

Chapter Ten: Future Research, Practice and Conclusions

10.1 Introduction

In this final chapter, we introduce the research and practice that we believe needs to be undertaken in the future. We then provide an answer to our original research question and make a recommendation for action research in the context of this answer. Finally we draw the research together in the conclusion. We wish to point out at the outset that research and practice are inseparable in an action research context, and it is action research that has been the driving force of this research. In the practice of action research, a researcher intervenes in a situation so as to glean new knowledge, improve the understanding of existing theory, develop new theory, and of course ameliorate the problem situation of the client who is participating in the research. In the following paragraphs, we do not attempt to distinguish research from practice as we do not believe that they are separable in this context without that separation harming either or both of them. However, we do highlight the key issues that we believe will be of importance in this field in the future.

10.2 Future Research and Practice

In our discussion of research and practice, there are a number of key issues to raise. These include participation and the roles and attitudes of the participants, the group leader and the researcher, the way in which technology is used, the methods used to collect data, the value of the research framework and the importance of understanding cultural issues.

In action research, the serious participation of all relevant parties in a project is vital if that project is to succeed, though as we have seen in this research, there must be some flexibility in that participation - for example when the group membership, even the group leader, changes during the course of the research. Understanding issues of participation, however, is more complex since it is also necessary to explore the broad set of issues connected with group member motivation, competence and willingness to participate. These issues have not attracted serious attention in the mainstream GSS literature, though there is more awareness of the importance of motivation in GSS-supported collaborative learning environments (see e.g. Alavi, 1994).

In experimental research, student subjects are typically motivated by course credits or financial rewards, and those who are not so motivated don't take part in the research at all. Such students who do take part typically have few vested interests in either processes or outcomes of meetings.

In field research, however, the literature makes no mention of motivational or competence issues - it might be thought that the opportunity to use a GSS is in itself sufficient motivation to participate in meetings. In the first three cases of this research, the motivation of group members was perceived to be high as there were vested interests at stake in the tasks. In Case Four, on the other hand, a very clear, if extreme, example of poor motivation emerged. Although some of the causes of this poor motivation were identified, we suspect that there may, in practice, be many reasons that contribute towards the motivation of group members to participate in meetings. Whilst these causes may vary from group to group, from task to task, and from organisation to organisation, researchers should be aware of the issues involved. Notwithstanding these difficulties, punctuated equilibrium theory (Gersick, 1991) seems to have explanatory power for some of the effects we described in Case Four. This suggests that in situations where, for example, motivation in a group is problematic or there are other concerns related to process management, it may be helpful to introduce discontinuities into the group process so as to stimulate changes.

A serious problem with previous field research is that it has seldom involved the longitudinal collection of data. Longitudinal studies are very valuable as they enable the elicitation of longer term trends that may well help a researcher to understand such issues as motivation, participation and group development more generally (cf. Mennecke et al., 1992). Further longitudinal research will help to clarify the nature of motivation as a construct, or as a group of constructs.

The key role in action research is held by the researcher, since he has to intervene in order to conduct the research. This intervention has to be agreed upon with the people with whom he is working, but it is important that this involvement is not trivial. In a GSS context, the involvement must be sufficient for the researcher to collect the information that he needs so as to effect a valuable intervention and create an environment for the problem solving group that is conducive to their work. It is important that he should be able to resist pressure from one party or another to facilitate or aim for a particular kind of solution or discussion. Similarly, he should be free to obtain the information he requires for facilitation and to decide how he can

most effectively be involved. This of necessity means that he cannot simply facilitate the technology. He should also be involved in facilitating the process - in conjunction with the group leader - and even the content. This in turn suggests that he must develop a good understanding of the content and its context - including the culture of the organisation, the national culture of the team members and the culture of the task - if one can be identified. This level of involvement is more akin to participation than observation, yet it is through such participation that the power of action research as a methodology can be realised.

In this participation, the co-operation and collaboration of the group leader is of great importance, since it is he who will take responsibility for the actions of the researcher and thus confirm the role that the researcher may play. Indeed, it is important that all the roles involved - leader, researcher, members - must be specified in advance and agreed upon by all concerned. Ideally, all three will be involved in the research, the learning, and the progress towards a solution that takes place. Roles may evolve with time, sometimes in an unpredictable manner, but the researcher in particular must ensure that his initial role is substantial and involved enough for him to be able to produce meaningful results, while simultaneously reinforcing theory.

A key element of action research must be the manner in which the facilitator manages the technology that is employed for the benefit of the group. We use 'technology' in a very broad sense here, though in this research the principal technology item has been a GSS. It is critical that the facilitator knows how to match the technology to the tasks being undertaken, so as to make best use of the former and ensure most effective tackling of the latter. It is certainly a mistake to treat technology as a panacea for all forms of task problem - this is a recipe for disaster. Indeed, realisation that it is the task and its tacklers, not the technology, that are central to the process, is key to an effective facilitation style.

If the leader of the group wishes to mandate the use of technology, then the researcher should attempt to reason if and why it is appropriate in a given situation - and therefore be prepared to find alternative forms of support. This is why the researcher cannot just be a facilitator of the technology if he is to be useful - he must also be involved with process and content issues since these will reveal methods and techniques that do not involve technology, yet which still make use of his skills and experience.

A specific element of the task-technology fit debate concerns the value of anonymous communications in groups. Anonymity is a much vaunted aspect of GSS technology and for various reasons the GSS literature often makes the implicit assumption that anonymity is a good thing, since it is suggested that anonymous communications can reduce the process losses associated with participant evaluation apprehension, conformance pressure and so on. While experimental work has investigated anonymity, there is very little work in the field that does this, i.e. most studies undertaken have used entirely anonymous communications. An exception is the work undertaken by Lyytinen and colleagues (1993) who found that in international diplomacy, anonymity can produce some dysfunctional effects since it is essential for public statements to be identified, contributors wishing to get credit for their statements. The experimental literature has also examined deindividuation and free riding - both enhanced by anonymity.

In Case Four of this research, we found that the free riding was very strong, with all group members free riding to a significant extent on the contributions of the group leader. Furthermore, and more worryingly, the group leader took advantage of the anonymity to project large numbers of his own ideas and was so able to exert a covert dominance over the content of the discussions, his views at times outnumbering those of all other group members combined. Had contributions been identified, the other group members would have seen very quickly that the group leader was dominating the discussions. As a result of this, we recommend that the action researcher must not only know which tool to use to support a task, but also how to use it - and how not to use it. Further research in the application of anonymity in field situations will improve our understanding of how to use it appropriately.

The research instrument that we developed in Chapter Four has been of fundamental importance to the entire research. Although we have been using a qualitative, interpretive research methodology, we believed it valuable to collect quantitative data from the participants in meetings regarding their perceptions of some key meeting processes. The revalidation of the instrument constructs in 9.4.2 above indicates that three of the constructs (Communication, Discussion Quality, and Status Effects) show remarkable stability and reliability. The Teamwork construct is a little weak, but it is the Efficiency construct that clearly requires further work. It will need to be re-examined in future research along the lines suggested in 9.4.2.5, and then revalidated.

A number of modifications have been made to the research instrument both during and after the case studies as a direct result of our experiences. An important aspect in the development of the instrument has been the recognition of the need for two slightly different versions - one to measure absolute values, the other to measure relative values. This has been explained in Chapter Nine. While both versions have proved applicable in our research, it will be advantageous if they can be further validated by other researchers in other situations involving different tasks, groups, cultures, and so on. While the *absolute* version of the instrument may be used for all types of meetings (with or without technology), the *relative* version can only be used when there have been previous meetings of a group, i.e. in longitudinal studies. The revised versions of the instrument are major outcomes of this research and can be seen in Appendices 10.1 and 10.2. However, further development of the two outcome variables - satisfaction and consensus - needs to be carried out. We have identified these two variables as being complex and unsuitably measured by single questions. At the present time we are working on a separate project to develop an instrument to measure satisfaction in GSS-supported meetings. It is likely that this instrument, or a derived version of it, will be very suitable to employ within an action research context in the future. Similar work needs to be undertaken on the consensus construct. The efficiency construct of meeting processes, as we discussed in 9.4.2.5, has problems of construct validity.

Although the research instruments have been undeniably useful, they do need to be complemented by richer and more qualitative information gathering techniques. In Case Four, serious problems of non-participation were experienced with the group members paradoxically informing us (through the instrument and in conversations) that they were willing to participate, yet failing to do so in practice. This paradox was not resolved until late in the case when the researcher became more fully involved in meeting process support. Through discussions with group members, it was revealed that two key components of the organisational culture were seriously affecting motivation and consequently impeding participation.

As a further consequence of the case studies, we have been able to redevelop the research framework (see Figure 9.1 above). This new framework for action research in meetings includes many components that were not present in the original framework. The revised framework serves as a valuable pointer to future research in that it identifies some critical factors that are likely to be involved in

meeting dynamics. We have not explicitly drawn up hypotheses to reflect the interactions of these factors since the researcher must treat each situation uniquely and knowing that a particular hypothesis was proven true or false in another situation with entirely different parameters would not be particularly valuable. Nonetheless, researchers may consider developing hypotheses mid way through a case based on information that is available, and test these as the case progresses. Furthermore, knowledge that certain variables are important to the progress of meetings is useful and so a researcher can use this information to guide his facilitation of the group as it develops.

Although we believe that all the elements of the framework are in general important, some of them may require special attention because they are less obvious. These include: the voluntariness (or otherwise) of the group membership and nature of group development; the personal characteristics of the group members - particularly, we believe, their tolerance for alternative views or methods; the plentitude of task factors that we have described in 9.4.1.5; the motivation of the group members to participate; the competence of the facilitator to know *how* to get involved, *how* to look for information that will assist in the identification of an appropriate solution, and *how* to use technology appropriately; the importance of differences in organisational and national culture in multi-cultural groups, particularly where the culture of the facilitator or group leader differs, or differs from that/those of the other group members; and the importance of reliable software, hardware and netware.

Finally, there is the need for a clear understanding of how the feedforward mechanisms work. The research framework does not involve a simple input-process-output model, since the outputs of each meeting should feedforward to future meetings if the action research is to be effective. Thus, many of the inputs to the model may change in character or nature with each successive meeting or cycle as their characteristics will be informed by what has gone before.

In addition to issues of task, technology and people, we also recognise the fact that organisational and national culture will play a major role in determining both if and how a GSS is used in action research. The importance of culture, little discussed in the GSS literature (but see Watson et al., 1994; Tan et al., 1995; Burn et al., 1997; Davison and Jordan, 1998), cannot be too strongly emphasised. In this respect, we must be careful not to impose the values of one culture, as epitomised

by a piece of technology, a strategy, or a method, on another culture. Technology is not neutral because it is not designed by neutral people. This is especially true for technology that supports group work, given the importance of group work to many cultures and the many different styles of work that exist. Action research provides an excellent framework for us to suggest how we should use technology so as to fit the people, task and cultural environment. This may mean adapting the technology so that it supports the work structures that already exist. Alternatively, it may mean redesigning the technology - perhaps using the original as inspiration (cf. Hofstede, 1987) for the derivation (see e.g. Wei and Tan's (1993) description of a Chinese GSS).

10.3 An Answer and a Recommendation

In Chapter Nine, we analysed the nature of action research as it applied to and was adapted in our research. This analysis has illustrated the value of the methodology for research, for learning and for practice, whilst also enabling us to elicit potential weaknesses that should be of concern to practitioners and researchers alike. As a result of our research and analysis, our understanding of how to improve meetings using action research has been considerably enhanced. In 10.2 above, we have also examined future research and practice that needs to be undertaken in order to advance our understanding of action research further, in the context of GSS-supported meetings.

There is no simple answer to our original research question of how to improve meetings, since all meetings, contexts and tasks are different, and all people participating in meetings have their own cultures, personalities and other idiosyncrasies. Furthermore, the question that we set for ourselves is a very broad one - too broad some would argue - that can easily be extended to a life-time's work. Originally we conceived of an answer that would consist of a set of guidelines for managers to follow when employing GSS in meetings - guidelines for good practice. However, as the research progressed it became apparent that this prescriptive approach would not be appropriate, since it would involve the implicit assumption that all groups or meetings or tasks are in some way alike or at least directly comparable. Clearly this is simply not the case. It does not mean that comparisons are impossible, or even to be avoided - Table 9.1 above makes such comparisons

across the four cases in our study for the purpose of summarising their key characteristics - but does imply that there needs to be a more flexible approach to the improvement of meetings.

Notwithstanding the above caveats, we have demonstrated that in order to answer the question, a researcher must collect data from multiple sources, adopt plans that are adaptable to the infinite variety of circumstances (cf. Sun Tzu, edited by Wee et al., 1991), and be bound neither by tradition nor by any preconceived notions of his role or responsibilities, except that he adapt to circumstances as they arise. Meetings can, we believe, be improved, even in difficult or fluctuating circumstances, given persistence and a willingness to learn. Furthermore, theory about meetings and group dynamics more generally can also be refined through such techniques, as we have shown.

Measuring improvements in meetings may be possible in both quantitative and qualitative terms. Thus, it is possible to look at longitudinal trends of participant satisfaction and consensus, amongst other variables. It is also advisable to consider meeting outcomes and products, and whether or not they are accepted or implemented by their owners and users. These meeting outcomes, however, depend greatly on the quality of meeting processes. These processes in turn depend on the willingness of all members of a group to work collaboratively towards a solution. Such collaborative work is more likely to take place, we suggest, when meeting participants are both motivated and have vested interests in the outcomes of their work. It is here that the researcher has arguably the most important role to play given his responsibility as facilitator of the meeting and energiser of the meeting participants to get involved. In this respect, an understanding of the various inputs to meeting processes (see Figure 9.1) is also vital.

Based upon the analysis presented here and in Chapter Nine, we strongly recommend action research as both a philosophy and a methodology. The knowledge gained in this research will inform future work, but obviously extension to other cultures, groups, tasks and technical settings will significantly increase our knowledge about how GSS should be used so as to improve meetings.

10.4 Conclusions

In this research we set out to establish how we could apply GSS so as to improve meeting processes in business and professional environments. The addressing of this question has led us through many areas of inquiry and we have achieved much along the way. Significant milestones in this research, and accomplishments in their own right, have been the development of the initial framework, the consequent development and validation of the original version of the research instrument, and the application of action research with GSS as a methodology to the four cases. Following the cases, we have redesigned the research framework to make it considerably broader, and have also made minor changes to the instrument, incorporating a second version for use in longitudinal research. Action research has proven itself to be an appropriate methodology to use, given the variety of circumstances encountered. It has enabled us to reveal substantial amounts of rich information that has been critical to successful meetings, while also informing new knowledge and theory.

The meetings that we supported with this unique GSS and action research methodology were substantially improved, the process owners all expressing satisfaction, and many of the meeting participants also registering their sense of achievement through the processes undertaken. Nonetheless, our research has not been simple by any means, involving much analysis and discussion of the operational techniques employed. In particular we have come to realise that action research cannot be used to prescribe what should be done. Action research is an imprecise but flexible methodology that is highly adaptable to circumstances. There is no ideal group or task that action research can be used to address, since the values of the researcher inevitably come into play. However, there are key characteristics of good action research, as we described in 3.3.3 above, notably the dual objectives of intervening to improve situations and developing theory.

The action researcher has considerable freedom and opportunity to be creative in the development of a unique solution for a case. The uniqueness is important, since we recognise that no two situations are alike - they have different members, different tasks and different cultures. There cannot be a correct answer or solution that will fit all the permutations that may exist. However, there is an appropriate attitude that can be held, an attitude that does not involve stagnant or

sclerotic thought, where one is tied to a particular set of prescribed actions. We should not be bound to use GSS or any other technology unilaterally, but we should learn how to use it in an appropriate manner. Equally, we should be open to employing, developing or refining theories to explain our findings.

Learning is fundamental to successful action research. The research that we have undertaken has involved a process of continual learning. The researcher has developed, over the course of the last five years from a novice student who knew nothing about GSS, action research or meetings, through a very puzzled and frustrated student who thought that he knew quite a lot, but never seemed to achieve anything, to a researcher who now begins to fathom the complexity of the approach that he has undertaken. The learning process has, perhaps, only just started. True action research must involve continual seeking of knowledge, continual asking of questions, continual learning of how the infinite variety of circumstances require an infinite variety of methods to effect solutions. However, despite the seeming non-generalisability of these methods, they are united in a common philosophy and with some common core components, which action research provides and as we described in 10.3 above.

I look forward to an increased awareness of the importance of action research, both in Hong Kong and elsewhere, applying the philosophy that there is no universally correct answer, but there is an appropriate attitude. This attitude, of involvement and intervention, will ensure that improvements to meetings will be effected in future and that we will continue to learn and generate new knowledge.