THE FEASIBILITY OF
INTERDISCIPLINARY TEAMS

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Submitted in partial fulfilment
for the degree of
Master of Arts
in
The Australian National University
December, 1974.
CHAPTER 3 THE TEAM INTERVIEWS

To complete a feasibility model of interdisciplinary teams today, semi-structured interviews with teams in Canberra that claimed to be interdisciplinary were carried out. At this stage, the definitions of interdisciplinary and effectiveness that were used in the interviews must be clarified.

Only teams that demonstrated an interest in the whole team working together to reach a consensus of opinion were selected for study. As expected two of the teams who thought they were interdisciplinary were so highly multidisciplinary that they were rejected for study. The four teams that were finally interviewed varied in the degree of stress placed on interdisciplinarity.

The effectiveness measure in this study could only be impressionistic, because it is very difficult to measure the quality of a solution. The managers report of interdisciplinary effectiveness was taken as a first indication but was supplemented by the evidence of unproductive social tension. Difficulties arose in those teams that were not highly interdisciplinary. Two assessments of effectiveness were made in these teams. One of the interdisciplinary effectiveness and one of the effectiveness of the teams work as a whole. For this second measure the manager's report was used as a first indicator and confirmation sought with as many objective indications as possible. As these measures are heavily impressionistic it must be stressed that the final feasibility model must be extremely hypothetical.

The instigators of four interdisciplinary teams were given semi-structured interviews which proceeded in the following manner. After obtaining descriptive details and gauging effectiveness, the teams were asked a series of questions to establish which of the theoretical approaches mentioned in the previous chapter had been implemented. After each of the
above questions, they were asked two supplementary questions. The first 
ascertained whether the specific theoretical approach had been considered 
at all. The second asked for a description of the constraints, if any, 
which had weighed against, or they could see would weigh against, the imple-
mentation of that specific theoretical approach.

Where possible the answers that the instigator gave to these 
questions were checked against other team member answers to confirm or dis-
confirm their reliability. The relevant descriptive details and subjective 
estimates of effectiveness of the four teams that were interviewed are as 
follows:

I. Team 1

This was a planning team responsible for the creation of a new town 
and was in its third year of operation. It numbered forty people when it 
was established as an interdisciplinary team, however it planned to develop 
into a full-size development corporation. This institution functioned as 
a non-bureaucratic team for one year, then a change in the position of 
integrator led first to the divisionalization of the team into professional 
groups, then to the development of small area teams which would extract 
manpower from the divisions. The reason for this organization's advocacy 
of interdisciplinary study was not only that all points of view could be 
represented, but that they felt that continual interaction of the members 
would facilitate the production of one solution. That is, they felt that 
working together throughout the life of the problem with a number of 
conditions would lead more easily to one solution than an attempt to come 
to a consensus over a number of solutions. This team was reported to be 
very ineffective in its first year with no output and much social tension. 
Based on these criteria there was some increase in effectiveness contingent 
upon the development of small area teams.
II. Team 2

This planning team evolved from four professionals to forty in a very short space of time. This team included two integrators who, at the same time, had their own project contributions to make to the team. It also included a non-professional support staff of forty. The team had been together for two years and still had one year until scheduled completion of the task. The level of interdisciplinarity at which the team worked appeared to be dependent on the stage of the project (discussion Vs. evaluation stages), though at no time did it reach the level to which Team 1 aspired. It was felt that group consensus was not possible for the most part, because of the large numbers in the team and the breadth of disciplinary perspective. Generally the two integrators made the decisions based on the group's agreement on broad direction. In the discussion phases where consensus was attempted, only 20% of the meetings were reported to have been effective. A great deal of misunderstanding and 'hiding one's head in the sand' was obvious at the meetings that were attended by the author. The integrator reported that the output of the group was responsive to the initial guidelines. However as the team needed 'patching up' due to adaptation problems and was one year behind schedule, it was felt that the team could have been more effective with better integration.

III. Team 3

This was a team of policy-makers for a whole department concerned with area development. There were only 11 members in this team with one of those members being the team integrator. The department was bureaucratic in terms of position and pay structure but the team claimed that the hierarchy was nominal only and that they operated with a minimum of bureaucratic reverence. The department was only two years old and in the first year the team operated with its highest degree of interdisciplinarity. This was
when the department was concerned with producing general strategy. In the second year the members of the team became much more independent with subgroups concentrating on specific regions of development. It was reported that the concentration on consensus was dependent on the time available. The team was felt to be very efficient in whatever way the team was operating and there was little obvious social tension.

IV. Team 4

Team 4 was a health service team concerned with the assessment and treatment of individuals in a specific problem area. The team was non-bureaucratic. One individual had the responsibility of information gathering and administration of clerical duties, and another the responsibility of report writing. In the initial stages, the team had a 'benevolent dictator' who set up the team in quite a structured way and then acted as co-ordinator through the initial difficult stages. She then phased out of the team but always kept an eye on the well-being of the group. An interdisciplinary team was set up because it was felt that better results accrue from a professional team working together and understanding one another's point of view. This team was highly interdisciplinary. It was judged to be very effective and the evidence of this was social cohesion and great effort toward group facilitation. Objective evidence of its effectiveness was the maintenance of this service amidst the total re-organization of the surrounding organization.

In the following chapter the descriptive answers to the three questions concerning each specific theoretical approach will be studied in order to assess the potential for implementation of these approaches in interdisciplinary teams today. An impressionistic feasibility model for interdisciplinary teams will then be proposed.
I. Theoretical Reverence

Of the four teams, only the co-ordinator of team 4 had referred to theory before setting up his team. It would have been surprising if Team 4 had not referred to theory, as the co-ordinator of a social science team should be well versed in the theory of group dynamics. Team 1 suggested that there had been no theoretical precedent from which to draw. Team 2 indicated that they had evolved very quickly into the present size and that, because of the superstructure within which they were working, they had to get results quickly and maintain in-house respectability. They suggested that there was no time for theory. Team 3 indicated that theory did not fit in with the esprit de corps of the organization. They appeared to associate theory with the bureaucratic structure which they strongly rejected. Theory is here seen in four different ways, none favourable; an unnecessary luxury, out of date, too time consuming, unnecessary structure. These comments suggest that in the highly physical science teams, social problems and the theory associated with them weren't considered important enough to warrant attention.

II. Theoretical Relevance

The team that had reviewed theory (i.e. Team 4) had also carried through most of the theoretical prescriptions suggested to it and was very effective. Their modifications of theory were as follows:

1. Selection only accounted for professional competence but was supplemented by within-group training.

2. The co-ordinator dropped out of the group when it was felt that the group, through within-group training, were able to cope.

As this group which had a high degree of effective interdisciplinarity endorsed the specific theoretical approaches, it is felt that in most situations today where interdisciplinarity is highly valued they will be
relevant. Of course it is not expected that the same recipe will work for all teams. Simply that all approaches should be considered and emphasis placed on those most appropriate to the specific situation.

III. The Constraints Against Specific Theoretical Approaches

To most suggestions this section will describe and study the replies of the scientific teams only (i.e. Teams 1, 2 and 3). This is because Team 4 implemented the approaches with relative ease and consequently failed to suggest oppressive constraints.

When a small team was recommended, Teams 1, 2 and 3 replied that the nature of the problem required large numbers for effective treatment. Team 3 intended to increase in size when competent individuals could be found.

Communication problems were evident in the two large teams (i.e. teams 1 and 2). There was a high degree of informality of communications in all teams, with most transactions occurring in meetings. Team 2 reported that quite often programme decisions and findings failed to be transmitted. This informality is not likely to cause problems in the small teams, especially Team 3 which worked together in an open office. But in the large teams some degree of organized communication was obviously necessary. Team 2 reported increases in communication after guidelines were distributed and working papers were collated and distributed. Team 1 reported the same after the new integrator outlined a framework. The constraints suggested by these two teams against employing a full time integrator and co-ordinator were monetary. The constraint against the recommendation that one man do both jobs was again monetary. Team 1 further suggested that an individual so qualified would be difficult to find. When it was recommended to Team 3 that even though they were small they would still need a co-ordinator to facilitate communication when they wanted to function in an interdisciplinary way they suggested not only monetary constraints but that the team would reject the imposition of any structure.
As indicated previously, Team 3 worked within an open office arrangement. Extra rooms were available if individuals required them. Teams 1 and 2 did not have this arrangement. They suggested that they were constrained by the conventional building structure that they had to work within. For Team 1 the deeper constraint was financial. Team 2 considered it unlikely that resources would be made available for a change in building structure simply to facilitate what the 'powers that be' already viewed as an unrespectable venture.

Teams 1, 2 and 3 indicated that the group was not informed in the initial meetings of the framework of the task or guidelines for team functioning. The integrators indicated that they lacked insight into these guidelines. Teams 1 and 2 reported resultant tension. Team 3 reported an easy situation. There were two characteristics of Team 3 which would explain this difference. As well as being a small team, it was comprised of individuals with very similar values. According to the research findings of Pelz and Andrews (1966) this should have provided a degree of emotional security. Secondly, as Budner's (1962) research relating choice of career to tolerance of uncertainty suggests, to apply for a job in a newly established, highly controversial, policy-forming team, the members must have had some degree of tolerance for uncertainty. Their rejection of any form of structure and request to write their own work statements are further indications of this tolerance.

Both Teams 1 and 2, when they did issue guidelines, made the mistake of imposing rather than suggesting them. They admitted that this was a mistake and suggested that they were constrained by lack of insight as to the effects of their actions.

The members of the four teams were selected according to professional competence. There was no thought given to how they would work together as a team. Team 1 suggested that the difficulty in finding qualified
manpower was constraining. Teams 2 and 4 suggested that they were constrained by the security of tenure policy in the larger organization. Team 3 indicated that selection for qualities other than professional competence was unnecessary. This indicates that the high degree of compatibility that was present in that team was a function of accident rather than intent.

When group training was recommended as a means of overcoming selection difficulties, Teams 1 and 2 considered that it would take too much time and cost to implement. Again Team 3 associated the approach with highly undesired and unnecessary cost.

A quick overview of all the responses indicates that the qualities that Teams 2 and 3 associated with the frequently expressed economic costs of implementing theoretical approaches were extensiveness and irrelevancy. Team 1 suggested extensiveness only.

The quality of extensiveness that these three teams associated with the cost of theoretical approaches is likely to be real. Firstly because the education system has not encouraged and trained individuals in similar group endeavours. And secondly, because there is a lack of ready organizational skills and sensitivity in this sector of society. This assertion is based on the research findings mentioned earlier suggesting physical scientists are not interested in social dynamics and more specifically on frequent reference to lack of insight and interests in this field in the interview data.

The associated quality of irrelevancy is likely to be real also because it is the two teams that value interdisciplinarity the least that mention it most frequently.

IV. The Model of Feasibility

The situation above indicates that interdisciplinary teams in the natural sciences field are not likely to be effective unless the following occur:
1. They are informed of the costs associated with achieving interdisciplinarity today.

2. They, and in some cases the bureaucratic superstructure supplying the resources, value interdisciplinarity enough to pay the high costs of internal acculturation to interdisciplinarity.

Interdisciplinary teams with a high component of social scientists stand more chance of effectiveness in terms of interdisciplinary criteria because this sector of society is trained to value consensus, possess organizational skills and is more generally interested in social interaction. This means that the probability that this sector will pay attention to these factors in an interdisciplinary team is greater. It also means that the costs of internal acculturation are not likely to be as high as those of a team with a high natural sciences component.

This decree does place harsh conditions on interdisciplinary endeavours in the natural sciences. But the comparative information obtained from the interviews does point to the specific theoretical approach which is most closely associated with feasibility today. The information indicated that the more ambitious the interdisciplinary endeavour, the more the team needs to concentrate on its group dynamics to be effective.

For instance, Team 3 avoided much interdisciplinary tension by its small size, and its value orientation which provided some degree of emotional security. And Team 1 indicated that many of its problems were overcome by the large team of over forty members splitting up into small area teams. Team 2 suggested that the size of the team and the breadth of the problem was the factor preventing the degree of interdisciplinarity that it would have liked to achieve.

Based on the interview data so far, the structural model of the effectiveness of research endeavours in Fig. 1 is proposed.
The relationships proposed in this model are as follows:

1. There should always be a certain base allocation of resources to interdisciplinary acculturation in any interdisciplinary group independent of size of teams and breadth of task. This base rate would respond to the value placed on interdisciplinarity.

2. The greater the breadth of the task and size of the team, the greater the allocation of resources to the three functions in the model needs to be for an interdisciplinary team to be effective.

3. The greater the degree of disparity between the two inputs the greater the degree of multidisciplinarity that should be implemented.

4. The effectiveness of interdisciplinary endeavours will reduce the future allocation of resources necessary because there will be a greater supply of interdisciplinary group skills.

5. The degree of integration of data necessary in either an interdisciplinary or multidisciplinary team will always be dependent on size.

Because of the high costs of interdisciplinary acculturation today, and lack of insight into the need to pay these costs, the model would suggest that the feasibility of interdisciplinarity today increases as the size of the team and breadth of task falls and these costs fall. The relationship holds for all interdisciplinary teams today but disparities in the two inputs are likely to have less severe effects in the teams with a high social science component because the three functions would be less expensive.

V. Recommendations

Based on this model, it is recommended that Team 1 should take account of all theoretical suggestions concerning group acculturation, and dependent on the reassessed value they place on interdisciplinarity, allocate sufficient resources to this process.
As Team 3 has a conditional reverence for interdisciplinarity but an aversion for imposed structure, the model would recommend that they do not grow in size.

It was obvious that the main concern of Team 2 was simply producing a number of solutions and welding them together, i.e. 'before and after' interdisciplinarity. This was indicated by their lack of concern with the reported 80% ineffective discussion groups. It would not pay them to allocate resources to group interaction. So, considering the size of the team, the model would recommend that their present structure, integrative body with large multidisciplinary support system, would be the most effective. However greater concentration should have been placed on the work integration of this team. The team diverged severely from time schedule and some of the disciplinary contributions were out of phase.
CONCLUSION

It is evident from the research and the interview data that interdisciplinarity has been a very ill defined and misunderstood concept. Misunderstanding of the organizational implications of this concept led in one case to severe set-backs as the team attempted to approach the ideal. The interviews suggested that in sectors of society today without a history of experience in group dynamics, the costs of effective interdisciplinarity are very high. This should be clarified in those planning manuals in which it is recommended so often. Only then can the prospective team organizer decide in an informed way whether he values interdisciplinarity enough to pay these costs. A simple theoretical approach to the organization of interdisciplinariany research would place the unfinancial team organizer who valued interdisciplinarity in a no man's land. However the comparative study of team effectiveness in relation to specific theoretical approaches provided information which suggested a more precise feasibility model for interdisciplinary teams today. The model asserts that the costs of achieving effective interdisciplinarity can be reduced to some extent by reducing the size of the teams and the breadth of the task. Because of the high costs of interdisciplinary acculturation today, and lack of insight into the necessity of outlay toward this process, unambitious interdisciplinary ventures are recommended by the model.

It is surmised that the costs of interdisciplinarity would be reduced to a far greater extent if the feasibility model were further refined by quantitative operations research. A more precise association between selection of organizational approaches, the relationships between approaches and effectiveness of interdisciplinary research would reduce superfluous costs and make extended interdisciplinary ventures more feasible. However research at this level will have to wait until roles, functions and effectiveness
are more clearly defined. To produce the resources and information that will facilitate such research, it is absolutely essential that wherever a high value is placed on a number of disciplines working together, the expected integrative problems be recognized and the necessary organizational approaches taken.
BIBLIOGRAPHY


