishing environment as it provides a broad orientation in the field. Individuals with more experience, or who are further along in their careers in fields relating to environmental health, can benefit more from intensive courses that are more focussed and specific. Mentoring is appropriate for those who want targeted, one-on-one support.¹⁸

We found that the regional and political context where researchers live have an impact on ability to publish. For example, unpublished researchers from fragile countries and Southeast Asia have only a 12% likelihood of publishing a paper following an AuthorAID course. Unpublished researchers from other regions are nearly twice as likely to publish (23%) following an AuthorAID course. The reasons for this are not immediately discernible from this study.

Our interviews have shown that online mentoring has the potential to link mentees to those who, though physically distant, are competent and often more interested in the mentees' subject areas than their official supervisors in their respective institutions. AuthorAID mentors choose to take on a mentee on a voluntary basis when it suits their time availability and interest. This makes their guidance highly engaged.

Although the AuthorAID courses are aimed specifically at facilitating publishing in peer-reviewed journals, their influence and impact are much wider. There was considerable evidence of improvements in general writing and research skills as well as an increase in confidence. 56% of all survey respondents believed that AuthorAID helped them publish more papers. All three activities impacted positively on researchers' confidence, their ability to prepare papers and other publications, their understanding of the publication process, and the originality and quality of their research. This general increase in skills and capacities resulted in a wide range of publishing-related activity, which should definitely be considered when evaluating the AuthorAID project in future.

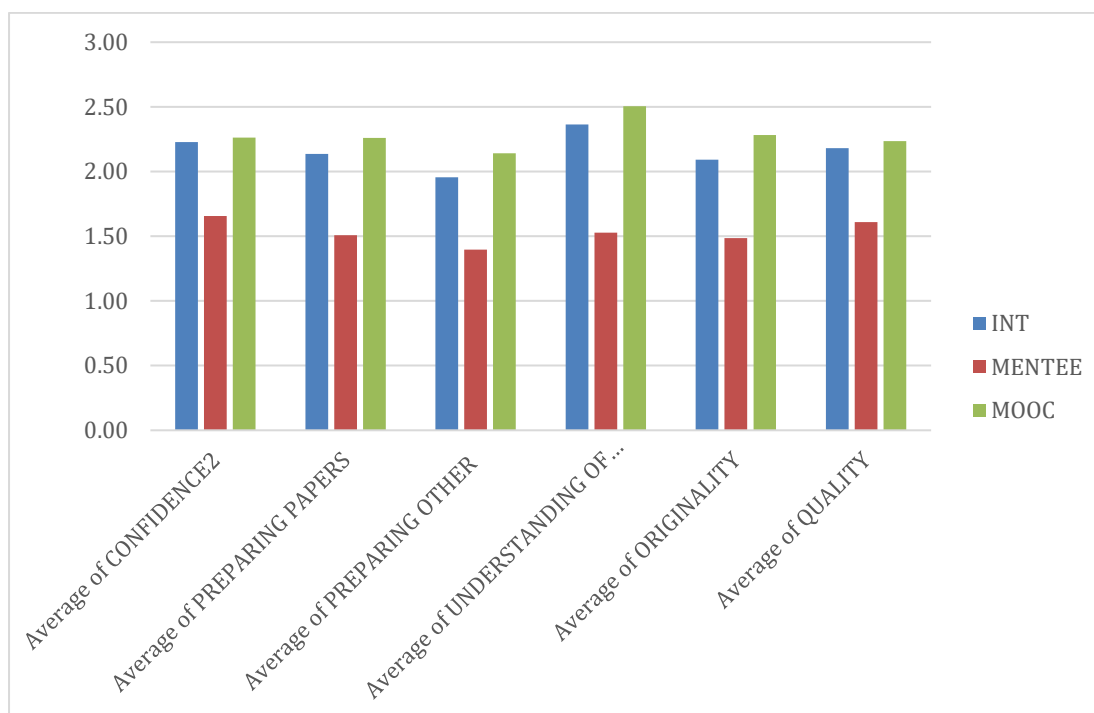
An open-ended question in the survey asked about any other areas where AuthorAID had impacted on respondents' publication. Some of the common themes to emerge were [understanding of] plagiarism (38 mentions), [awareness of] predatory journals (30 mentions) and networking (26 mentions).

Interviews showed that AuthorAID members have ambitions of achieving academic excellence. Many of the interviewees connected their scientific endeavours with altruistic motives to contribute to their countries' development. They clearly recognized that achieving excellence hinges on their continual development, including teaching, conducting high-quality research, producing publications, and having international experience.

Perceived impact versus publication outputs

An interesting finding is that while MOOC participants did not publish as much as participants in other AuthorAID activities, they reported the highest perceived impact (confidence, understanding of the publishing process, quality and originality of research). This seems to be broadly true independent of the specific MOOC course taken. Mentees, who were the second most successful in publishing (after intensive course participants), consistently reported the least perceived impact of AuthorAID activities. The chart below shows the average perceived impact on a scale -1 (negative impact) to +3 (large positive impact) for six different areas/skills.

¹⁸ For more details, see section 5.5.3 of the full report.



On average, MOOCs have the highest impact rating, followed by intensive courses, then mentees across all areas of perceived impact.

An explanation may be that mentees are more experienced researchers who get helped by AuthorAID mentors with single specific tasks. Whereas the MOOCs provide people with a general understanding of what is required for one to publish, mentees receive targeted help in specific areas.

We attempted to explore this in the interviews. Our hypothesis was that course participants felt better about their learning because the course was giving them “certified” knowledge and because they were learning in an organized way along with others. (Mentees do not experience a sense of community and they do not receive certificates.) This would be in line with the Community of Inquiry model, which proposes that meaningful learning happens when, besides teaching and cognitive presence, social presence is established. MOOC and intensive course participants were therefore asked about their views on the course certificate and course discussion forums. However, the results are inconclusive.

Overall, nine people among the 13 interviewees valued the social aspect of AuthorAID courses positively.¹⁹ On the positive side of the comments, discussion forums made participants realize that they were not the only ones “who do not know” and that many others are in similar positions. Although interviewed course participants did not express enthusiasm about receiving certificates, they did use them to evidence their career development in their CVs and professional appraisals.

To explain why mentees report smaller perceived impact, we can use a metaphor: It is the difference between taking driving lessons (a course) and someone sitting beside you while you practise driving (mentoring). The first will be seen as having active impact, the second as supporting you in exercising your skills. It is far more likely that you expect impact from a course in a way that you do not for an ongoing process like mentorship, which you expect to be more of a support than enabling a quantum leap in skills or knowledge.

¹⁹ Five of the six female interviewees made positive comments about the social element of the AuthorAID online courses and one made a neutral comment. While among the male interviewees, four made positive comments, one neutral, and two (in their twenties) made negative comments. This may point to a gender (and possibly age) imbalance in perception of the social element of the course with males more likely to view it in negative terms.

Success rates for each approach

The second ToR question was:

What is the success rate for each type of approach regarding production and publication of manuscripts?

Interviews revealed that finding time to do research and prepare publications among all other duties and commitments can be challenging for academics. This is especially true for those in teaching positions and for women (see further section on gender). Success in production and publication of manuscripts is therefore linked to successful time management.

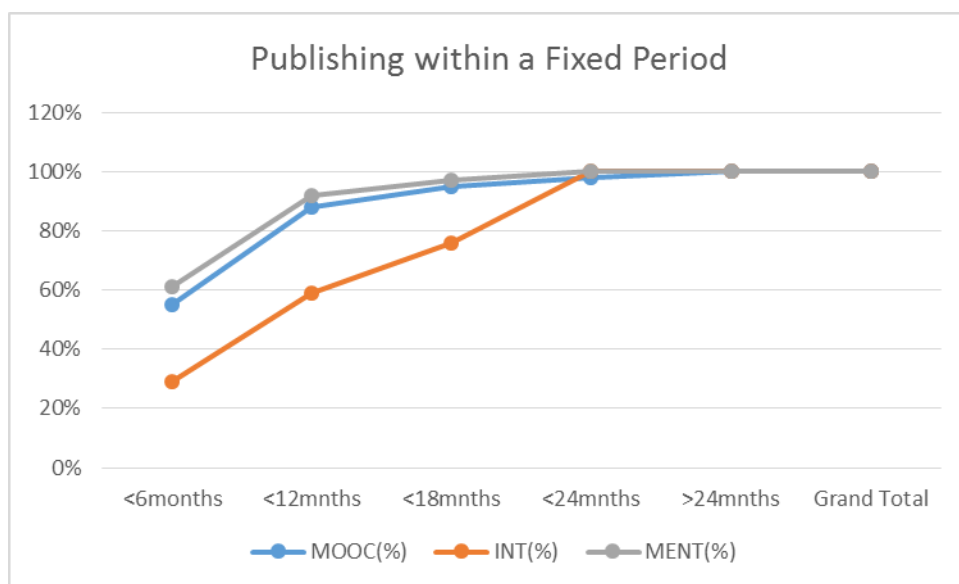
According to our survey, 39% of people published at least one paper in peer-reviewed journals in the period between their involvement with AuthorAID and March 2017. The group most likely to have published was the intensive course group (67%). Our survey found no indication that different presentations of the intensive course resulted in different patterns or numbers of subsequent publications - however, this is not surprising given the small numbers of respondents from each presentation. The second group most likely to publish were mentees (60%), followed by the combined MOOC and mentee (44%) and MOOC course participants (34%). A chi-Squared test indicated that this difference was highly significant ($P < 0.01$). A similar pattern applies for overall publication activity with intensives having the highest scores and MOOCs having the lowest.²⁰

It is important to note that different courses took place over different time periods resulting in different respondents effectively having had different time windows within which to publish. To account for this, we looked at publishing within a fixed period of one year following involvement with AuthorAID. We found a similar pattern to overall publication with intensives being most likely to publish (59%), followed by mentees (53%) then MOOCs (36%). Note that these numbers cannot be compared directly with those for overall publication because they were based on different questions from the survey. Many respondents did not answer the question about the time period of publication (63% MOOCs, 21% intensives & 11% MOOCs).

The further back the engagement with AuthorAID, the more likely people were to have published subsequently. This pattern was clearest for the MOOCs: of those who completed the course four months before the survey, only 27% had published compared to 71% of those who had completed the course 30 months prior to the survey.

For those who had published at least one paper following involvement with AuthorAID, we asked about the period within which publication first occurred – i.e. how quickly did they publish following an AuthorAID course:

²⁰ Our Post-Publication Index measure incorporated publishing activities in a variety of formats and across different platforms. We found that intensive course participants showed the highest overall level of publishing activity followed by mentees, then MOOC participants who had also been mentees, with MOOC participants showing the lowest level of publishing activity. However, this should be treated with caution because of the different time periods since AuthorAID engagement i.e. the difference could be because intensive courses were held longer ago than some MOOC courses.



All those who had published reported doing so within 24 months following engagement with AuthorAID. MOOCs and mentees performed similarly, intensive course participants seemed somewhat slower to publish on average.

Combined activities

While the small numbers of those involved in multiple activities made it impossible to analyse the data by timeframe, there was no statistical evidence that doing multiple courses of the same kind, or combinations of different courses, resulted in either more publications or a greater amount of publishing-related activity.

However, the interviewees who had taken part in multiple AuthorAID activities believed that they benefitted from each course in a different way. For example, the combination of MOOC and mentoring provided researchers with a theoretical orientation and practical application of their learning under the guidance of a more experienced individual. Similarly, those who took part in a MOOC and intensive course believed that the MOOC gave them a broad understanding and the intensive course provided them with an in-depth understanding focused on environmental health.

Notably, the 13 interviewees displayed limited knowledge about other AuthorAID offerings except for those they had taken part in. So, although mentoring is advertised in the MOOC course, interviewed MOOC participants were by and large unaware of it. This may suggest that if people see information about mentoring and other AuthorAID offerings but do not sign up immediately, they are likely to forget about them.

Context

The third study question as per the ToR was:

Is there a significant difference in the publication rate of the three approaches in terms of individual, institutional and country contexts?

To understand the contextual factors that affect publications among the AuthorAID community, multiple regression was used to determine factors that influence the probability of publishing within one year of engaging with an AuthorAID activity. The factors included were Pre-Publication (whether the respondent reported publishing prior to involvement with the AuthorAID project or not), Gender, Age, Geographical Region, Field of Study and Qualification. The intervention variable was type of AuthorAID activity, including the different presentations of the MOOC course.

Those who have published prior to engagement with an AuthorAID course are more likely to publish afterwards than those with no previous publication record and those with a PhD are significantly more likely to publish within a year compared to those with a Bachelor degree.

Comparison between activities has shown that:²¹

- Mentees are more likely to have published within a year compared to participants of any of the other courses²²
- MOOC 2 participants are less likely to have published within a year compared to MOOC 1 participants, participants of the intensive courses and mentees. They are more likely to have published compared to MOOC 3 participants and participants of the two Mini MOOCs
- MOOC 3 participants are less likely to have published within a year after the activity than MOOC 1 participants (most likely because they had only about four months to publish between activity and the survey)

We examined the degree to which these differences are significant. Significant *p*-values were found for the mentees and MOOC 3 when compared to MOOC 1. The MOOC 3 results are clearly understandable – they had only about four months in which to publish as stated above. The significant *p*-value for mentees allows us to state *that more mentees publish within a year after the course compared to MOOC 1 participants*. Because of the limitations of the study design, however, it is difficult to attribute this difference in publication rates definitively to the mentee activity.

Age and pre-publication index

There were large differences in amount of publishing experience prior to engagement with AuthorAID. 43% of survey respondents had no published papers and 79% had no published book chapters; at the other extreme, 17% had ‘more than four’ published papers and 10% had ‘two or more’ published book chapters. The number of publications prior to AuthorAID differed widely depending on the different course types.

A similar pattern was seen for book chapters and overall publishing-related activity.

This pattern was also confirmed in the interviews. The interviewees who had not published before encountering AuthorAID were at early stages of their careers and some worked outside academia. They spoke of the challenging processes of getting their first publications out - not understanding how to produce their manuscript and then publish. These interviewees said that taking part in AuthorAID MOOCs provided them with the encouragement and understanding they needed to start the process.

The interviewed professional academics who were at later stages of their careers all had publications. And, although they had published before taking part in the MOOC course, they still felt that taking part in the course was helpful and improved their understanding of the “dos” and “don’ts” of publishing. This understanding helped them speed up their publication process and produce more publications.

21

Publication in1y	Coef.	p-value	Exp(Coef.)
MOOC#3	-0.843	0.000	0.430
Mini MOOC#1	-0.5	0.237	0.606
Mini MOOC 2	-0.372	0.283	0.69
MOOC 2	-0.213	0.323	0.808
Intensive	0	-	1
Mentee	0.695	0.044	2.005

²² The larger the Exp(Coef.) value the more likely participants of the respective courses are to have published within a year in our dataset.

The publication rate seemed to accelerate, especially among those who have supervised postgraduate students as they were often mentioned as co-authors on their students' papers.

Gender – women progress at slower pace

There is a growing body of literature concerned with the gender aspects of academia. It suggests that there are gender imbalances in various academic fields and that women face gender-specific challenges (Chesler and Chesler 2002, Dean 2009, Savonick and Davidson 2017). Savonick and Davidson point out that decision-making actors in academia are usually convinced that their own judgements are based entirely on “quality”, “expertise” and “excellence” of people’s work. But changing candidates’ gender identification radically changes the way their work is evaluated, with men’s work being consistently judged as better than women’s. So, although people think they are being unbiased, in reality they are. This is known as unconscious or implicit bias, a bias that exists on the subconscious level and that stems from hidden attitudes and beliefs determining our preferences for certain groups over others. Interestingly, both men *and* women make biased judgements in favour of men due to persistent cultural imagery portraying men as academically brilliant (Savonick and Davidson 2017). Dean points out that there is often discussion about work-life balance when talking about women in academia but such discussion is absent when talking about male academics (Dean 2009). This reflects the gendered expectation that women have more responsibilities beyond work than men, especially caring duties towards family members.

AuthorAID’s internal studies have collected gender-specific data which indicate that women are more successful in completing courses than men. Nzegwu’s report on MOOC 1 participants indicates that women report a smaller increase in confidence than men²³ (Nzegwu 2017).

Our survey data indicated that women were less likely to publish following an AuthorAID course than men (38% of women publish compared to 44% of men) and that the total amount of publishing-related activity is lower for women.

Our interview enquiry revealed that while most interviewees thought that being admitted to higher education and progress in academia and publications were judged purely on basis of merit, they conceded that women academics face more challenges than men.²⁴ Interviews from all five countries explained fewer numbers of women in academia in terms of social and cultural pressures as well as ideas about women’s abilities (such as inability to cope in hard environments).

“People basically prefer to educate men rather than women. The reason may be, it is easier [for] the men to get job and contribute [to] the family income ... Women in Somalia don’t have opportunity to remain in academia. They face challenge of early marriage [and] social discrimination.” (email response from social science graduate Interviewee 11, Somalia, male)

“Comparatively, they [women] are getting less [of an] opportunity from their parents, or from their guardians. (...) male candidates always want females inside the complex, and do not like to see them outside and do not like to encourage them to show their talent.” (Interviewee 6, Nepal, male)

²³ “The analysis indicates that areas of difference between males and females lie in the *degree* of agreement or disagreement. For example, if all who agree on deriving some level of confidence from the course are examined, very little difference emerges between males and females. However, if we examine the group who “completely agreed”, presumably meaning that they have no doubt that the course enabled them to be more confident to write their research papers, we see an 11 percent point difference emerge between men and women. Similarly, among those who “completely agreed” that they had been enabled to publish as a result of the course, there was a 10 percent point difference by gender, with less of a difference emerging when all in agreement were taken as group.” (Nzegwu 2017, 2)

²⁴ Looking back at their survey responses, our 13 interviewees were equally divided on this issue. Five disagreed with the statement (four males and one female from India and Nepal); three neither agreed nor disagreed (two males and one female from Nigeria and India); and five agreed (one male and four females from Somalia, India and Nigeria).

“*[during my undergraduate level] most of the people asked me ‘why do you want to study? Just get married and settle your family’ (...). So, it’s quite a struggle for me to progress further in my education.*” (Interviewee 4, Nepal, female)

“*The challenge that we have as women – African women – is that at a certain age, we are expected to get married. Like, I’m married – I got married at the age of 25, after I had finished my first degree. And when you marry, you can’t tell your spouse that you want to go back to school, so you have to stay back at home, make your babies and take care of your babies, before you can now go to school.*” (Interviewee 7, Nigeria, female)

The interviewees thought that women can do well in academia, if they are given opportunities and have a supportive environment. What all interviewees agreed on was that women have less time than men due to the domestic and social duties ascribed to their gender in their cultural contexts.

“*There are so many responsibilities for women in Nigeria, so it takes extra effort for the women to progress at an equal rate as the men. (...) You see, man and woman have the same opportunities and if they have the same talent, the man will go further. (...) Men have more time.*” (Interviewee 9, Nigeria, female)

And, as work on publications often requires time outside working hours, women’s careers progress at a slower pace, especially for those who have children.

“*And, being a mother, and a family person I have to attend to my family too so it is a problem. I find myself in a difficult situation sometimes – I don’t have time for publishing, I don’t have time for writing, sometimes I have to work maybe overnight or late nights so that I can accomplish my work and things like that so it is difficult. It is a little bit difficult.*” (Interviewee 12, Tanzania, female)

The interviewees deployed various strategies to balance work and family, which were essentially centred around careful time management. This included working outside normal working hours, prioritizing and managing day to day household duties, often with the help of relatives or paid domestic workers.

Regional, national and institutional context

Survey respondents came from all over the world, with the majority from Sub-Saharan Africa, South Asia, and other countries. Southeast Asia and fragile states had relatively few representatives (see table below).

	Intensive	Intensive + mentee	Mentee	MOOC	MOOC + intensive	MOOC + mentee	Total
Sub-Saharan Africa (SSA)	10	4	49	303	1	19	386
South Asia (SA)	4	0	21	200	0	4	229
Southeast Asia (SEA)	0	0	4	65	0	3	72
Fragile states	0	0	3	37	0	0	40

Other	10	0	72	291	0	26	399
Total	24	4	149	896	1	52	1126

Our survey data suggests that in most regions about 40% of people publish after encountering AuthorAID. However, Southeast Asia stands out as publishing less – only 25% of people from Southeast Asia publish after taking part in the three AuthorAID activities being studied (see table below).

Region	Number publishing post-AuthorAID (total respondents)	Percentage
Sub-Saharan Africa (SSA)	158 (359)	44.0%
South Asia (SA)	95 (214)	44.4%
Southeast Asia (SEA)	16 (64)	25.0%
Fragile states	15 (37)	40.5%
Other	154 (376)	41.0%

We looked specifically at the post-AuthorAID publication record of *those people who had not published prior to engagement with AuthorAID* – people new to the publishing, who we refer to as ‘starters’.

Region	Number of ‘starters’ who published post-AuthorAID (total number of ‘starters’)	Percentage
Sub-Saharan Africa (SSA)	35/159	22.0%

South Asia (SA)	26/90	28.9%
Southeast Asia (SEA)	4/34	11.8%
Fragile states	2/17	11.8%
Other	31/151	20.5%

If you are an unpublished researcher, the likelihood of publishing a paper following an AuthorAID course is 12% for those from fragile regions or Southeast Asia compared to an average of 23% for people from all other regions. Our interviews have not explored why there is this regional difference in publications as the decision was made to focus on Sub-Saharan Africa and South Asia.

However, the interviews indicate that national policies and higher-education priorities impact on the capacity of researchers to progress in their academic careers. The interviewees spoke about several challenges related to higher education in their countries. For students, this includes lack of access for rural populations to higher education, tuition fees, entrance exams, high competition for certain placements, and inadequate guidance by supervisors. For career academics, the main challenge was a lack of funding (also expressed in terms of a smaller pool of grant schemes they can apply for) that would allow them to set up labs, get instruments and materials for their work, and get access to current research in various paid journals. They also mentioned problematic bureaucratic processes, lack of infrastructure in terms of equipment and internet connectivity. The experience of most interviewees (except for two from India) has been such that, while institutions formally express support for their academic development, in reality such support is extremely limited, making it (among other things) very hard for them to attend international conferences.

“Currently my country is underfunding Higher Education and research in Higher Education. So, at times we do not have enough facilities. I do synthetic chemistry and evaluating the products for biological activity. After synthesis, you need to analyse your compounds and at times the mass spectrometer is not at the University. So, some good instruments that you need are not there. If those things were in place, definitely it would help. It would allow for the research to go faster.” (Interviewee 9, Nigeria)

Additional finding – mobility

It was widely acknowledged that the opportunities for potential development of academic and research careers were markedly different in different countries. Academia and research are potentially very “mobile” careers, often requiring people to relocate to further their career ambitions. The opportunities for international moves were also seen by some as a positive outcome of their chosen career field. In other words, the potential to move internationally was viewed as both a requirement for progression and sometimes as a desired outcome of a research career.

From our survey, a total of 203 (18%) people were not currently based in their country of origin and 123 (11%) people were not currently based in the country where they had been when they first encountered AuthorAID. When asked about the reasons for the move, 80% of those who had moved had done so “to pursue an academic or research career” with only 3% indicating that the main reason was “to join family” and 2% indicating that the move was due to the “political or economic situation.” This shows a considerable international mobility in the population both from country of origin and since first engaging with AuthorAID.

This does raise a question about whether elements of AuthorAID do promote brain drain, albeit inadvertently. While we do not have conclusive answers, our interviews suggest that academics do not consider migration for better living standards, per se. Rather their migration is largely motivated by the opportunity to acquire more experience and further their subject knowledge. Eight of the 13 interviewees spoke of their (altruistic) ambitions to use their knowledge and experience acquired both locally and abroad for the benefit and further development of their countries.

Our interviews further confirm that international experience (such as fellowships and conference attendance, for instance) is extremely important. It helps academics network with other researchers in their field (in case of fellowships), access instruments and resources that are unavailable in their institutions or even in their countries, and enables them to publish better-quality papers.

“The few publications I have had, I was able to write them because of the [laboratory] instruments I was able to use abroad.” (Interviewee 9, Nigeria)

“It [international experience] is required for the career to be fulfilled. It is required. Because, you know, you cannot be self-sufficient. The research needs to keep growing. And you grow when you meet people. And you grow when you are out and know what other people are doing. That is important.” (Interviewee 1, India)

Supporting academics to develop their careers and providing them with international experience can undoubtedly improve the quality of their work.

Conclusions

The survey and interviews produced a wealth of information about the experiences of participants of three types of online AuthorAID capacity-development approaches – those who have completed Massive Open Online Courses (MOOCs) in Research Writing, Pure Earth/ Blacksmith Institute (intensive) courses “Research Writing in Environmental Health” and those who accepted a task within the AuthorAID mentorship scheme. Although specific differences could be identified in the outputs and impact of these activities, it is clear that all the approaches have considerable value for individuals in different research contexts and at different stages in their career. Besides differences in publication output and perceived impact of AuthorAID activities, we have explored issues surrounding regional and institutional context, mobility, and gender.

This study has produced a large body of information that could be utilized further and would sustain additional targeted analysis. Moreover, the in-depth interviews provide a detailed picture of individual experiences with AuthorAID courses and highlight many relevant aspects of academic lives. Interview quotes could be especially useful in AuthorAID’s communication materials.

Recommendations and suggestions for future work

It is commendable that AuthorAID courses continue to develop based on continuous feedback from participants. Furthermore, it is laudable that they take into account the infrastructural and technical issues that researchers face in low- and middle- income countries. The courses are designed specifically to accommodate internet bandwidth limitations and irregular power supplies, providing participants with downloadable materials and clear guidelines for submission. This makes the experience as hassle-free as possible. However, there are still areas of AuthorAID work that can be explored and improved further.

Publishing papers in peer-reviewed journals is a key part of developing an academic or research career across all disciplines. Our study has highlighted a variety of demographic and contextual factors that impact on an individual’s ability to publish. Further research (through interrogation of existing data as well as new targeted studies) might usefully address the following questions:

1. Why do AuthorAID users from Southeast Asia apparently publish less than people from other regions?
2. How can researchers from fragile states be supported to publish?

3. How does mobility impact on research careers, both in terms of moving to pursue career options and ability to travel to conferences?
4. How can specific barriers to publication be minimized or alleviated?
5. What can be done to address gender imbalances in publication?

Our recommendations concern the following areas:

- **Presentation format:** Our study showed that more could be done to increase confidence and other areas of perceived impact, especially among mentees. Further work might be done on creating a sense of ‘social presence’ specifically in the mentorship work; membership of a ‘community’ might afford added benefits.
- **Collecting course data:** If future work is to involve comparing outcomes between courses, it is important to incorporate comparable outcome measurements within each course and at equivalent time periods. Also, because publishing is often a process that takes considerable time, feedback should be collected from participants after suitable time periods.
- **Gender:** gender-specific data for women *and men* should be collected. Gender-specific issues consistent with cultural context should be taken into account in the development and implementation of courses to ensure neither gender is disadvantaged.
- **Course content:** Time management was mentioned by many respondents and interviewees as a primary obstacle for their publishing. We therefore recommend that AuthorAID courses include more tips on how to create time to work on manuscripts.
- **Inter-activity promotion:** People who did multiple types of AuthorAID courses generally reported increased benefits. However, there was little awareness of other AuthorAID offerings for people who only did single courses. Our recommendation therefore is for AuthorAID to increase inter-activity promotion.
- **Inclusive feedback:** The present study only involves feedback from those who had successfully engaged with AuthorAID courses – it is equally (perhaps more) important to gather information from those who fail to complete courses, or get a mentor etc. to ensure optimal engagement.
- **Mentoring and MOOC for starters:** Previous publication experience was the strongest determinant of future publication success. We recommend that AuthorAID establish how to best support those who come to AuthorAID with no previous publication record. It seems that this group could especially benefit from mentoring or peer-mentoring activities.
- **Intensive courses for other disciplines:** Given the success of the intensive course format, it may be worth considering developing intensive courses for other disciplines.
- **Continue to learn from feedback:** Participants had strong and informed opinions about what they had most benefitted from and about what they required from AuthorAID courses. Furthermore, the publishing environment itself is in a continuous state of flux. Therefore, we recommend that AuthorAID continues to collect, analyse and learn from participants’ experiences in order that courses are responsive to individual needs.
- **Develop better understanding of impact:** The existing AuthorAID courses focus largely on publishing research papers in peer-reviewed journals. However, the impact of these courses can also be seen in other areas of research and publishing activities. Developing ways of understanding impact and measuring the outcomes in these other areas will help in evaluating existing courses and developing new ones.

List of internal INASP reports and documents reviewed

- Bishop, Sylvia. 2016. 'Communications Analysis AuthorAID / JOLs: SRKS Year 4, Q3, 1st September 2016 – 15th November 2016'. INASP.
- . 2017. 'Communications Analysis AuthorAID / JOLs: SRKS Year 4, Q4, 1st December 2016 – 26th March 2017'. INASP.
- INASP. 2016. 'AuthorAID Builds Research-Communications Capacity in the Global South: Improving Skills and Capacities in Different Ways'.
- . 2017. 'AuthorAID Leaflet'.
- Liebnitzky, Jan. 2014. 'AuthorAID Mentor Survey 2014'.
- . 2016a. 'Blacksmith and AuthorAID Intensive Research Writing Course 2014-2015 – Mini Evaluation'. INASP.
- . 2016b. 'Capacity Building of Researchers from the Global South: Comparative Analysis of AuthorAID Approaches'. INASP.
- . 2016c. 'Impacts of AuthorAID's and Pure Earth's Intensive Research Writing Course'. INASP.
- 'Mentoring and Collaboration'. 2017. Accessed March 1. www.authoraid.info/en/mentoring.
- 'Mentoring Support'. 2017. Accessed March 1. www.authoraid.info/en/mentoring/mentoring-support.
- Murugesan, Ravi. 2012. 'Report on Survey of AuthorAID Mentors in December 2012'.
- . 2013. 'Report on AuthorAID Online Courses: September to November 2013'. INASP.
- . 2014a. 'Outline-AuthorAID- Blacksmith Online Research Writing Course Pdf'.
- . 2014b. 'Survey of the Participants of the First AuthorAID-Blacksmith Online Course in Research Writing'.
- . 2014c. 'Highlights of the "Mini MOOC" (6th AuthorAID Online Course in Research Writing)'.
- . 2014d. 'Summary of the 3rd AuthorAID-Blacksmith Online Course in Research Writing (Environmental Health)'.
- . 2015a. 'Key Data from Online Course: 2015 Mini MOOC'.
- . 2015b. 'Key Data for an Online Course'. INASP.
- . 2016. 'Outline of the AuthorAID Research Writing Course'.
- . 2017. MOOCs and Intensive online courses: institutional history Interview by Zuzana Hrdličková.
- Nobes, Andy. 2015. 'AuthorAID Online Mentoring: AuthorAID Project Meeting November 2015.' November.
- . 2016a. 'Online Learning for Building Capacity of Researchers in Developing Countries 25th May 2016, ELearning Africa, Cairo.' Cairo, May 25.
- . 2016b. 'AuthorAID - Supporting Early Career Researchers in Developing Countries'.
- Nzegwu, Femi. 2017. 'AuthorAID MOOC Survey: An Analysis of the Findings.'

List of references

- Anderson, Terry. 2008. 'Delivery, Quality Control, and Student Support of Online Courses'. In *Theory and Practice of Online Learning*, edited by Terry Anderson. Athabasca University Press.

- Angelique, Holly, Ken Kyle, and Ed Taylor. 2002. 'Mentors and Muses: New Strategies for Academic Success'. *Innovative Higher Education* 26 (3): 195–209.
- Bierema, Laura L., and Sharan B. Merriam. 2002. 'E-Mentoring: Using Computer Mediated Communication to Enhance the Mentoring Process'. *Innovative Higher Education* 26 (3): 211–27.
- Chesler, Naomi C., and Mark A. Chesler. 2002. 'Gender-Informed Mentoring Strategies for Women Engineering Scholars: On Establishing a Caring Community'. *Journal of Engineering Education*, January, 49–55.
- Colvin, Janet W., and Marinda Ashman. 2010. 'Roles, Risks, and Benefits of Peer Mentoring Relationships in Higher Education.' *Mentoring & Tutoring: Partnership in Learning* 18 (2): 121–34.
- Dean, Donna J. 2009. *Getting the Most out of Your Mentoring Relationships: A Handbook for Women in STEM*. Dordrecht, Heidelberg, London, New York: Springer.
- Deutskens, E., K. de Ruyter, M. Wetzels and P. Oosterveld. 2004. Response rate and response quality of internet-based surveys: an experimental study. *Marketing Letters* 15(1): 21–36
- Freeman, Phyllis, and Anthony Robbins. 2006. 'EDITORIAL: The Publishing Gap Between Rich and Poor: The Focus of AuthorAID'. *Journal of Public Health Policy* 27: 196–203.
- Garrison, D. Randy. 2007. 'Online Community of Inquiry Review: Social, Cognitive, and Teaching Presence Issues'. *Journal of Asynchronous Learning Networks* 11 (1): 61–72.
- Haggard, Stephen. 2013. 'The Maturing of the MOOC: Literature Review of Massive Open Online Courses and Other Forms of Online Disatnce Learning'. BIS Research Paper 130. Department for Business, Innovation and Skills.
- Hart, Carolyn. 2012. 'Factors Associated with Student Persistence in an Online Program of Study: A Review of the Literature'. *Journal of Interactive Online Learning* 11 (Number 1): 19–42.
- Hurst, Terry, and Janice Thomas. 2008. 'Developing Team Skills and Accomplishing Team Projects Online'. In *Theory and Practice of Online Learning*, edited by Terry Anderson, pages not included Chapter 18. Athabasca University Press.
- Liyaganawardena, Tharindu Rekha, Andrew Alexander Adams, and Shirley Ann Williams. 2013. 'MOOCs: A Systematic Study of the Published Literature 2008-2012'. *The International Review of Research in Open and Distance Learning* 14 (3): 202–2227.
- Marina, Brenda H.L., ed. 2015. *Mentoring Away the Glass Ceiling in Academia: A Cultured Critique*. London: Lexington Books.
- McSporran, Mae, and Stuart Young. 2001. 'Does Gender Matter in Online Learning?' *ALT-J* 9 (2): 3–15.
- Moisey, Susan D., and Judith A. Hughes. 2008. 'Supporting the Online Learner'. In *Theory and Practice of Online Learning*, edited by Anderson. Athabasca University Press.
- Murugesan, Ravi, Andy Nobes, and Joana Wild. 2017. 'A MOOC Approach for Training Researchers in Developing Countries'. *Open Praxis, ICDE*.
<https://openpraxis.org/index.php/OpenPraxis/article/view/476>
- Nielson, Troy R., Dawn S. Carlson, and Melenie J. Lankau. 2001. 'The Supportive Mentor as a Means of Reducing Work–Family Conflict'. *Journal of Vocational Behavior*, no. 59: 364–81.
- Rourke, Liam, and Heather Kanuka. 2009. 'Learning in Communities of Inquiry: A Review of the Literature.' *Journal of Distance Education* 23 (1): 19–48.
- Savonick, Danica, and Cathy N. Davidson. 2017. 'Gender Bias in Academe: An Annotated Bibliography of Important Recent Studies'. Accessed April 25. blogs.lse.ac.uk/impactofsocialsciences/2016/03/08/gender-bias-in-academe-an-annotated-bibliography.
- Sedlacek, William E., Eric Benjamin, Lewis Z. Schlosser, and Hung-Bin Sheu. 2007. 'Mentoring in Academia: Considerations for Diverse Populations'. In *The Blackwell Handbook of Mentoring: A Multiple Perspectives Approach.*, edited by Tammy D. Allen and Lillian T. Eby, 259–80. Malden, USA; Oxford, UK; Carlton, Australia: Blackwell Publishing Ltd.