

The Consultant's Report on the

ANP/IDRC MICROCOMPUTER WORKSHOP

University of Nairobi, Kabete Campus

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1. Introduction.

This is a report of The University of Nairobi Applied Nutrition Program and International Research Development Centre (ANP/IDRC) Microcomputer workshop held on the Kabete Campus of the university from September 19 - 30, 1988. The purpose of the workshop was to provide health researchers in eastern Africa with an introduction to microcomputers and leading software packages for use in research so as to enable them to use microcomputers in their work.

I chaired a session at the end of the workshop in which the participants discussed their experiences in the workshop and offered constructive criticisms and suggestions for subsequent workshops. In this report I comment on the success of the workshop and compare the relative advantages and disadvantages of this workshop with a similar workshop sponsored by the Kenya Medical Research Institute and the IDRC and held in Nyeri, Kenya from 19 - 29, 1987.

Twenty-four participants attended the workshop. They came from Egypt (1), Tanzania (3), Uganda (5), and Kenya (14). They came with professional training and experience in medicine, social sciences, and public health engineering.

Twelve of the participants were from the University of Nairobi, and they came from the Departments of Agricultural Economics, Animal Production, Crop Science, Food Technology and Nutrition, and Soil Science. The two other participants from Nairobi were from the Department of Home Economics at Kenyatta University and the Department of Community Health at Kenyatta National Hospital.

Most of the participants had limited contact or experience with the use of microcomputers in research. They reported that they either had access to machines or anticipated receiving a computer within the near future, so they were keen to learn about the use of them in research.

During the course of the workshop the participants from outside Nairobi stayed at the Jacaranda Hotel. Participants and facilitators from Nairobi stayed in their homes.

The instruction was in three parts, presentations and discussions, performance of commands at the computer keyboard, and practice sessions. The typical workshop day began at 8:30 in the morning and ended by 6:00 when the participants returned to their residences. There were sessions on research design, questionnaire construction, and hardware in addition to the introductions to MS-DOS, word processing, database, spread sheets, statistical computing, documentation and referencing systems.

2. Objectives for the Workshop.

Three objectives were set forth for the workshop:

1. To familiarize research scientists in the health sector with microcomputers and the use of appropriate programme packages relevant to their research.
2. To give scientists up-to-date skills and experience in the use of microcomputers.
3. To strengthen the capabilities of universities and other institutions from which participants will attend, to provide services in data analysis.

The first two objectives were successfully achieved. By the end of the workshop all of the participants had a basic knowledge and experience in operating microcomputers and the ability to use the most recent versions of MS-DOS (disk operating system for IBM compatible computers), dBASEIII+ (database management), WordPerfect 5.0 (word processing), Lotus 1-2-3 (spread sheet, data management, and graphics), and SPSS/PC+ (statistical analysis). They also learned about the important features of microcomputer hardware, operating environments, and the most widely used programs.

It will take some time to determine if the third objective will be achieved. The participants did learn about the essential elements about organizing a work environment for microcomputers by working in the microcomputer workshop on the Kabete Campus and discussing steps they should take to develop and strengthen the resources for computing at home.

The participants felt that they covered too much material during the two weeks, and they wondered if they had achieved sufficient levels of mastery of the programmes to work on their own. In spite of these concerns, it was the consensus of the facilitators that the participants had gained sufficient knowledge and experience to work on microcomputers and continue their learning about the machines and packages.

3. Selection of the Participants.

The coordinators of the workshop decided to limit the enrolment of the workshop so that there would be no more than two participants per computer. It is my understanding that over 40 individuals applied, 28 were accepted, and four of those accepted were unable to come. The coordinators decided not to replace those who were unable to attend, so there were 24 participants in

the workshop.

The coordinators of the Nyeri workshop admitted as many as could be accommodated, and replacements were added to replace those who could not attend at the last moment. There were over 40 participants who attended the workshop. Given the setting and number of computers in Nyeri, the workshop last year was probably too large as there were up to six persons per machine. I have taught workshops where each individual had their own computer, and it was very difficult to respond to their questions and problems, and keep them working at a reasonably even pace. With two participants per machine, both were both able to have hands on experience, and they helped each other learn and perform the commands.

On the basis of my experiences to date I would recommend that future enrolments be limited to two per computer.

4. Site.

The participants agreed that Nairobi was an excellent setting for the microcomputer research, given the prominence of the city for eastern Kenya. They did hope that subsequent workshops would be held in other centres of the region as well.

5. Accommodations.

Three models were discussed for workshop accommodations. The Nyeri model was one option whereby the participants and the machines were taken to a hotel away from the city, and the participants and facilitators lived and work together for two weeks. This arrangement provided a high level of esprit du corps. Participants could move easily between their rooms to the work areas during the days and evenings, and pace themselves so not to be fatigued by the experience.

The second model would have been for the participants and facilitators to stay on Kabete campus. It appeared that suitable accommodations were not available at the Kabete Campus to make this possible.

For this workshop the participants from Nairobi stayed in their homes and the participants from out of town stayed in a hotel off campus, but not in the centre of the city. There were obvious disadvantages to having the accommodations off site. It was the end of the academic year at the University, and the faculty were caught up in meetings regarding supplemental examinations and decisions on graduation. The participants from the Kabete campus probably missed as many sessions as they attended. The participants from outside Kenya came with their

agendas as well. They planned to take advantage of the trip to Nairobi to make appointments with international agencies, attend to personal business, shop, and see some sites.

Transportation to the Kabete campus was provided, but it proved to be time consuming and tiring. We quickly settled into a pattern of arriving on campus by 8:30 in the morning, staying until the early evening, and then returning to our accommodations for the night. There were no evening sessions, even though the Nairobi participants had hoped they could return in the evening, particularly on the days they had to miss sessions during the day.

There was a consensus that if the accommodations were to be apart from the campus, it would probably be better for the participants to stay in the centre of the city. This would have permitted a choice of hotels, restaurants, and easier access to shops and offices. The participants preferred to have two free afternoons scheduled so they could plan their appointments and personal affairs accordingly.

The coordinators spent the better part of the first two days sorting out preferences for accommodations for the participants from outside of Nairobi. The problems and discontent did not spill over into the workshop sessions. The participants very quickly settled into the routine and learning the materials presented to them.

6. Computing Laboratory.

The Computing Laboratory at the Kabete Campus is one of the best facilities I have seen. There were 14 Acer 700 and 710 microcomputers (XT level) with hard disks. Dr. Jan Pit, the director of the laboratory, has it well organized with respect to hardware, uniform operating systems, and state of the art computer programs. The laboratory was as "user friendly" as it could possibly be, and the participants and facilitators quickly agreed to the procedures set forth by Dr. Pit for productive use of the facility.

For the Nyeri workshop, computers had to be borrowed from a number of sources, moved to the hotel, set up, and then the facilitators had to work with the varying systems to make them as comparable as possible. There were numerous difficulties encountered, and at anyone time there were one or more machines which could not be used for particular applications. Enormous amounts of time and energy went into maintaining the machines and software. The coordinators were successful in assuring that computers sufficiently well for the participants to meet the objectives, but they did so at a cost.

In retrospect, I would rather start with a well organized computing facility and then arrange accommodations than the other way around.

7. Timing of the Workshop.

The participants were asked about the time of year for the workshop. The participants who were faculty members of the Kabete or other campuses noted that the latter two weeks of September was the time for supplemental exams and the decisions regarding graduation. It was difficult for them to get away.

There was general agreement that the workshop would have been better held in July and August when the universities were not in session. A number noted that they would be free to spend three weeks at a workshop during the break, and thereby allowing for more time to cover the material.

8. Instruction.

There were a number of comments and suggestions, and most of them were directed toward improving the ease of learning.

1. Have short hand outs listing and explaining the commands given during the sessions.
2. Minimize the amount the memorization required.
3. Have structured exercises that would integrate research design with data analysis.
4. Make sure that facilitators explain the commands they give and explain the command sequence.
5. Allow for varying rates at which individuals learn the software.
6. Allow more time for practice.

All of the suggestions were good ones, and they were not unlike those offered last year by the participants in the Nyeri workshop.

I have become increasingly aware of the limitations under *which* facilitators work in these workshops. Facilitators vary not only in the knowledge of software programs, but in the versions of the packages. I have also come to appreciate that facilitators vary in style and the conventions they follow in teaching the use of computers. Lastly, facilitators are not able to accurately gauge

the background, research experience, and learning curves of the participants until the workshop begins.

We agreed to use the most recent versions of the software, and some of the facilitators had to learn the new features and commands of some of the packages. We also learned some tips and tricks from facilitators with extensive experience using the programs. Ideally the facilitators would go over the exercises before they participants performed them, but there was insufficient time to do so.

The facilitators from the Kenya Medical Research Institute participated in the Nyeri workshop, and the facilitators from the Kabete campus had experience with the software and the computing laboratory. We agreed on style and conventions in the use of software, so that open disagreement amongst facilitators that occurred at some points in the Nyeri workshop was not repeated.

The participants found the facilitators to be helpful and willing to spend time to help them sort through problems. Apart from the complaint that facilitators at times failed to fully explain the commands exercised, the participants seemed satisfied with the instruction which they had received.

9. Content.

The participants appreciated learning about the major applications of software, even though they thought too much material was covered in the workshop. They suggested that there should be follow-up workshops which would focus upon intensive use of one or two packages. For example, it was suggested that a workshop could be focused upon SPSS/PC+ with participants considering the research question, study design, and sources of data in planning the analysis. Ideally the exercise would be based on research in which they have been involved.

There were a number of participants who brought data sets with them or drafts of proposals and schedules for gathering data. They consulted facilitators on their projects, and the participants who brought data were able to start the analysis of them during the practice sessions. The names and addresses of all persons involved in the workshop were distributed during the closing session, and in all likelihood working relationships formed during the workshop will continue.

10. The Facilitators.

The facilitators from the Kabete campus included Ann Erlich, D. M. Kinyingi, E. Kwered, G. K. Maritim, and Jan Pit. R. Agwanda, E. Muniu, L. N. Muthami, J. N. Muttunga, and N. D.

Nagelkerke came from KEMRI, and they had been facilitators at the Nyeri workshop as well. Gabe Maritim and Ann Erlich were the coordinators of the workshop and they handled all of the financial and administrative arrangements of the workshop.

The facilitators are good and they should be used in subsequent workshops that may be held in the region.

The responsibilities for classroom presentations were divided as follows:

Research Design	Williams
Questionnaires	Williams
MS-DOS	Pit and Williams
Hardware	Pit
WordPerfect	Williams and Maritim
dBASEIII+	Williams and Maritim
SPSS/PC+	Williams and Nagelkerke
Lotus 1-2-3	Pit
Moving Data	Pit
Referencing Systems	Mr. Umbima from ILRAD

Hand outs were written or prepared and distributed for about half of the topics.

The participants completed evaluated the workshop by completing a questionnaire. There were questions included on the specific topics. I do not know what the final results were, but the first review of the results indicated that the participants were satisfied with information and instruction they received on these topics.

The participants took advantage of the knowledge and expertise of the facilitators and obtained information and suggestions as to how they should organize the use of microcomputers at home and additional software they should be considering. Jan Pit proved to be an particularly important resource person for the participants.

11. Closing Sessions.

There were panel sessions on the last morning on the future of microcomputers in research and the organization of health related information systems in Kenya. These sessions helped to establish the larger context for the use of computers in research.

Certificates were presented to the participants during the closing reception held at ILRAD. The participants earned them, and they seemed pleased to receive them.

12. Conclusion.

The ANP/IDRC Computer Workshop was a successful experience for the participants and facilitators. Lessons were learned on how to improve the workshops, but these comments and suggestions did not detract from success of the workshop. The Applied Nutrition Program and the IDRC staff in Nairobi worked hard to organize the workshop, and their work and support were appreciated by all the participants and facilitators. Ann Erlich and Gabe Maritim spoke highly of Professor Omari and the IDRC staff in terms of the help they provided in planning and organizing the workshop. Ann Erlich and Gabe Maritim worked hard to ensure the success of the workshop. Their time, attention and effort given by these individuals were greatly appreciated, particularly by me.

Nearly 70 researchers in the eastern region of Africa have learned to use microcomputers in the two workshops. The concept of the workshop is sound, and there is undoubtedly a market for additional workshops in and out of Kenya. At the same time consideration should be given to offering an advanced workshop that would focus on statistical analysis in health care research. There is little question that it would be well subscribed.