

GILE Journal of Skills Development

Women Scholars Pilot E-mentoring Peer Program: An Exploratory Study

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Abstract

Despite a growing body of research exploring e-mentoring among women, literature on e-mentoring in peer teaching between women scholars is limited. Women scholars often face challenges which hinder their academic progress. These challenges include gender bias, limited access to professional networks, and difficulty in balancing work and family responsibilities. Aiming to foster an inclusive research community for women from diverse backgrounds, this exploratory study examined the experience of six women scholars in a 6-week Pilot E-mentoring Peer Program hosted by the Ronin Institute Women's Interest Group. The objectives of this pilot program were to empower women scholars by offering professional and psychosocial support from their peer scholars. Participants were asked to create a participant profile followed by a self-matching process to find their peer-mentor. Participants were expected to communicate at least one hour every week for six weeks via an agreed digital communication method with self-directed mentoring goals. A survey, including Likert scale, open-ended and close-ended questions, was designed to explore participants' experience of the program. We conducted basic text analysis on the open-ended responses and used a descriptive approach to present the results. Our findings evidenced the presence of professional and psychosocial support between participants, achieving the aim of this pilot program.

Recommendations for future improvements include extending the mentoring period, expanding participant networks, and offering continued support after the program finished. The practical implication of such programs has the potential to create inclusive academic environments that support underrepresented groups.

Keywords/Keyphrases: e-mentoring, peer teaching, women scholars, women in research, digital communications, mentoring in academic and industry

1. Introduction

Ronin Institute is a virtual organisation for independent scholars around the world. While higher education institutes have departments for different academic disciplines, Ronin Institute has Interest Groups where members met and collaborated on topical projects. Unlike traditional institutes, these Interest Groups were self-organised and community-based thus allowing cross-disciplinary exchange, enabling members to contribute and participate at a level of their own commitment. Ronin Women was one of the Interest Groups where women independent scholars with different academic backgrounds from all over the world, spanning at least six different time zones, met once every month through online platforms. Ronin Women aimed to support and foster an inclusive research community for women, as well as facilitating the professional development and psychosocial well-being of these scholars.

1.1. Peer Mentoring and Women Scholars

Peer mentoring, as known as peer teaching or peer learning, is a dynamic relationship between peers who share the process of learning and growth for professional support and development (McLoughlin et al., 2007; Rockinson-Szapkiw et al., 2021). Peer mentoring programs play a crucial role in addressing the unique challenges faced by women scholars by providing tailored professional and psychosocial support, guidance, and opportunities for professional development (Murphy et al., 2024; Schmidt & Faber, 2016; Smith et al., 2024; Wendt & Jones, 2024). In supporting community building and reducing isolation, peer mentoring fosters collaboration and mutual learning among participants. Long-term studies of peer mentoring have shown significant improvements in academic skills, confidence, and career progression for women in academic medicine (Mayer et al., 2014; Sambunjak et al., 2010).

1.2. E-mentoring in Women Scholars

E-mentoring is a process where mentoring occurs through digital communication platforms (Neely et al., 2017). E-mentoring leverages digital communication tools to connect mentors and mentees, offering flexibility and accessibility (Gish-Lieberman et al., 2021; Mahayosnand, 2024; Mahayosnand et al., 2021; Wendt & Jones, 2024). E-mentoring has the same goals and outcomes as traditional face-to-face mentoring, except it takes place through digital communication. E-mentoring allows participants to engage in meaningful mentoring relationships regardless of geographic distance or logistical barriers, making it an invaluable approach in today's digital age. Structured e-mentoring programs improve self-efficacy, enhance career development, and provide critical support for women scholars, particularly those in STEM and public health fields (Wendt & Jones, 2024). Rockinson-Szapkiw et al. (2021, p. 270) acknowledged that “literature on STEM peer mentoring, especially in virtual environments, is even more sparse”. This highlights the critical need for continued research in

this area—a need our current study directly addresses by contributing to the literature, addressing existing gaps, and informing more effective practices.

1.3. Women Scholars

Similar to many other women academics within conventional academic frameworks, women scholars often face unique challenges in their careers, including gender bias, limited access to professional networks, difficulty in balancing work and family responsibilities (Diele-Viegas et al., 2021; Mahayosnand et al., 2021; Murphy et al., 2024; Ntshongwana, 2024; Smith et al., 2024; Wendt & Jones, 2024). These systemic barriers hinder the advancement and retention of women in academic and research careers. These barriers made it particularly difficult to connect with women from underrepresented backgrounds, especially those from racial and ethnic minority groups, limiting their access to support and engagement (Ntshongwana, 2024; Rockinson-Szapkiw et al., 2021; Wendt & Jones, 2024). This challenge in outreach is also reflected in the small sample size of this study, as it limited our ability to engage participants from underrepresented backgrounds. Addressing these challenges requires innovative and inclusive approaches that empower women, and foster equitable opportunities for them to excel. The online feature of Ronin Women enabled their members to be part of a research community, giving them a chance to collaborate and advance their research career that would not normally be possible in conventional academic frameworks.

1.4. Women Scholars Pilot E-mentoring Peer Program

Ronin Women's Interest Group received very positive feedback from its members due to its flexible and yet supportive nature. However, not all members are equipped with the same knowledge and skills that enable them to be successful in the way they wanted to be. Therefore, Ronin Women hosted a pilot e-mentoring program – Women Scholars Pilot E-mentoring Peer Program (WSPEPP), as an innovative initiative to support women scholars through peer mentoring. This program was designed to be self-directed, providing a structured platform for women scholars to connect, share experiences, and develop professional skills through mutual learning and collaboration. By combining the benefits of e-mentoring and peer teaching, WSPEPP aims to empower women scholars by offering professional and psychosocial support.

While the literature on e-mentoring and peer mentoring among women is limited (Rockinson-Szapkiw et al., 2021), there seems to be a growing body of research exploring e-mentoring among women. Due to limitations in connecting women scholars from diverse backgrounds, this study adopted an exploratory approach to examine peer mentoring experience in an e-mentoring program for women scholars.

2. Methods

Six women scholars, from a diverse racial and ethnic background located in six different time zones, enrolled in the Women Scholars Pilot E-mentoring Peer Program. They were given a 7-day open enrolment period to create an online profile for all participants to view. Profiles included information on location and time zone, preferred modes of contact, general academic interests, current research projects, the kind of knowledge they can share and they would like to learn, and the type of mentoring they would like to have.

Participants had one week to perform a self-matching process by connecting with other participants to find their peer mentor based on the online profiles. Three pairs of peer mentoring groups were formed, followed by six weeks of digital mentoring activity for at least one hour every week. Participants were free to choose their digital communication platforms that were suitable for them. This pilot e-mentoring peer program was designed to be self-directed. Therefore, each peer-mentoring pair (peer-pair) were instructed to discuss and agree on what they want to achieve during the mentoring period, such as mode and frequency of their communication, and goals of their meetings. All the participants were encouraged to join a Meet & Greet session in Week 1 of the program, where participants have a chance to meet other women scholars and the program leader (the Chief Investigator of this study). The three peer-pairs met on their agreed schedule for another five weeks, until the end of the program. Participants were then asked to complete a survey after the 6-week program. This survey consisted of 45 questions, including eleven open-ended questions, twenty-four 5-point scale questions (1=very dissatisfied/not very, 5=very satisfied/very much), and ten closed-end questions.

Since this is an exploratory study with only six participants, we used a descriptive approach to present the outcome of the twenty-four 5-point scale questions, including measures of central tendency (mean) and their variability (standard deviation). We also used Voyant Tools (Sinclair & Rockwell, 2016), an open-sourced web-based application, to perform text analysis on the open-ended responses. Word clouds were generated to explore patterns in the text responses, thus providing a visual understanding of participant experiences.

3. Results

3.1. Text Analysis

Text analysis was conducted with a word cloud generated from all the open-ended responses using Voyant Tools (Sinclair & Rockwell, 2016). The word cloud presents the words used in the text response. A larger size word means high frequency use. *New*, *experience*, *time*, *peer*, and *support* are five of the frequently used words in the participants' responses. This word cloud (Figure 1) provides a visual presentation of the participants' experiences in this pilot e-mentoring.

FIGURE 1. WORD CLOUD PRESENTED THE MOST FREQUENTLY USED WORDS IN PARTICIPANTS' RESPONSES FOR THIS PILOT E-MENTORING PEER PROGRAM.



Source: generated by Voyant Tools, 2025

3.2. Overall Feedback

Participants were generally very satisfied with the e-mentoring program and think that this program was helpful in facilitating their professional development and psychosocial well-being (Table 1). Their overall feedback through open-ended responses provided further insight into their high satisfaction ratings. Participants generally found the program positive and meaningful. One participant thought “it was great to meet and work with someone [she] hadn’t met before”. Another indicated that there was a “need for [women scholars] to support and help each other”. Participants generally felt that “exchange of new ideas is very useful”, they “really enjoy the whole journey”, and commented that joining the e-mentoring peer program “was a very good experience”. They felt that joining this e-mentoring program gave them a chance to learn and collaborate with other women scholars, which was a “win-win” situation.

TABLE 1. DESCRIPTIVE STATISTICS ON SATISFACTION LEVEL ON WSPEPP

Questions	Mean	SD
How satisfied were you with the Ronin Women Scholars Pilot Peer E-mentoring Program?	4.50	0.55
How relevant and helpful do you think the Ronin Women Scholar Pilot Peer E-mentoring Peer Program?	4.17	0.98

Source: own compilation/calculations

Participants provided additional comments expressing gratitude and optimism. They described the experience as “beautiful” because they “learned a lot regarding [their] research”. Their comments highlighted the program’s potential for women scholars to grow and learn.

3.3. Top Benefits

Participants generally perceived the e-mentoring program as relevant and helpful (Table 1). Participants highlighted the main benefit of joining this e-mentoring was personal growth,

including “patience, empathy, and flexibility”. Other key benefits include learning new ideas, gaining insights into others’ struggles, and receiving practical support. They had learnt “how to be gentle and generous to another individual’s life struggle and realise the presence is a good enough support” to their peers. The program also facilitated connections among women scholars, fostering a supportive and collaborative community. They felt that joining this e-mentoring program was a fantastic way to connect with other women scholars. Their responses evidenced the psychosocial support of this e-mentoring program (Wendt & Jones, 2024).

3.4. Most Satisfying Aspect

Participants’ most satisfying aspects of the program included forming new professional relationships, sharing resources, and learning from each other’s academic and personal experiences. Participants felt that “[sharing] resources and real-life experience as a female scholar” was the most satisfying aspect. The ability to “publish a simple research paper together” is definitely another satisfying experience shared by the participants. These responses, again, clearly evidenced both professional and psychosocial support can be achieved through this pilot e-mentoring peer program.

3.5. Suggestions for Improvement

Participants suggested extending the program’s duration to facilitate deeper connections and learning. They suggested offering “group mentorship sessions with people in the same field ... would facilitate research collaboration”. Other recommendations included setting clear timelines for profile submissions and matches, as participants generally felt that the peer-matching process was “very rush[ed] due to people posting their profile at the last minute”. They also felt that “more guidance during the program” might be helpful. However, responses varied, with some expressing indecisiveness about improvements.

3.6. Self-improvement

Participants noted areas for self-improvement, such as better time management, earlier engagement during the matching phase, and making a more significant effort to focus on program goals. However, some felt constrained by external commitments, limiting their ability to engage fully. Participants commented that “due to a number of projects [they were] working on, [they] could not allocate more time to this [program]”.

3.7. Satisfaction Level on Peer-pair Goals and Guidelines

These ten questions should be understood and interpreted in pairs. For example, the first pair of questions asked about the method of communication agreed between the pairs, then the second question of the pair asked if both participants adhered to what they had agreed on. At the end of the following section, we try to integrate these pair-question results into understanding our participants’ overall e-mentoring experience. Table 2 shows the means and standard deviations (SD) of the participants’ satisfaction level on Peer-pair Goals and Guidelines. Results showed a high level of satisfaction in agreeing and adherence to the choice of communication methods.

TABLE 2. DESCRIPTIVE STATISTICS ON SATISFACTION LEVEL FOR PEER-PAIR GOALS AND GUIDELINES

TopicItem#	Questions	Mean	SD
Communication methods mode Q19 - Q20	Agreeing with the preferred mode of communication	4.67	0.52
	Ability to adhere to your agreed-upon modes of communication	4.50	0.84
Communication frequency Q21 - Q22	Agreeing to the frequency of communication	4.17	0.98
	Ability to adhere to your agreed-upon frequency of communication	3.83	1.47
Relationship guidelines Q23 - Q24	Setting peer relationship guidelines	3.83	1.47
	Ability to adhere to the peer relationship guidelines	4.00	1.26
Establish goals and outcomes Q25 - Q26	Establishing program goals/outcomes individually and collectively as a peer-pair	4.00	1.26
	Ability to adhere to your established program goals/outcomes	3.83	1.17
Communication Structure Q27 - Q28	Developing a structure for your communications	4.00	1.26
	Ability to adhere to the structure of your communications	4.33	0.82

Source: own compilation/calculations

3.8. Preferred Communication Modes

Participants found it easy to communicate in their preferred mode. Their responses indicated that Telegram is the preferred method of communication for this e-mentoring program. Table 3 showed the preferred method of communication in priority order.

TABLE 3. ORDER OF PREFERRED COMMUNICATION

Communication Mode	Rank
Telegram	1
Email	2
Mobile/VOIP phone call	3
WhatsApp	4
Zoom	5
Slack	6
Other	7

Source: own compilation/calculations

3.9. Feedback on Self-directed Peer-pair Goals and Guidelines

While most participants appreciated the flexibility of the program, some struggled with time zones and mismatched goals. Some participants stated that they could not meet frequently because of the “significant difficulty with schedules, time zones for video [and] call meetings”. Others suggested an extended program duration would be helpful to accommodate varying schedules and priorities. They generally thought more guidance on how to achieve scholarship within the 6-week program would be helpful.

3.10. Least Satisfying Aspect

Feedback in the last section (3.9.) aligned with participants’ responses on their least satisfying aspect of the program. Challenges expressed by participants included difficulties in finding a suitable match, time management, and meeting expectations. While some participants felt their matches were not aligned with their needs, others cited external factors like illness or moving home hindered engagement.

The feedback on time zone difference and mismatched goals also explained the relatively lower satisfaction level on setting and adhering to relationship guidelines, establishing and adhering to program goals and outcomes, and developing and adhering to communication structure, as shown in the mean values in Table 2. The larger standard deviation values indicate a wide range of participants’ experience in the program.

Despite the mentioned challenges, some participants “really [enjoyed] working with [their] peer”. They said: “things happen in our life but we remain [present] to support each other”. This experience is a perfect example of what e-mentoring between women scholars aims to achieve – providing both professional and psychosocial support to make academic achievement possible for women scholars (Wendt & Jones, 2024).

3.11. Feedback and Satisfaction Level on Program Logistics

These questions explored the general operations of the program. The program modules included pre-program advertising, enrolment period, self-matching period, use of communication platforms, a Meet & Greet session, weekly prompts, periodic polls, program length, and the program lead’s abilities to answer questions. The maximum mean score of “Week 1 – Meet & Greet” indicated that participants found this module very helpful. Despite the average satisfaction level of the self-matching period appearing high (Table 4), its standard deviation value indicates some differences in participants’ response. In fact, these differences were reflected in the open-ended responses. Several participants noted that the self-matching period was too short, making it challenging to find a suitable peer. They commented that “the time between enrolment with a profile and the actual match was too short”, as it took “time ... to get connected to someone who showed interest in what [they are doing] and vice versa”. Participants agreed that extending this period by one to two days would be sufficient to assess compatibility and establish connections.

TABLE 4. DESCRIPTIVE STATISTICS ON SATISFACTION LEVEL FOR PROGRAM LOGISTICS

Questions	Mean	SD
Pre-Program Advertising/Marketing	4.33	0.82
Enrolment Period	4.67	0.52
Self-Matching Period	4.17	1.17
Mandatory requirement to download and use Telegram	4.83	0.41
Single Peer-Pair Matching	4.67	0.82
Week 1 - Meet & Greet instructions	5.00	0.00
Weekly Prompts	4.50	1.22
Periodic Polls	4.17	0.98
Program length: 6 Weeks	4.33	0.82
Program Lead's abilities to answer your questions and concerns	4.50	0.84

Source: own compilation/calculations

3.12. Future Participation

Finally, all participants expressed that they are interested in future women scholars e-mentoring peer program. All participants indicated that they will recommend this e-mentoring peer program to other women scholars.

4. Discussion

4.1. Implications for Women and Mom Scholars

This study underscores the significance of tailored e-mentoring peer programs for women and mom scholars, addressing unique barriers such as professional isolation, time constraints, and balancing family and academic responsibilities (Murphy et al., 2024; Ntshongwana, 2024; Smith et al., 2024; Wendt & Jones, 2024). Participants valued opportunities for empathetic connections and productive networking, emphasising the need for structured yet flexible platforms to foster these relationships. Such programs have the potential to create inclusive academic environments that support underrepresented groups (Maguire et al., 2024; Wendt & Jones, 2024).

4.2. Peer Mentoring and E-mentoring Methodology

The hybrid peer/e-mentoring approach demonstrated in this study highlights the effectiveness of virtual formats in bridging geographical divides and promoting accessibility (Gish-Lieberman et al., 2021; Mahayosnand, 2024; Mahayosnand et al., 2021; Wendt & Jones, 2024). High satisfaction and strong adherence to communication preferences underscore the practicality of such methods in modern academia. However, feedback about the need for enhanced mentor-matching suggests refining the selection and pairing processes could further improve participant experiences.

4.3. Evaluation and Future Refinements of E-mentoring

Extending the program duration, for instance, may allow participants more time to build deeper connections and achieve their goals. Incorporating structured feedback loops during the program may also help identify and address any emerging issues in real time.

4.4. Limitations and Outliers

This study has several limitations that should be considered. The short six-week duration limited participants' ability to establish and deepen peer-mentoring relationships, as reflected in some text responses. Moreover, the small sample size of six participants provides only a glimpse of how e-mentoring peer program can be beneficial to women scholars, so the results cannot be generalised. The high degree of uniformity in responses to certain questions, such as unanimous satisfaction and interest in future participation, may also mask more nuanced trends. As a pilot study, these findings serve as a foundation for designing more robust and large-scale research in the future.

5. Conclusion

This study explored a six-week pilot e-mentoring peer program for women and mom scholars. The results indicate high satisfaction, showing evidence of professional and psychosocial support, and unanimous interest in future participation. Key areas for improvement include better mentor matching and extending the program duration, while the “Week 1 – Meet & Greet” module emerged as uniquely impactful due to its instructional nature. This finding also aligned with participants' request for more guidance during the program.

The findings highlight the practical potential of e-mentoring to support underrepresented academics. The findings also emphasise the importance of clear communication structures and tailored program designs. Reflecting on our positionality, we acknowledge potential biases in interpreting the results and the study's limitations as a pilot with a small sample size. Nevertheless, this exploratory study offers invaluable insights for scaling e-mentoring and peer mentoring initiatives, fostering inclusive academic growth for women research scholars.

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Declaration Statements

Conflict of Interest

The author reports no conflict of interest.

Funding

The author received no financial support for this article's research, authorship, and/or publication.

Data Availability

Data supporting the conclusions of this study can be made available upon reasonable request from the corresponding author.

Acknowledgments

The authors would like to thank Shamailah Haque and Maryam Edris for their research assistance, and SM Sabra for her editing services. We also greatly appreciate Amy Collins PhD, Arika Virapongse PhD, and Stephanie Cassilde PhD for their program support and assistance. Last, this manuscript would not have been made possible without the WPPEP participants, thank you!

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