GENDER AND DEVELOPMENT UNIT
(OFFICE OF THE CEO)

HUMAN SCIENCES RESEARCH COUNCIL

Report on Consultations towards the Advancement of Women in Science, Engineering and Technology: Part 2 – E-mail Discussion Forum[1]

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[1] After consultation with NACI, the discussion forum was closed in July 2005

Acknowledgements:

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1. Introduction

In February 2005, the Gender Unit of the Human Sciences Research Council (HSRC) was awarded a tender by the Department of Science and Technology (DST) to conduct an e-mail discussion forum on issues relating to the advancement of women in the Science, Engineering and Technology (SET) sector of South Africa. Initially, the project was managed on behalf of DST by Dr Shaidah Asmal (Manager: Science, Gender and Disability Department of the Department of Science and Technology) and Ms Glaudina Loots (Projects Officer: Science, Gender and Disability Department of the Department of Science and Technology). Subsequently, the project was handed over to the National Council for Innovation (NACI), with Ms Luci Abrams, Ms Lebogang Lebese and Dr Esther Njiro becoming directly involved in the management of this project on behalf of the Department of Science Technology.

The HSRC team was led by Professor Cheryl A. Potgieter, Director/Head of the Gender and Development Unit. The principal investigator/manager of the day-to-day activities of the discussion was Prof Patrick Chiroro who is attached to the HSRC and the University of Pretoria. The moderators/researchers involved in the project were Dr. Desire Lewis (Gender Consultant), Prof T. Shefer (Head of the Women and Gender Studies at UWC), Ms Prudence Makhura (Junior Researcher at the HSRC), Ms Nadia Sanger (Senior Researcher at the HSRC), Mr J. Jacobs (Research Associate at the HSRC) and a number of field workers who were co-opted into the project at various times during the project.

1.1. Aim

The broad aim of the discussion forum was to provide women and men from the SET sector and members of the general public with an opportunity to discuss and debate various issues relating to women's participation in the SET sector, with a specific focus on *research agendas* and *human capital development*.

1.2. Background Research

Before embarking on the e-mail discussion forum itself, the researchers conducted an extensive review of the literature on issues relating to gender mainstreaming in

general and, in particular, women's participation in the SET sector in South Africa and internationally (e.g. the 2004 CREST report; Tshabalala, 2000; Van Vuuren, 1997; Kent et al. 1995; Reddy, 1995, Roger, 1997; Blankley & Khan, 2004.

The researchers also studied carefully a number of scientific publications on the use of an e-mail discussion forum as a medium by which to engage members of the general public on key policy issues relating to gender mainstreaming and women's participation in the SET sector (e.g. Ogdin, 1998; Sy, 2003; Williams, 1997; Collins & Berge, 1997; Woolley, 1995; 1998, and so on). In addition, the researchers visited a wide range of international websites that are currently running online discussion forums on women's participation in the Science, Engineering and Technology sector (e.g. WISENET, CCWEST, DAPHNET, GENDER-SET, WIC-LIST, WIGSAT-L, etc). This background research and visits to existing websites were highly informative in terms of guiding the researchers on issues relating to choice of type of discussion forum to be used, the structure of the discussion forum, publicity for the forum, as well as the launch and implementation of the discussion forum itself.

In particular, the team studied carefully how the British Parliamentary Office of Science and Technology (POST) employed an e-mail discussion forum to gather information that was instrumental in the development of long-term policies for gender mainstreaming in the SET sector in the United Kingdom. The UK POST study resulted in the identification of a number of action points for higher education institutions, professional bodies, employers, and research councils that were incorporated into the government's policy framework for gender mainstreaming in the SET sector of that country.

1.3. The report

This report provides a detailed account of the methodology utilised for this project, as well as the findings that emerged from the study. We also include in this report a brief description of the lessons that we learnt while conducting the e-mail discussion forum in the hope that these lessons will benefit future attempts to run similar discussion forums within DST.

2. Methodology

2.1. Type of E-mail Discussion Forum Utilised

A review of the literature and visits to international websites currently running discussion forums on women in the SET sector led us to the conclusion that, for purposes of the present study, it was desirable to employ an *asynchronous forum* as opposed to a *synchronous* one. A synchronous discussion forum is one that is 'real time', in which participants have to be on-line at the same time in order to communicate with each other, whereas, an asynchronous discussion forum is one in which participants have the freedom to access the forum at their convenience as well as gain access to views expressed by others while they are not 'logged on'. The mode of communication that was chosen for this project was via 'e-mails'. Thus, participants did not have to log onto the discussion forum's website in order to express their views. Instead, once they had subscribed to the forum, they were able to send their views to members of the forum via e-mail; specifically, by sending their e-mail(s) to a single e-mail address <womeninscience@vukanet.org>. Similarly, they received via e-mail, the contributions made by all the other group members.

Thus, the chosen method of communication ensured both flexibility and inclusivity, by not requiring participants to be on-line while taking part in the discussion forum. It was reasoned that, if a synchronous forum had been used, long log-in periods might have put off some participants who did not have 'quick access' to the internet. The web designers, Vukanet, coordinated the management and distribution of e-mails among forum members.

2.2. The preparatory and Planning phase

During the preparatory and planning phase, a number of important decisions were made. First, the researchers held several meetings with DST staff and the web-designers and satisfied themselves that the conferencing software that was to be used was ideal for the project in terms of such issues as data archiving formats, flexibility, and so on. Also, during these meetings, various issues relating to allocation of responsibilities, the structure of the forum (i.e. interface, content matters, moderation process, etc) were discussed and agreed on with DST and Vukanet. Specifically, a decision was taken at this stage not to directly use the terms 'research agendas' and 'human capital development', as these terms were considered not to be part of the general public's everyday vocabulary. Instead, a total of 11 questions

were posed on the website. These questions were deemed to be appropriate in terms of covering issues relating to both 'research agendas' and 'human capital development' by both the DST and the HSRC team. The 11 questions posed on the website are shown in table 1.

Table 1. *Questions posed on the E-mail discussion forum website*

Topic 1:	What barriers and challenges are faced by women working in the SET sector?
Topic 2:	What challenges do women enroled in SET disciplines face in South African institutions of higher learning?
Topic 3:	What are the day-to-day work experiences of women in the SET sector and do these experiences contribute to their leaving the SET sector?
Topic 4:	How do institutional and cultural factors shape mind-sets among both men and women working in the SET sector?
Topic 5:	Are the specific needs of and priorities of women being addressed in academic institutions and the SET workplace? What challenges remain?
Topic 6:	What factors affect the recruitment, advancement and retention of women in the SET sector in South Africa?
Topic 7:	What strategies should be introduced for mentoring, monitoring and evaluating the progress of women in the SET sector?
Topic 8:	Which existing strategies work? Which strategies should be developed and which ones should be abandoned?
Topic 9:	What scientific and technological research must be done in order to enhance women's participation in the SET sector?
Topic 10:	What scientific and technological research must be done in order to make the products of the SET sector beneficial to women and end users of technology?
Topic 11:	What policy changes must be made to enhance women's participation in the SET sector?

Furthermore, a *pilot study* was conducted in which only DST and HSRC members participated. Bugs in the conferencing software and affiliated programs were dealt with at this stage. Content issues were also addressed during the pilot phase (i.e. questions and probes to be used by moderators to ensure that the discussion would remain focused on research agendas and human capital development).

2.2.1. Training of moderators

Moderators, who were all senior researchers with considerable experience in this field, received further training on their specific roles and responsibilities, which included: social roles, intellectual roles, and organizational roles. Table 2 summarizes these three categories of roles as they were discussed during the one-day training workshop for the moderators.

Table 2. Moderator roles as communicated to moderators during training

ROLE	Functions
Social role	▪ Facilitating the development of the group's synergy. ▪ Setting the discussion's tone through the 'first' messages and maintaining the tone throughout the discussion. ▪ Ensuring that ground rules are established and broadcast to all participants as part of the introduction, and subsequently, if deemed necessary. Encouraging participants to make suggestions and to self-regulate their participation. ▪ Modeling positive behavior that one would wish to see online; e.g. saying thank you to those who participate. ▪ Establishing trust—refers to people by 'name' and summarizes their points to validate their participation. ▪ Being responsive to questions, comments, and the needs of the participants. ▪ Sending private e-mails to encourage lurkers to contribute if so required.
Intellectual role	▪ Contributing by adding information and insights to the discussions without controlling the flow. ▪ 'Listening' to participants, generation of probes and clarifying information. ▪ Encouraging participants' input by posting relevant information, adding comments, summarizing and raising issues when participation seems low. ▪ Synthesizing or "weaving" the responses, which demonstrate to the group that they have accomplished something and that there, is direction in their discussion.
Organizational role	▪ Participating in the design of the discussion prior to its initiation. ▪ Providing an organizational structure to the discussion. ▪ Reducing the visual clutter of the discussion where necessary and possible. ▪ Setting clear objectives and timelines for the discussion forum. ▪ Providing periodic summaries. The summaries are important as they allow the participants to see patterns in the contributions and to keep them from getting lost in the detail. Summaries also allow for latecomers to the conference to see what happened before their joining. There are three components to summarizing: ▪ Summarize the discussion ▪ List any outstanding items ▪ Post a leading question designed to stimulate discussion. ▪ Monitoring the discussion to ensure that participants are behaving according to the ground rules that were set in the introduction.

2.3. The Publicity Phase

The publicity phase involved sending out e-mails to universities, science councils, individual companies in the SET sector, as well as telephone calls to various people known to the researchers and DST staff as active players in the SET sector of South Africa. Posters were also put up at universities, science councils, and notice boards at strategic places within the offices of individual companies and professional bodies. Advertisements were also published in the Mail and Guardian newspaper. During the consultative conferences held in Cape Town, Durban and Johannesburg, announcements were made and flyers were handed out to delegates, inviting them to participate in the discussion forum (*see* Appendix A). The project leader also had a radio interview, in which the existence of the forum was extensively covered. Links to various websites at universities and science councils were also created. It must be noted, however, that these efforts did not quite succeed in generating the level of response that we had anticipated. The section on lessons learnt from this project discusses some possible reasons why this might have been the case. Nevertheless, the strategies were partially effective in getting some people to register and contribute to the discussion forum.

2.4. Launch and Implementation of the Discussion Forum

The discussion forum was activated and made 'live' on the Internet on 16 March 2005. It was expected that the forum would run continuously for a period of 16 weeks. After a rather slow start, it was decided that the forum's life span would be extended to 27 July 2005. However, it became increasingly difficult to maintain interest in the forum and, after consultations with NACI/DST, the forum was closed on 7 July 2005. Thus, the forum remained active for a total of 16 weeks and 1 day. The decision to end the discussion forum prematurely was not taken lightly. A number of considerations were taken into account. Most importantly, a cost-benefit analysis indicated that keeping the forum active would have yielded very little, while costing DST/NACI a disproportionate amount of money through web-maintenance costs.

In the next section, a summary of the main themes that emerged from the discussion forum are presented, along with some key examples of experiences documented by some of the participants.

3. Findings

3.1. Demographic characteristics of participants

A total 14 people signed up and participated in the discussion forum. This does not include persons whom we knew to have prior knowledge about the project (e.g. moderators, DST, and HSRC staff who were directly involved in the project). Their age ranged was 23 – 53 years. The participants were all female. Seven of the participants (50%) were 'black', 1 was 'Asian', and the remainder were 'white'. Three of the participants had Doctorate degrees, while the remainder of the participants had either an Bachelors degree or an MSc degree or equivalent. Clearly, the total number of participants was quite low, although the number of messages exchanged among the participants was reasonable for the group size.

3.2. Results

A content analysis was performed on the data. In this section, we present the key findings that emerged from the *limited* discussion that took place. It is worth pointing out that the contributors to the forum dwelt almost exclusively on barriers faced by girls and young women intending to enter the SET sector and how these barriers can be overcome. None of the contributions made tackled the issue of research agendas. However, some policy recommendations were made by some of the participants.

3.2.1. Barriers to entry, and advancement of women in the SET sector

It was generally observed that girls are socialized in a manner that makes them believe that a career in Science, Engineering and Technology is not for them but for their male counterparts. Often, parents are unaware that their actions and words discourage girls and young women from choosing a career in the SET sector. Contributors noted that need for such societal attitudes to change first before we can get girls and young women interested in careers in the SET sector. In particular, programmes to address gender stereotypes in terms of career choices must be addressed. According to one participant, girls and women appear to have "... *internalised society's perceptions of what they are capable and not capable of doing*".

Thus, in addition to the fact that girls are socialized into thinking that careers in the science/engineering/technology sectors are not suitable for them, they are also made to think that they are not intellectually capable of studying for degrees, diplomas and certificates in the SET field. Exposure to role models was identified by some of the participants as one way of changing the way girls and young women perceive themselves.

Family responsibilities were seen as curtailing women's participation in the SET sector. One contributor stated:

"I believe that many women forego careers (not only SET careers) because of their perception of the importance of the nurturer/home maker role, and how it should be executed, and because of their male partners' view on this too ..... I am suggesting that many women make a practical choice between 'homemaking' and career". This not need be the case, according to the same contributor because "... there are many examples of women in successful and senior roles who have managed their families well – one can hardly say that this cannot be done".

It was also pointed out that the manner in which women who enter the SET sector are treated by their employers has a negative influence on the women, such that "... these negative influences filter through to young girls and women intending to enter the sector; such that the barriers affect women's participation well before they even enter the sector". Gender sensitivity training programmes may help to improve the way in which women already in the SET sector are treated.

Some of the participants observed that there are no incentives for girls and young women to enter the SET sector. However, none of the contributors elaborated on the nature or form that such incentives could take. Furthermore, girls and young women are not being given the same opportunities that boys and young men are given. Strategies for addressing this issue did not emerge from the contributions made on the forum.

3.2.2. Policy Issues

- Production of a gender equity policy was generally supported by most of the participants. In fact, none of the participants suggested that such a policy would be undesirable
- Some participants felt that the gender equity policy should address how to change societal attitudes towards girls and women
- The gender equity policy should be multi-level, addressing (i) issues relating to a societal shift away from viewing girls as less capable than boys and eliminating societal biases against girls and women who choose careers in the SET sector; (ii) policies for educational institutions; and, (iii) policies for the workplace.
- The policy document needs to not only specify clear goals and targets to be achieved, but also the strategies for realising the set goals as well as the monitoring and evaluation framework to be used to evaluate the effectiveness of implementing the policy. One participant said:

> "Introducing a quota system might be a possibility – i.e. requiring educational institutions and employers to achieve specific targets in terms of gender representation over a specific period of time".

Similarly, some participants also suggested that a charter for the empowerment of women in the SET sector (similar to BEE) could be considered.

4. Conclusion and Lessons Learnt

It is important to point out that the e-mail discussion forum proved to be an *ineffective* way of gathering people's views on research agendas in particular and only partially succeeded in gathering some views on issues relating to human capital development and policy recommendations. This was due to a variety of reasons. We include here a discussion of the problems experienced and the lessons learnt, primarily because we believe that future attempts by DST to collect information using this methodology could be informed by this discussion.

Participation in the e-mail discussion forum was extremely low.
We are not sure of all the reasons why participation was low. We would like to suggest that if another attempt is made at collecting data in this way that the web

designers are specialist in the content area as well. In our original proposal we had suggested that we would contract the web design to Womens Net. However in the final contract the choice of Web Developers was made by the client.

In conclusion, it must be said that this particular method did not prove to be an effective way of gathering data on issues relating to research agendas in particular, and on human capital development regarding women's participation in the SET sector of the South African economy. However, the limited number of participants who took the rouble to take part did provide some useful information on barriers to entry into the SET sector experienced by girls and women as well as some specific policy recommendations for addressing these barriers.

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