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ABSTRACT

These papers represent the efforts of individual researchers from five countries: Australia, Belgium, Canada, The Netherlands and the United States. Each paper reports on educational change in a different country, based on the Concerns-Based Adoption Model developed at the Research and Development Center for Teacher Education at the University of Texas at Austin. Papers included are as follows: "Implementing a High School Geography Curriculum in the State of Western Australia," by Colin J. Marsh (Australia); "Studying Change in Primary and Secondary Schools in Belgium and the Netherlands," by Roland Vandenberghe (Belgium); "The Effectiveness of Concerns-Based Staff Development in Facilitating Curriculum Implementation," by Jim Leary (Manitoba, Canada); "A Study of Curricular and Instructional Change Processes in Rural High Schools," by Robert Larson (Vermont, United States) and "The Functioning of School Principals in Relation to Large-Scale Change Efforts in the Netherlands," by Rudolf van den Berg (Netherlands). References are included with each paper. (TE)

INTERNATIONAL PERSPECTIVES ON

EDUCATIONAL CHANGE

Colin Marsh
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Report No. 3170

Papers presented at the American Educational Research Association

April, 1983

Montreal, Canada

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To The Reader

We are pleased to send you this set of papers that was delivered in the symposium on International Perspectives on Educational Change at the 1983 annual meeting of the American Educational Research Association in Montreal.

These papers represent the efforts of individual researchers from five countries: Australia, Belgium, Canada, The Netherlands and the United States. The unifying element in the papers is that each one reports on educational change research based on the Concerns-Based Adoption Model developed at the Research and Development Center for Teacher Education at The University of Texas at Austin. We commend these researchers for the quality of their work and for the contribution their research makes to our understanding of educational change and the value of the Concerns-Based Adoption Model to the change process.

Should you wish to seek additional information from the individual authors their address is given on the cover page of each paper.

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IMPLEMENTING A HIGH SCHOOL GEOGRAPHY CURRICULUM IN THE STATE OF WESTERN AUSTRALIA

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Paper presented at the annual meeting of the American Educational Research Association, Montreal, April, 1983.

Printed in Australia

IMPLEMENTING A HIGH SCHOOL GEOGRAPHY CURRICULUM IN THE STATE OF WESTERN AUSTRALIA

Colin J. Marsh

The present state of the field of curriculum implementation is still exploratory and inconclusive, despite a heightened research interest in the area over the last decade in many Western countries. Large scale studies (Berman and McLaughlin [1975], Huberman and Miles [1982], Steadman *et al.* [1980] and Marsh *et al.* [1981]), and reviews (Fullan and Pomfret [1977], Leithwood and Montgomery [1982]), have highlighted important factors conducive to effective implementation but specific contextual factors appear to limit the degree to which these research findings can be generalised across school sites.

Curriculum implementation isn't the only area of research which is making slow progress in a quest for knowledge utilisation. Taking a wider stance, knowledge production in many fields of industry is also faced with the task of effective dissemination, take-up and utilisation. Various models have been produced which emphasize particular processes of action, group-dynamics, problem-solving strategies (Zaltman [1977], Leithwood [1981]). This paper focuses upon the Rogers & Shoemaker (1971) model to explain the contextual elements of implementation and Hall's (1973) Concerns-Based Model to single out the specific implementation factors operating for secondary school geography teachers.

West Australian Education System

There is a tripartite system of secondary schooling within the state of Western Australia and this mirrors a similar pattern which occurs in all other states of Australia. The major system is the state education department which provides secondary education for 70% of the school population. The Catholic Education system provides secondary schools for 14% of the school population, and independent private schools account for the remaining 16%. In this paper two groups of teachers are discussed, the state education department teachers and the non-state education department teachers (Catholic school teachers and private school teachers).

The state education department teachers tend to be selected from those locally trained at the four institutions in Western Australia offering a four-year teacher education programme leading to a Bachelor's degree and a diploma in Education. Their employment can take them into all areas of Western Australia, both rural and urban. The majority are members of a strong teachers' union which has had considerable success so far in obtaining specific conditions of work such as those relating to number of teaching periods, preparation time per week.

Non-state education department teachers are often selected from all states of Australia and even overseas, although there has been an increasing tendency to attract local graduates judged to have very high potential in teaching. There is a tendency for many of these teachers to have high academic qualifications, such as a Bachelor with honours degree, or a Master's degree. In some cases it has been possible for teachers with high academic qualifications but no teaching experience to obtain teaching positions in these schools. School staff in these schools tend to be far more stable than in state education schools because the schools are predominantly situated in the one metropolitan city (Perth) and promotional opportunities are far more restricted. An association of non-state education department teachers is in existence but it has not been able to demand the specific guidelines about teaching duties accorded to their state school teaching counterparts.

Curricula for the final two years of secondary school (Years 11 and 12) are dominated by the pressures of external examinations. The Year 12 examination results are most important for students intending to proceed to tertiary studies,as an aggregate of these examination results is used as a basis for determining whether or not a student will be admitted to a tertiary institution. A Joint Syllabus Committee, a formal body comprising academics, education administrators and teachers, operates for each examinable subject offered to students in their final two years of secondary schooling. It is their task to initiate and legitimate a specific syllabus and to formulate a Year 12 examination associated with it. Despite teacher involvement on on each committee, the academics and administrators wield considerable power in initiating and supporting particular curriculum changes. This is due in no small measure to their related leadership roles in tertiary institutions

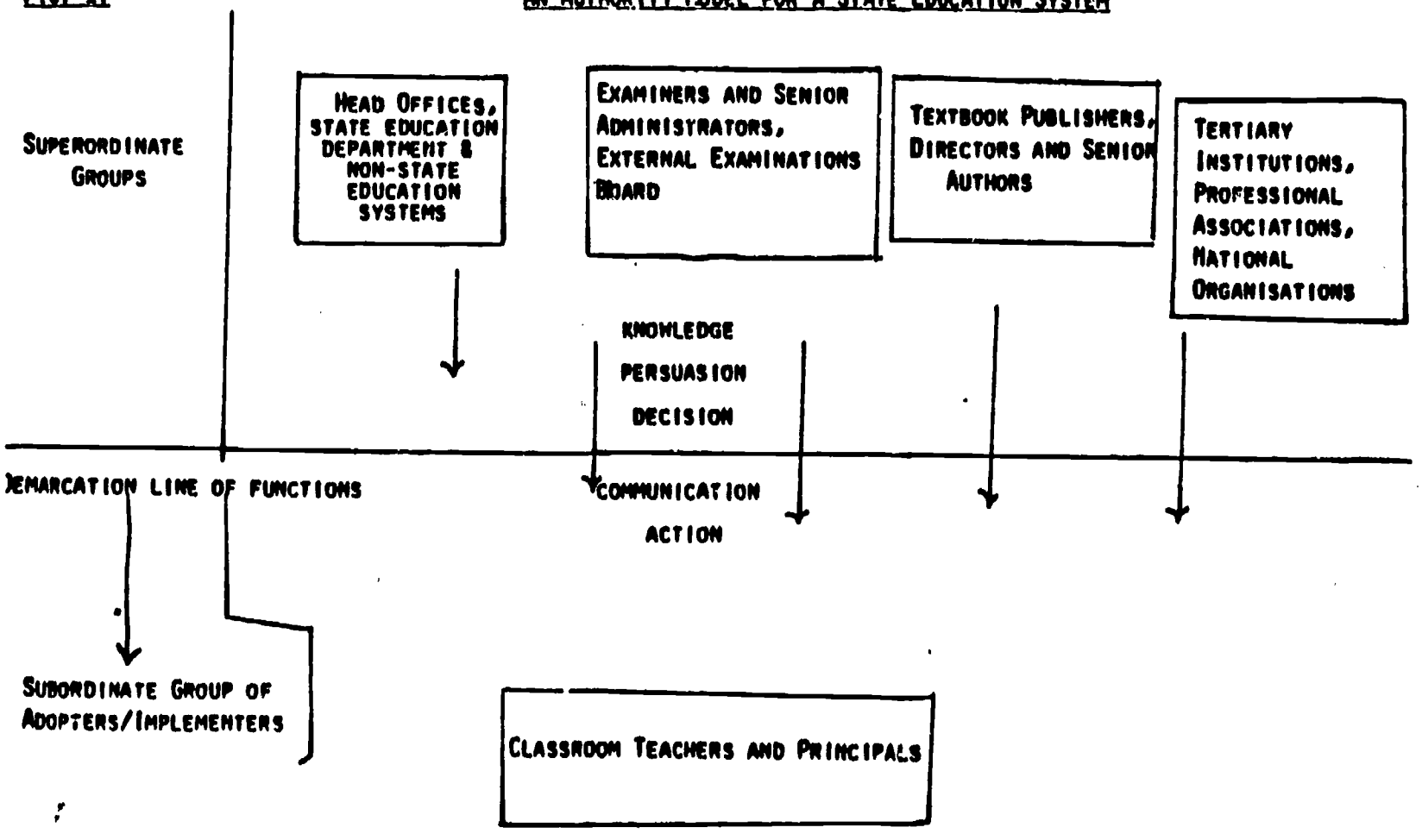
or as senior administrators in the education systems or as elected office bearers in professional subject associations.

These relationships are depicted in Fig.1, building upon Rogers and Shoemaker's (1971) Authority Innovation-Decision processes. This model has been argued elsewhere to be particularly applicable to Australian education systems (Marsh [1979], Marsh and Huberman [1982]). Rogers and Shoemaker suggest that innovations pass through five processes of knowledge, persuasion, decision, communication and action but that the major decisions are made by a superordinate group (administrators, directors) whereas the subordinate group (teachers and building principals) are chiefly concerned with implementing these decisions. In Fig.1, Rogers and Shoemaker's model is extended to include four superordinate groups, all impinging upon teachers and principals working in state government high schools, Catholic high schools and private colleges. It is postulated that officials operating in these four superordinate groups are dominant in the first four processes of 'knowledge', 'persuasion', 'decision' and 'communication'. They have access to knowledge creation and have positions which enable them to persuade others to accept certain curriculum changes. By contrast, teachers and principals have some influence at the 'communication' stage but are chiefly concerned with 'action', namely the implementing of curricula decided upon by the superordinate groups.

A new Geography Curriculum

The Rogers and Shoemaker processes can be illustrated by specific reference to a senior school geography curriculum which was introduced into Western Australia in 1974. Changes in content which brought together new geographical concepts and inquiry processes, in keeping with the "new geography" of the 1960's and 1970's, were introduced by academic geographers on the Joint Geography Syllabus Committee during 1972-73. The academics in this case held leadership positions in academic institutions and the professional geography association (see Fig.1). They were instrumental in producing a draft syllabus, based upon ten major concept clusters (for example, "settlements as hierarchies of central places"). With a minimum of discussion by geography teachers, they were able to have it accepted by the examination body and by the school systems within the short period

FIG. 1. AN AUTHORITY MODEL FOR A STATE EDUCATION SYSTEM



(ADAPTED FROM ROGERS AND SHOEMAKER (1971))

of less than a year. Senior school geography teachers were given no choice in the matter when it was announced in 1975 that the new syllabus was to replace the earlier one and that a Year 12 external examination based upon the two-year course (80% of the total mark) would be held for the first time in 1976.

In a survey of teachers' reactions to the new syllabus in 1976, Hill and Marsh (1979) noted that teachers were very receptive to the innovation and that "there would seem to be no evidence of resistance to the new ideas, despite the fact that teacher participation in the decision-making process had been minimal" (p.42). Efforts were made by the state education system to provide resources for this new geography syllabus. Inquiry resource units were developed, and field work ideas were disseminated by a full-time officer. Teacher inservice days were provided by the state education system, and more especially by the professional subject association.

However, by the end of the 1970's it was clear to teachers and administrators that all was not well with the new geography syllabus. The concept clusters incorporated into the syllabus had been stated in broad terms so that teachers might have considerable freedom in selecting specific content of special relevance to their local area. Furthermore, it was assumed that individual schools would be permitted to progressively increase their proportion of school-based assessment from 20% in 1975 to 50% within a few years. This move to school-based assessment was summarily terminated in 1977 by the Board of Secondary Education (the overriding authority for all Joint syllabus committees) when it announced that external examinations would count for 100% from henceforth when determining tertiary admission places. Through their subject association, geography teachers began clamouring for more specific details to be included in the two-year syllabus, as it was now to be wholly determined by students' achievements at a final year, external examination.

The proposed solution was for a subcommittee of the Joint Geography Syllabus Committee to be established, comprising two academics, a senior education administrator (state education department) and a senior teacher (state education department) to establish a modified syllabus which clearly stated the areas to be examined. The subcommittee reorganised the previous concept clusters and more importantly, produced specific content details which would henceforth be examinable. The modified syllabus was accepted

by the Joint Geography Syllabus Committee in 1980 and became officially accepted and introduced into all West Australian secondary schools in 1981.

The superordinate groups as depicted in Fig. 1 were powerful forces during the 1970's and 1980's. The examination group, via the official committees, played a dominant role in introducing and monitoring the new syllabus. Also significant were the head office groups which were able to ensure that the new syllabus was adopted in their respective education systems. The professional association superordinate group was able to put pressure on the examination group for a new syllabus in the first instance, and then to press for revisions at a later period.

Implementation of the syllabus

In this study the writer used the Concerns-Based Adoption Model (CBAM) methodologies developed by Hall, Wallace and Dossett (1973) to obtain specific data on levels of implementation presently reached by senior school geography teachers. One key element of CBAM is the concept of "concerns" as measured by a Stages of Concern questionnaire (SoC Q), a 35 item Likert scale questionnaire. Using SoC Q it is possible to pinpoint teachers' concerns as they progress with the implementation of an innovation. It is hypothesised that teachers move from initial concerns about "self", to concerns about the "task" and eventually to concerns about the "impact" of their teaching upon students. The SoC Q has been developed and refined over five years and validity and reliability coefficients have been derived, all at very high levels (Hall, George and Rutherford, 1977).

Another key dimension of CBAM is "Levels of Use". It is hypothesised that a teacher will move from "non-use" through to a "mechanical" level, a "routine" level, and in some cases, to "refinement" and "refocussing levels". Numerous studies have confirmed these eight LoU levels, including those by Rutherford (1978), Loucks and Melle (1980), Barrows and Klenke (1980), James and Hall (1981), Matthews and Suda (1982). To accurately ascertain what a teacher actually does with respect to an innovation, an interview technique has been developed. Eight different LoU's have been identified and operationally defined, using the LoU interview (Loucks, Newlove and Hall, 1975).

Stages of Concern (SoC) and Levels of Use (LoU) provide two key indicators of how implementation is proceeding, but it is also necessary to consider the particular characteristics of an innovation. The "Innovation Configuration" (IC (Hall & Loucks, 1981) refers to how various components of an innovation are organised and used by an implementer. In some situations, developers of an innovation take steps to ensure that critical configuration components are implemented by all teachers (fidelity os use is emphasised). Alternatively, some curriculum innovations have no essential components, thus permitting teachers to make many and varied adaptations.

The subjects

Details of the essential configuration components of the geography syllabus were obtained by undertaking interviews with the four sub-committee members responsible for the modified syllabus and by having follow-up discussion with teachers currently using the syllabus. A sample of 44 Year 11 and 12 geography teachers (27%) out of a total of 162 teaching in state education department secondary schools, and a sample of 15 Year 11 and 12 geography teachers (28%) out of a total of 54 teaching in non-state education department secondary schools, were contacted during 1982. Over a period of three visits to each teacher, data were collected about their respective SoC's and LoU's. The following questions were established for the study and data was collected which attempted to answer them:

1. How is the geography syllabus being used by geography teachers, as measured by LoU data?
2. Does the proportion of teachers at each LoU level vary between state education department schools and non-state education department schools?
3. What are the major concerns expressed by geography teachers using the new syllabus?
4. Does the proportion of teachers at each SoC level vary between state education department schools and non-state education department schools?
4. What are the particular concerns for users at each of the SoC stages?

Results

Interviews with each member of the subcommittee of the Joint Geography Syllabus Committee revealed that they perceived their task as simply providing specific content details for the existing concepts. They took their brief as being quite narrow and that it wasn't necessary to devise objectives, nor methodology or classroom organisation details. In so doing, it is clear that they reorganised some of the concept clusters and added several new emphases, especially in "ecosystems" and "plate tectonics", but this wasn't an explicit intention. They saw their task as clarifying and tightening the content of the existing syllabus, so that all parties concerned, examiners, teachers, students, parents and employers, were aware of what was examinable and what wasn't.

The subcommittee's actions raise some interesting issues about establishing an innovation configuration (IC). Although the syllabus concepts were now embellished with specific content examples to be covered, this was the only mandatory element. Teachers were not given guidelines as to how the syllabus was to be taught. Neither were they given any over-riding goals or objectives. It might be conjectured that teachers would make a variety of adaptations given this apparent lattitude - to 'reinvent' in multifarious ways, to use Rice and Rogers (1980, p.500) terminology. But in practice, this was unlikely to occur, since the external examination paper provided the key to success and failure for teachers and students alike. In all likelihood, the external examination paper narrowed the choice of instructional activities open to geography teachers.

Teachers' Levels of Use (LoU)

The LoU interviews with the 59 teachers provided base data about where these teachers were at in 1982. As indicated elsewhere (Loucks, Newlove and Hall 1976), the focussed interview procedure provides reliable data about how teachers actually use an innovation, even though it is based upon reported use rather than observations.

The proportion of teachers at the different LoU levels is listed in Fig.2. As all geography teachers are required to teach the syllabus, the non-user levels (0 to II) do not apply.. The data provides a snapshot of teachers' levels at this point in time and, of course, further interviewing

would be required to establish the degree to which teachers changed their LoU's over a period of years.

The number of teachers at Level of Use III Mechanical Use was 25% for state educational department teachers and 27% for non-state education department teachers. These results are not unexpected as interviews revealed that many of the teachers were teaching senior school geography for the first time. Because the revised syllabus is only in its second year of operation, it might be considered surprising that so few interviewees were in this category. The comparatively low figures might be explained by the fact that some teachers have been using the new syllabus since 1975, and they have been able to successfully interpret examination requirements despite the vagueness of the concept clusters in the original document. It might also be conjectured that some teachers have made very few changes, if any, to their mode of teaching since the introduction of the 1981 syllabus, and so they are not exhibiting typical level III behaviors of "disjointed and superficial use of the innovation" (Hall, *et al.*, 1973).

The majority of the interviewees were assessed at Level of Use IVA Routine (59% state education department teachers, 67% non-state education department teachers). This level is typified by teachers who have stabilised their activities and who give little thought to improving the use of the innovation or its consequences. It is also interesting to note that teachers at this level "make no special efforts to seek out information as a part of ongoing use of the innovation" (Hall *et al.*, 1973, p.8).

This data might be interpreted in different ways. From one point of view it could be viewed as highly satisfactory that approximately two-thirds of the teachers in the sample have reached a stable, routine pattern of teaching the geography syllabus. This standpoint might be deemed to be highly desirable if specific configuration (IC) components had been available so that direct links between particular configurations and routine use could be established.

In the absence of specific configuration components, the results are far less impressive. It could be inferred, for example, that teachers are so overwhelmed by the external examination that they are content to establish a pattern which merely ensures a reasonable standard of examination success

FIG. 2.

LEVELS OF USE DISTRIBUTION

		STATE EDUCATION DEPARTMENT SCHOOLS		NON-STATE EDUCATION DEPARTMENT SCHOOLS	
		N	%	N	%
NON-USE	0	-	-	-	-
ORIENTATION	1	-		-	
PREPARATION	11				
MECHANICAL USE	111	11	25	4	27
ROUTINE	1VA	26	59	10	67
REFINEMENT	1VB	5	11	1	6
INTEGRATION	V	2	5	-	-
RENEWAL	V1	-		-	-
		44	100	15	100

for their students. That is, they are not motivated to adapt the syllabus in any way, to extend or develop particular concepts or learning activities. An earlier study by Marsh (1981, p.10) noted that this attitude was prevalent among teachers surveyed in 1980 when he stated that

> "the syllabus outline provides potential flexibility for teachers but the external examination mode has forced them to adopt regimented teaching methods to ensure examination successes for their students."

Very few interviewees were assessed at Level of Use IVB Refinement (11% state education department teachers, 6% non-state education department teachers) and even less at Level of Use V Integration (5% state education department teachers and 0% for non-state education department teachers). In the Western Australian context, it appears that the external examination pressures are so great that teachers have little motivation to experiment with changes of any kind, whether they are experimentations to improve student outcomes emanating from formal feedback from students (Level IVB) or group collaborations with colleagues to increase student outcomes (Level V). In circumstances where a syllabus is to be implemented according to precise guidelines it could be viewed undesirable for teachers to be operating at IVB and V levels of use. This might explain the low numbers of LoU IVB's and V's when it might be expected under normal evolution for a sizeable number of teachers to progress to higher levels as they became more experienced and competent (Hall, 1978).

Differences in Levels of Use between State Education Department and non-State Education Department teachers

The overall proportion of teachers at each LoU level is very similar for teachers in state education department schools and non-state education department schools (Fig.2). Proportions are almost identical for LoU III's and very similar for LoU IVA's. The only differences occur at the IVB and V levels, and it is difficult to make inferences about this because of the differences in size of the respective samples.

A number of reasons could be provided for the similarities between the two samples. The geography examination, a subject used to determine students' tertiary admittance, affects all geography teachers regardless of the system in which they are operating. This must be a major factor influencing the LoU levels adopted by teachers. In an earlier study (Marsh, 1981) it was found

that the academic background of teachers in both systems was very similar, although more of the non-state education department teachers held post-graduate qualifications in geography. This study also noted that the proportion of highly experienced geography teachers (having taught for nine years or more) was comparable in both systems (62%, 59%). Therefore, the similarities in LoU levels in the two samples is not unexpected.

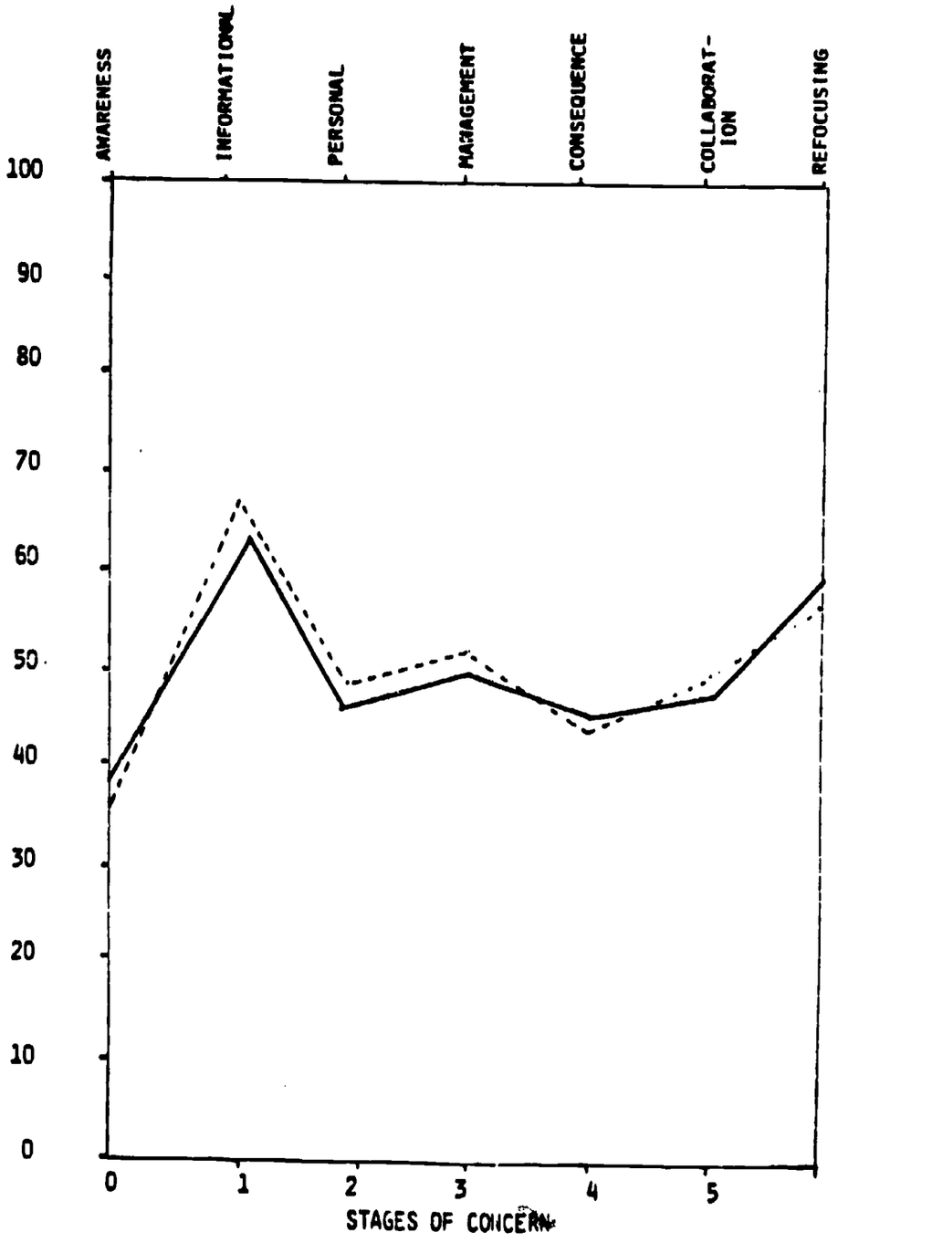
Teachers' Stages of Concern (SoC)

Teachers' stages of concern (SoC) were obtained by having respondents complete the Stages of Concern questionnaire during one of the school visits made by the interviewer. The total group SoC's for state education department teachers and non-state education department teachers is displayed in Fig.3.

The overall SoC's reveal moderate to high concerns on many of the stages, but the peaks are at Stage 1 "Informational" and Stage 6 "Refocussing". The Informational peak might be explained by the many teachers who expressed concern in interviews about resource materials for some of the more difficult geography concepts, especially 'ecosystems', and 'spatial differentiation'. Because the geography syllabus provides very limited information and pertains to content only, teachers have to be constantly seeking information (emphasis, hints) about the questions which will be included in the external examination for the coming year. In this sense, seeking information is a major activity for teachers on each occasion that they have students sitting for the geography external examination.

The second highest score on Stage 6 seems to indicate that teachers have ideas about changes they would like to bring about. For example, interviewees mentioned their concerns about weaker students who lacked basic geographical skills and the need to provide a syllabus which was geared more to their interests. These concerns about wanting to make some changes does not necessarily contradict the LoU findings that many teachers are at a routine level. It could be that these teachers are sufficiantly pragmatic to realize that they are powerless to make very many changes while the external examination looms large.

FIG. 3. STAGES OF CONCERN FOR THE TOTAL SAMPLE OF GEOGRAPHY TEACHERS



The SoC data for state education department teachers and non-state education department teachers are very similar indeed. The congruency of their concerns can possibly be attributed to the same factors mentioned above when their respective LoU scores were compared.

Stages of Concern sub-sets per LoU categories

Subsets of SoC data are depicted in Figs.4-7 by separating out results for LoU's III, IVA, IVB and V, respectively.

Respondents at Level of Use III Mechanical use have peak concerns at Stage 1 (Informational) and Stage 3 (Management) but also a high concern at Stage 6 (Refocussing). The first two peaks can be explained by the reason given earlier, namely that many of these teachers were teaching the syllabus for the first time. It is understandable that their concerns were predominantly related to acquiring and managing resources suitable for student use. A high score on Stage 6 might be attributable to teachers' concerns about the unsuitability of the academically-oriented syllabus for students of medium to low ability and the need for a more practically-oriented alternative.

The SoC scores for respondents rated at Level of Use IVA Routine tend to be lower for most stages. As might be expected, these teachers have established a stabilised pattern of teaching and so their concerns have been greatly reduced. It is interesting to note, however, that the two moderately high peaks are for Stage 1 (Informational) and Stage 6 (Refocussing). As indicated above, these peaks can be explained by the concerns expressed by teachers about some difficult concepts in the syllabus, concerns about the questions likely to be included in the external examination in any given year (Stage 1 Concerns), and concerns about the inappropriateness of the syllabus for average and lower ability students (stage 6 concerns). On both the LoU III graph (Fig.4) and IVA graph (Fig.5) it is evident that the scores for the state education teachers and non-state education department teachers are very similar indeed.

The state education department respondents at Level of Use IVB Refinement

FIG. 4 - RELATIONSHIP BETWEEN STAGES OF CONCERN AND LEVEL OF USE III MECHANICAL USE OF GEOGRAPHY TEACHERS

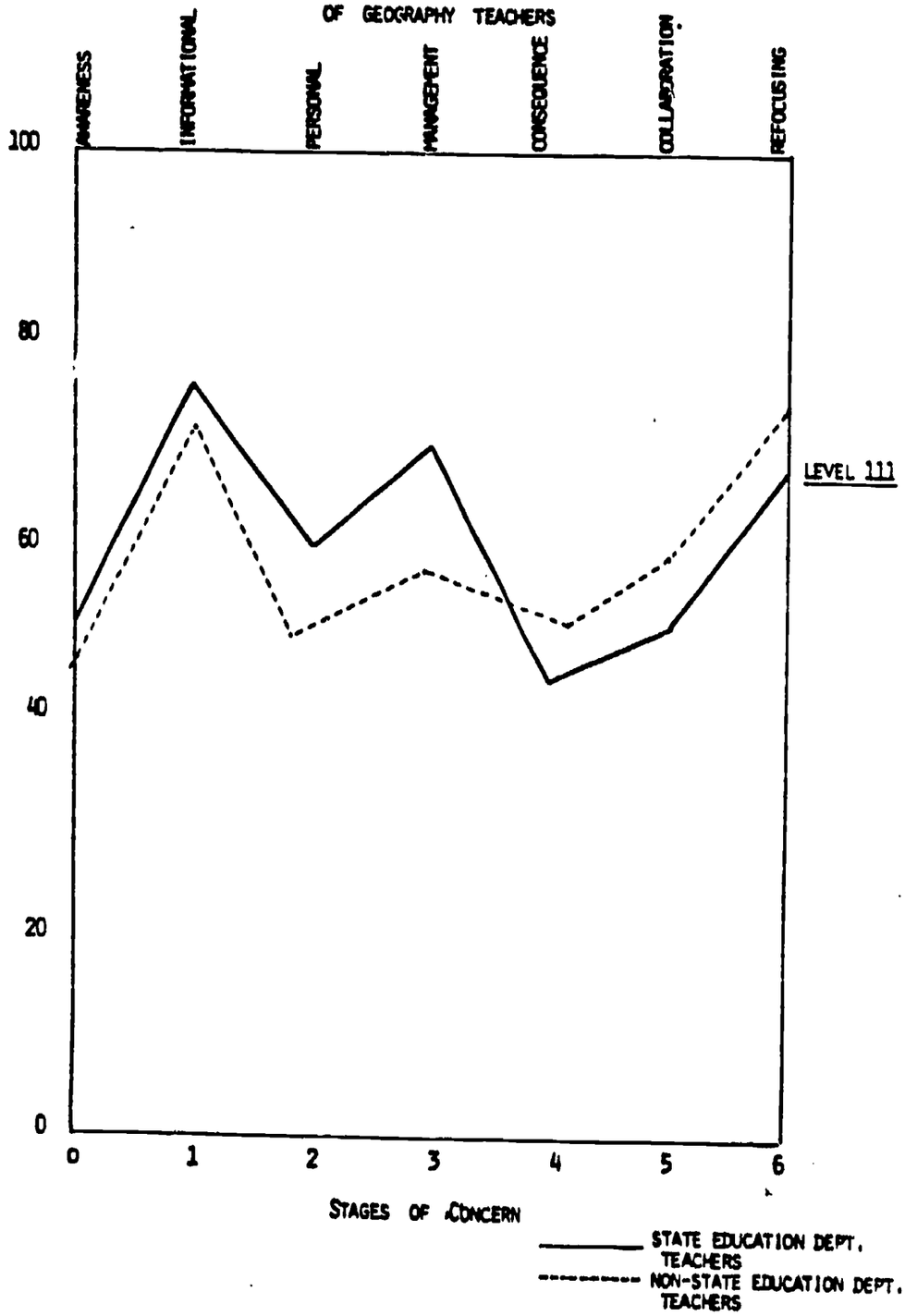


FIG. 5 - RELATIONSHIP BETWEEN
STAGES OF CONCERN AND LEVEL OF USE IVA ROUTIIE DATA
OF GEOGRAPHY TEACHERS

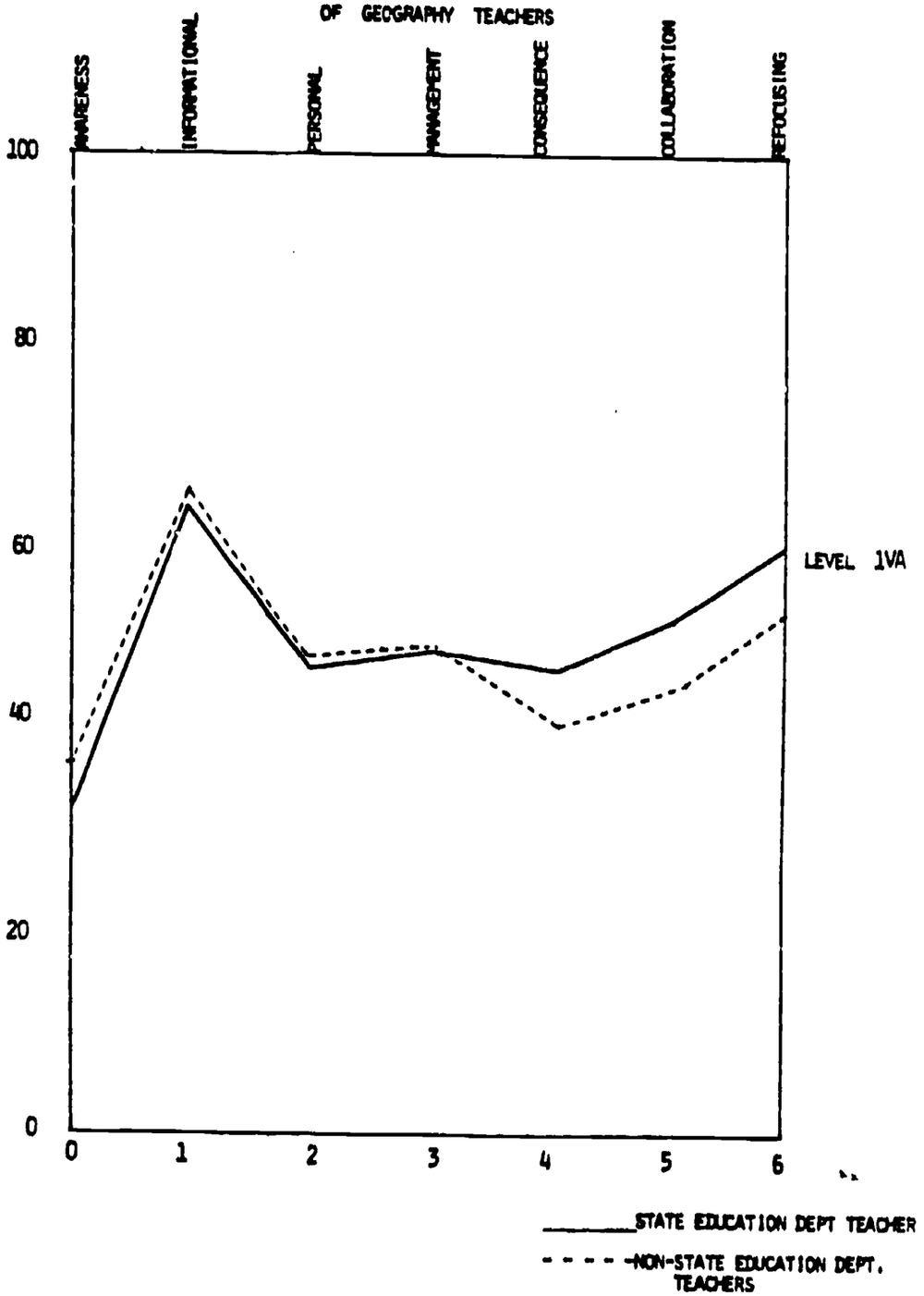


FIG. 6 - RELATIONSHIP BETWEEN STAGES OF CONCERN AND LEVEL OF USE IVB REFINEMENT DATA OF GEOGRAPHY TEACHERS

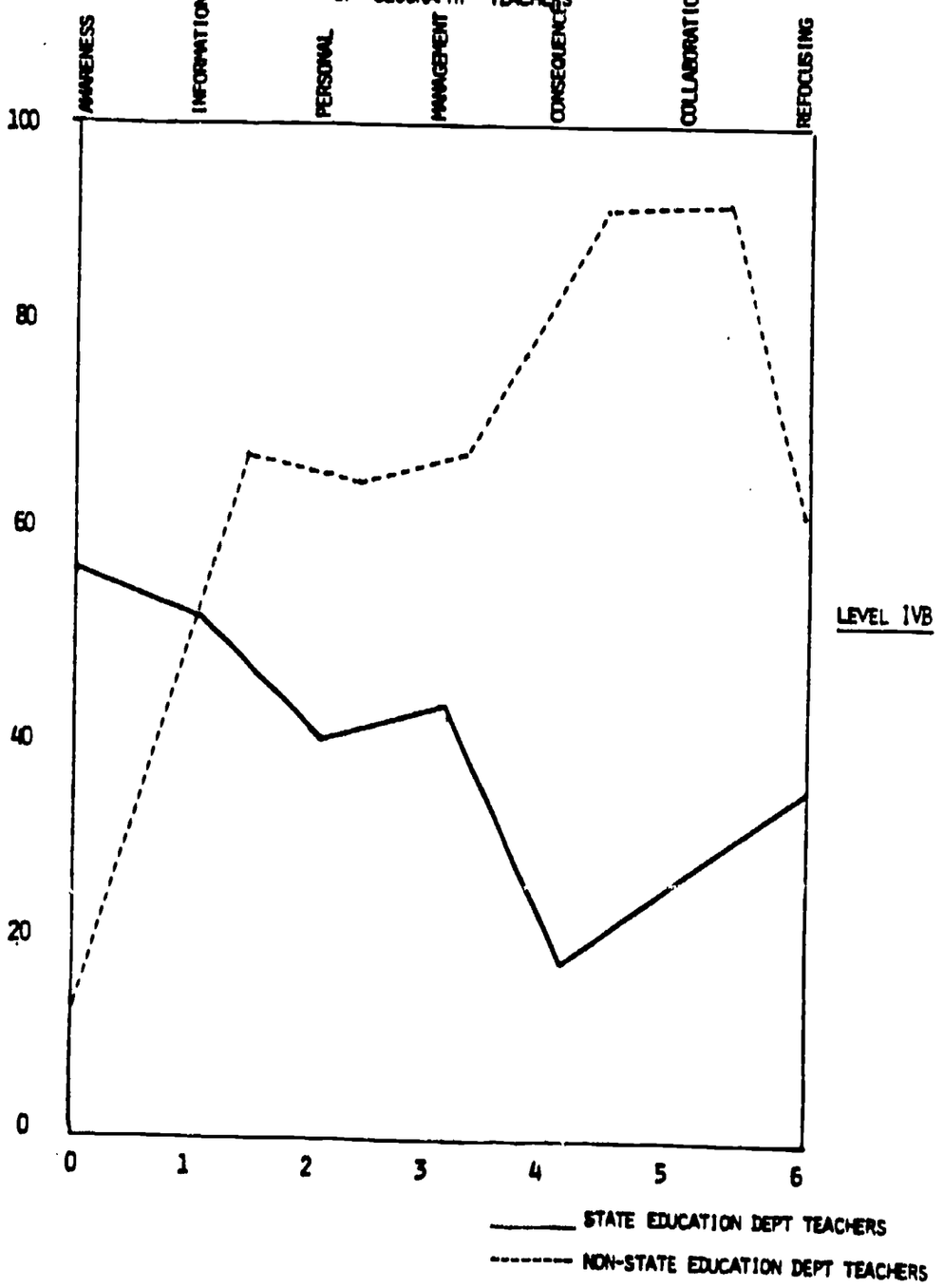
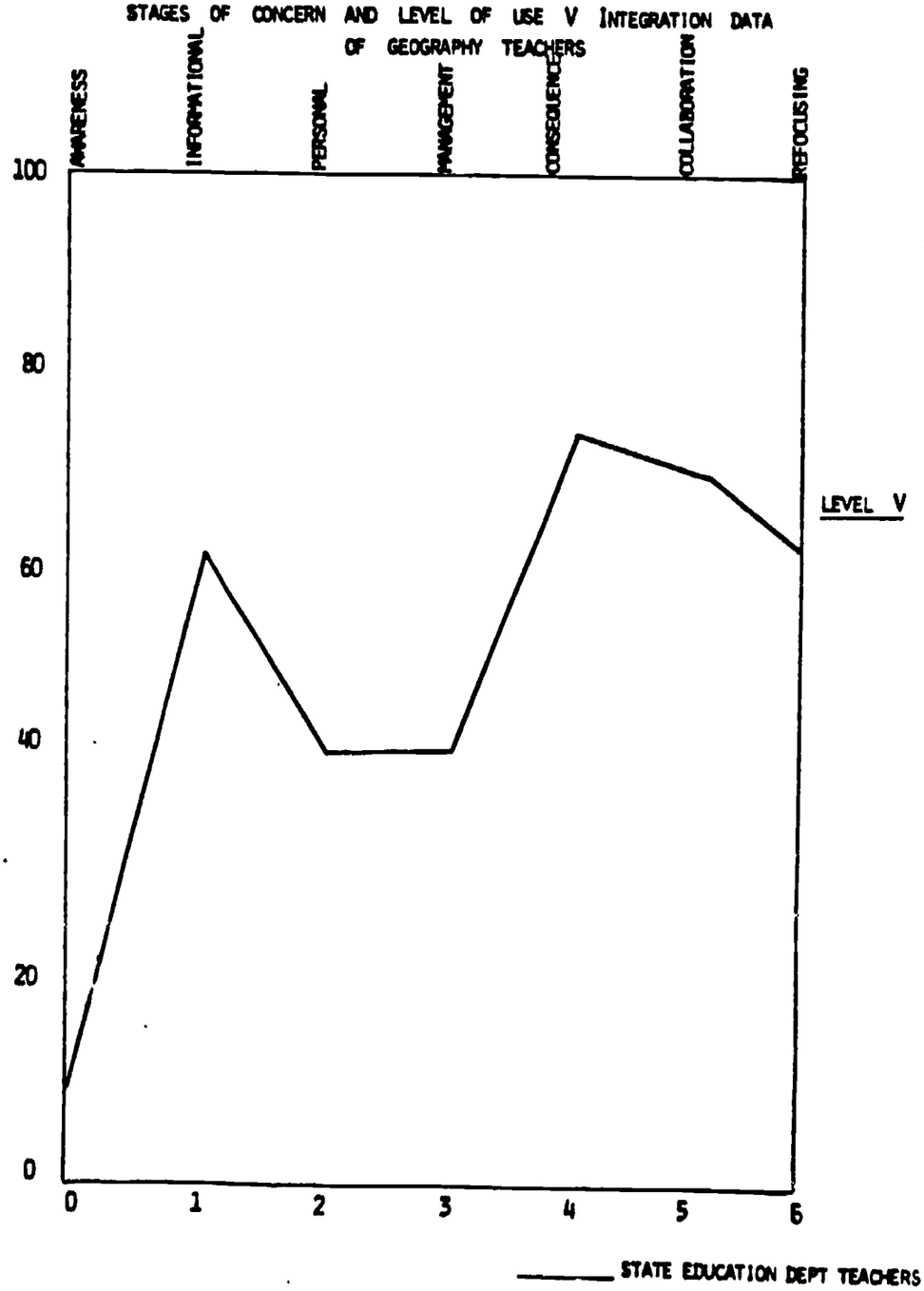


FIG. 7 - RELATIONSHIP BETWEEN STAGES OF CONCERN AND LEVEL OF USE V INTEGRATION DATA OF GEOGRAPHY TEACHERS



had lower scores on SoC. The peak scores were for Stage 1 (Informational) and Stage 0 (Awareness), the latter representing low user concerns (scored on a reverse polarity basis). An examination of the individual scores for these five respondents indicated in fact that three respondents had high stage 0 and relatively low stage 1, while two recorded high stage 1 and low stage 0. That is, the group data reflects an averaging effect as some individuals have low concerns about the syllabus (high stage 0) and some have moderately high concerns about finding out more information (high stage 1) but no single individual had high stage 0 and 1 concerns.

Only one non-state education department teacher was rated at LoU IVB and this profile seems to follow the hypothesised profile of CBAM developers (Hall, 1973) of being highest on stage 4 (Consequence) and stage 5 (Collaboration). This teacher also had very high concerns (low stage 0) about the syllabus. That is, the teacher has high concerns about what the syllabus is attempting to accomplish but he/she is also very concerned to liaise with other staff members to produce more effective teaching procedures that will ultimately lead to higher student outcomes.

The two level V Integration respondents only came from the state education department sample of teachers. They have highest concerns toward the far end of the SoC scale, having peak scores for stage 4 (Consequence), stage 5 (Collaboration) and stage 6 (Refocussing) but also high concerns (reverse polarity) at stage 0 (Awareness). This pattern again illustrates the ideal evolution pattern of implementers as hypothesised by Hall (1973). These teachers are concerned about student-focussed issues which involve them in sharing resources and ideas with colleagues to achieve higher levels of achievements with their students. The high stage 0 concern indicates that they are concerned about a number of issues related to the teaching of the geography syllabus.

Implications

The CBAM methodology appears to have considerable potential for collecting specific information about how teachers are implementing a particular innovation. The SoC and LoU instruments, in particular, can provide detailed information regarding individual and group concerns of

teachers about an innovation, and specific details about their related teaching levels at a given point in time. This data has special relevance if it is collected at regular intervals from the same teachers. Since the data collected in this study was collected at only one period, it should therefore be considered as base data.

The developers of the 1981 geography syllabus made important modifications to the earlier syllabus by specifying the content to be examined. This has enabled teachers and examiners alike to be aware of what content can be expected to be known by students sitting for the external examination. However, content alone is only part of a comprehensive syllabus document. Unless goals and objectives are also included, teachers are given very little indication about why certain content should be taught.

The lack of goals and objectives also creates a major problem for the implementation of a syllabus if a fidelity of use perspective is required. Clearly, there are a variety of ways (configurations) that a specific item of content can be taught. It all depends upon the particular purpose a teacher has in mind. But to a large extent, the presence of an external examination which requires all students to answer many of the same questions, seems to suggest that some methods of teaching content might be more effective than others. The optimal methods of teaching content are obviously those which fulfil the same goals and purposes as the chief examiner has in mind.

The greater the congruence between a teacher and an examiner in terms of goals, methods and content selected, the more chance students will have of attaining a just examination mark for their efforts. There are, therefore, advantages in having a detailed, comprehensive syllabus when an external examination is closely tied to it.

The CBAM data collected in this study enabled some patterns to be identified among the sample of geography teachers. For example, the large number of teachers operating at a routine level of use is comparable with the proportion noted in other CBAM studies (Hall and Loucks, 1981). However, when the concerns of these Level IVA users are examined, it is evident that they do have strong concerns about the need for alternative teaching programs, even though they have not taken steps to do anything about it. A feeling of powerlessness seems to permeate the responses of many teachers operating at this particular level.

The small number of teachers operating at higher levels of use might not necessarily be seen as undesirable. Provided a syllabus was explicit in its configuration components, then a majority of teachers operating at a routine level of use with low levels of concerns could be viewed as desirable. In this study, the small number of teachers operating at levels of use IVB and V seems to indicate that only these few have been able to break out of the shackles of a hegemonic external examination system, and to be willing to adapt and modify the syllabus in an attempt to optimise outcomes for their particular students.

The differences between concerns and teaching levels of state education department teachers and non-state education department teachers was not supported by the data. In fact, the stages of concerns expressed by the two groups were almost identical (Fig.3) and the proportion at each LoU were very similar indeed. Although these teachers operate in two different education systems, it is apparent that the commonality of their geography teaching programmes, external examination and similar academic study career patterns taken at the same institutions, has tended to homogenise their concerns and their levels of curriculum implementation.

The information obtained from this base data study, in itself, provides some interesting guidelines for inservice activities. Taking the LoU and SoC data, it is clear that a small proportion of teachers at the mechanical level of use would gain considerably from inservice sessions on 'management' and 'informational' concerns. Teachers who are currently operating at a routine level of use could also gain from inservice activities which dwelt upon 'informational' concerns and, to a lesser extent, 'collaboration' and 'refocussing' activities with fellow staff members. More specific details about useful inservice activities could be obtained from an item analysis of the SoC Q items which contributed to the peak concerns.

This study provides further evidence that the CBAM instruments can provide meaningful data for persons involved in curriculum development and implementation activities, and inservice programmes.

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STUDYING CHANGE IN PRIMARY AND SECONDARY SCHOOLS IN BELGIUM AND THE NETHERLANDS

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Paper presented at the annual AERA-meeting,
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Studying change in Primary and Secondary Schools in Belgium and the Netherlands *
A contribution to the Symposium : International Perspectives on Educational Change

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1. CBAM and large-scale innovations in Belgium and the Netherlands

Typical of most of the innovation-projects in Belgium and the Netherlands is their so-called large scale. In this introduction we are not treating the issue of the large-scale point of view in detail (see : van den Berg & Vandenberghe, 1983, in press). We confine ourselves to some important characteristics.

A large-scale innovation is characterized by the fact that the innovation plans are initiated by the government (Ministery of Education). The government proposes a complex innovation more than the field of education itself.

In the second place it is a question of a multiplicity of goals which are mostly formulated in an abstract and general way. In connection with this multiplicity of goals we find that different innovations must be implemented coherently and simultaneously. Radical changes have to take place in the domain of the curriculu of pupils' evaluation , of the reporting of results to pupils and parents, of the grouping of pupils. In the sphere of the school, structural changes crop up as well : teachers must work together in subject-workgroups ; arrangements about contents and methods are required ; regular contacts should be made with the parents ; internal change facilitators should try to coordinate the concrete work, etc. In the third place the policy plans and the resolutions cover a longer term. The implementation of a large-scale project lasts for several years and is put in several stages ; not everything can be tackled simultaneously. So one often starts with a limited number of schools and then one tries to transfer experiences, insights and materials to other schools.

What precedes further means that not only schoolfocused developments are involved. but also activities that exceed the school; those activities are often intended to make other schools receptive to the project concerned. In other words, within the projects not only the school itself is set a task, but there is also the task of giving a stimulus to the development of other schools.

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Finally many authorities and people are involved in the support and the facilitation. Mostly one distinguishes external and internal change facilitators. This diversity with regard to facilitation brings on that in many cases several types of innovation-strategies are simultaneously applied regarding the same target groups.

It is in the context of some such large-scale innovation-projects that the theoretical assumptions of CBAM as well as the developed instruments are tested and adapted. This led among others to the adaptation of the SoC-Questionnaire for teachers and of the SoC-Questionnaire for Change Facilitators in view of the Belgian and Dutch situation ; it also led to an adjusted translation of the LoU-Interview and to the use of the Taxonomy of Intervention for the description and analysis of interventions within the frameworks of large-scale projects. About all this there were detailed reports (R.M. van den Berg & R. Vandenberghe, 1981). Besides this a workbook and materials were also developed for the organization of a CBAM-workshop. These workshops are mainly attended by change facilitators.

In this paper we will consecutively pay attention to the construction of an adapted version of the SoC-Q for Teachers, to some results that contain a few indications as to the meaning of these results and to the use of the SoC-Q for Teachers in large-scale projects.

2. Adaptation and construction of the SoC-Q for teachers

In a first stage the 35 items of the original Austin-Questionnaire (Hall, George, Rutherford, 1977) were translated. Taking into account the meaning of the different stages 22 new items were formulated. The researchers of the R&D Center for Teacher Education (Austin) have checked, with the cooperation of a student born and raised in the Netherlands, if the translated and added statements rendered the meaning of each stage in a satisfactory way. This led to an interim questionnaire with 57 items.

Next this interim questionnaire was submitted to Belgian and Duth teachers, working in Primary and Secondary schools. In doing so a variety of innovations was aimed at. Table 1 contains a survey of the innovations and the number of teachers.

Table 1 : Projects and teachers involved in the construction of the SoC-Questionnaire for Teachers

	Belgium	The Netherlands
Primary schools	R.P.S. : individualized reading instruction: first and second grade (n = 145)	ISMA : project for individualized instruction (n = 62)
Secondary schools	R.S.S. : reform towards a comprehensive type of secondary school (n = 300)	M.A.V.O. : project for individualized instruction (n = 214)
	T.S.S. : preparing the implementation of the R.S.S. (n = 335)	K.P.C. : project for individualized instruction (n = 132)
	T.S.S. (n = 396)	

R.P.S. = Renewed Primary School
R.S.S. = Renewed Secondary School
T.S.S. = Traditional Secondary School
I.S.M.A. = Project for individualized instruction for Primary Schools

M.A.V.O. = Middelbaar Algemeen Vormend Onderwijs (Intermediate General Secondary Education)

K.P.C. = Katholiek Pedagogisch Centrum
Catholic Pedagogic Center ('s Hertogenbosch, The Netherlands)

A factor-analysis was applied to these data, according to the procedure of defining the principal components with varimax-rotation.
A six-, seven- and eight-factor-solution were compared. For the recording of a statement in a certain factor a minimum loading of .30 was used each time. With regard to the contents the seven-factor-solution led to the most meaningful description of the structure.

These seven factors were regarded as seven subscales ; on these subscales two item-analyses were carried out with successive iterations in order to obtain subscales with a maximal reliability (α-coefficient).
In table 2 a survey of the final questionnaire is to be found.

Table 2 : SoC-Questionnaire for Teachers : structure, number of items, - coëfficients

Stages	Number items	- coëfficient
Awareness	7	.769
Personal/ Informational	12	.895
Consequences for pupils	5	.801
Management	10	.876
Collaboration	8	.845
Refocusing based on experiences with pupils	5	.730
Refocusing	5	.744

A complete description of the seven subscales can be found in appendix 1.
The correlations between the seven subscales and at the same time an indication of the relative homogeneity of each subscale appear in table 3.

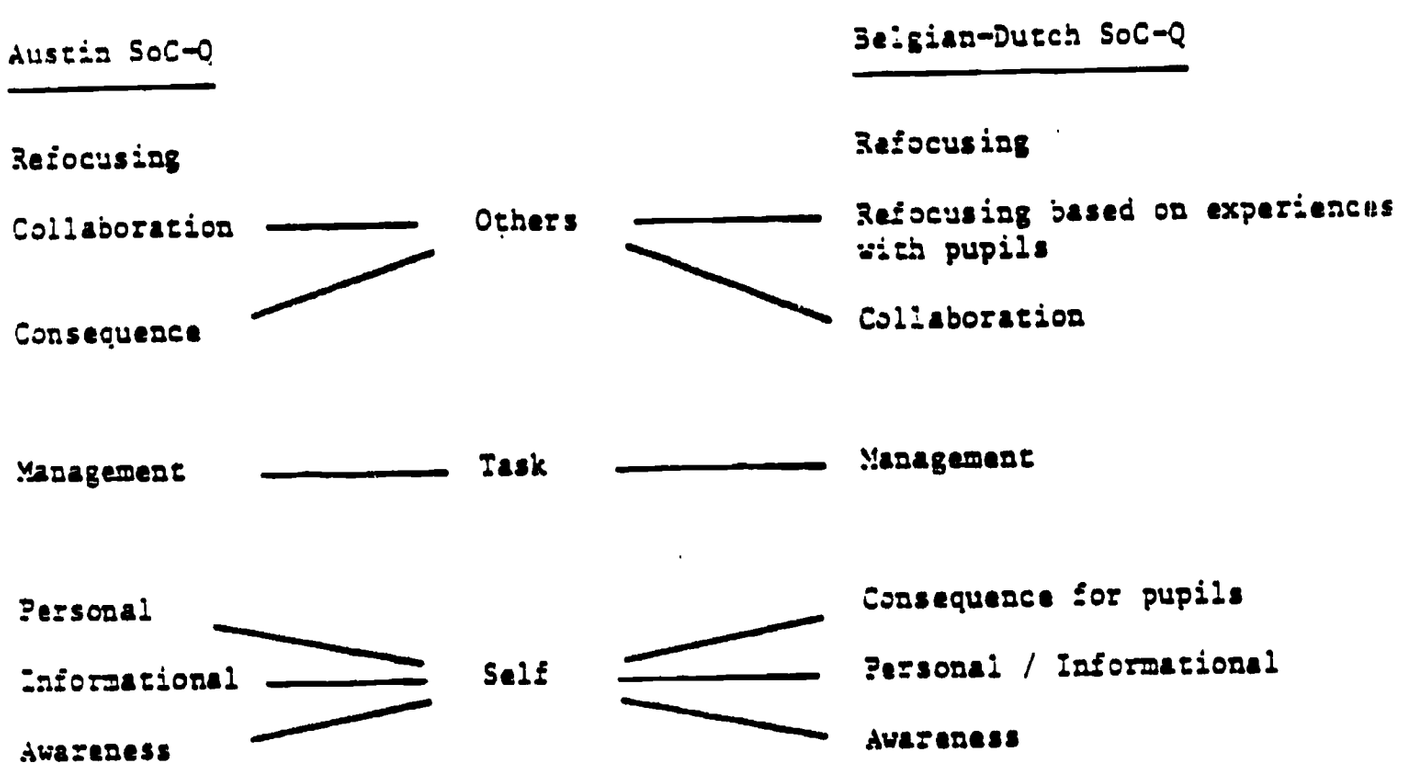
Table [illegible] : [illegible]-questionnaire for T[illegible] : correlations between 7 scales (n - 1585)

	Awareness	Personal/ Informational	Consequences for pupils	Management	Collaboration	Refocusing exp. pupils	Refo[illegible]
Awareness	-	.49	.41	.36	-.29	-.17	.[illegible]
Personal/ Informational		-	.54	.45	.13	.05	.[illegible]
Consequences for pupils			-	.46	-.12	.10	.[illegible]
Management				-	-.10	.04	.[illegible]
Collaboration					-	.54	.[illegible]
Refocusing/exper. with pupils						-	.[illegible]
Refocusing							

3. Discussion of the SoC-Questionnaire for Teachers

Now comes a concise discussion of the seven subscales (or the seven stages); we particularly pay attention to a comparison with the original American questionnaire.
A general comparison of the structure of the Austin SoC-Q and the Belgian-Dutch SoC-Q is to be found in figure 1.

Figure 1 : Structure of the Austin SoC-Q and the Belgian-Dutch SoC-Q for Teachers



We will recur to the differences between both structures. First we give the correlations between the original seven subscales and the Belgian-Dutch seven subscales in table 4.

Table 4 : Correlations between the Austin 7 scales and the Belgian-Dutch 7 scales (n=1585)

Austin-Q. / Belgian-Dutch -Q.	Awareness	Informational	Personal	Management	Consequence	Collaboration	Refocusing
Awareness	.90	.58	.49	.33	.06	.28	.06
Personal/ Informational	.44	.90	.91	.42	.38	.20	.25
Consequence for pupils	.38	.56	.49	.43	.47	- .10	.17
Management	.43	.40	.48	.94	.24	- .08	.28
Collaboration	.28	.03	.06	- .08	.37	.91	.26
Refocusing/exper. with pupils	.16	.08	.13	.07	.68	.53	.61
Refocusing	.07	.07	.05	.25	.28	.08	.72

3.1. Awareness

Taking into account the substance of the statements (see appendix 1) and the quite high correlation (.90) with the original awareness-scale, we can assume that the subscale of the Belgian-Dutch SoC-Questionnaire has the same meaning as it has in the Austin Questionnaire.

3.2. Personal-Informational

Here we find a conspicuous difference. The two subscales "Information" and "Personal" which are distinguished in the Austin SoC-Q appear together in the Belgian-Dutch version. Supposing that the difference between both forms of concerns can perhaps be found among so called "non-users", factor-analyses were carried out upon groups of "non-users" (in this case teachers of T.S.S. and of T.S.S.-in preparation). Neither for these groups was it possible to ascertain the difference between "Personal" and "Informational". This new subscale correlates quite well the Austin subscale "Informational" (.90) and with "Personal" (.91).
We want to link the meaning of the "Personal/Informational" subscale to one of the characteristics of large-scale innovation-projects (see 1). A teacher who scores high on this subscale is especially interested in changes that will occur in his personal worksituation, in the way in which he must prepare his daily work, in the time needed to realize the innovation, but he also wants to get the chance to study and/or discuss the information about the innovation and he wants to know how his colleagues feel about it and what they are doing. In the subscale as a whole the "personal concerns" stand out more clearly than the "informational concerns". We believe this to be the result of the general and vague nature of many of the goals of large-scale innovation-projects and of the fact that teachers wonder whether they will be able to bring about simultaneously and coherently the numerous concrete innovations contained in this project. It is not excluded that at first the teacher feels overwhelmed and explicitly expresses his worries about the expected activities ; in this respect he hopes that receiving some information can be of help to him.

3.3. Consequences for pupils

Here too a striking difference is at stake compared to the Austin SoC-Q. Although we also use the word "consequences" in this case, this subscale

apparently has another meaning than it has in the American questionnaire. The subscale "consequences for pupils" correlates with "Information" (.56), but also relatively well with "Personal" (.49) and with "Consequence" (.47). These data, together with the substantial meaning of the items, have led to attributing the following meaning to this new subscale. In the same way as the need exists for general information about the innovation and about the significance of it for oneself as a teacher (Personal/Informational), one also desires to hear something about the value of the innovation for the pupils. As a teacher one wants to find out as soon as possible about the possibilities of the innovation in view of a certain group of pupils one is experienced with. This interpretation at the same time explains the position this subscale acquires with regard to the other subscales (as a form of "self-concern"). At this point we also want to relate the meaning of this subscale to the issue of large-scale educational innovations. The fact that a teacher quite early puts questions about the meaning of the innovation for the pupils (or his/her pupils) depends, according to us, on the numerous obscurities of large-scale innovation-projects. The problems the teacher experiences himself, are, as it were, expressed via problems he anticipates among his pupils. (Moreover, one clearly comes across this same concern in talk with parents !)

In the second place it is also plausible that teachers quite early want to acquire insight into the value of the innovation for the (their) students from the, possibly implicit, point of view that they are, as a teacher, evaluated on the basis of the results their pupils attain. The questions raised by the teacher, his worries about the innovation might result in weaker achievements by the pupils. This certainly does not do any good to his image as a teacher. Consequently he wishes to dedicate himself to that innovation if he is sure that it leads to greater successes by his pupils. That is why we consider the subscale "Consequences for pupils" as a form of self-concern.

3.4 Management

Here the similarity to the Austin subscale is remarkable (r = 94). Further comment is not required.

3.5. Collaboration

The same remark is valid here as for the previous subscale. The significance of the collaboration is the same as in the Austin Questionnaire (r = .91).

3.6. Refocusing based on experiences with pupils

This subscale correlates quite well with two subscales from the Austin Questionnaire, viz. with "Consequence" (.68) and with "Refocusing" (.63). These correlations and the substance of the statements themselves lead to interpreting this subscale as a form of commitment which expresses itself in wishes regard to a reconsideration of the innovation, especially a reconsideration based on experiences with the pupils. In other words, to a certain extent this subscale shows a similarity with the Austin subscale "Consequence"; furthermore the emphasis is laid upon the refocusing of the innovation. The latter also means that a general involvement regarding refocusing takes form in a more specific way, notably reconsideration as far as this is possible on the basis of the achievements pupils obtain.

3.7. Refocusing

Concerning this last subscale the similarity with the Austin subscale is striking (r = .72). The statements included in this subscale also refer to the presence of ideas to introduce more or less concrete changes.

4. Discussion of some results

The few results offered below, are derived from different large-scale projects in Belgium and the Netherlands. Beforehand we remark that most of the results coincide with the Austin results. In a first stage of our inquiry we have used those results for evaluative ends. That is to say we have employed the SoC-profiles as an indication for the degree of implementation of an innovation (4.1.).
In the near future - research on that topic is going on - we want to use SoC-profiles (as well as LoU-results) as indicators in the framework of large-scale projects. In this issue the central question is : what is the indicative value of a certain SoC-profile of teachers who are involved in a large-scale innovation-project ? Or put differently : from what facts can we explain and understand a certain profile or a certain development ? Investigating the possibilities of the use of a SoC-profile as an indicator, seems to us especially useful for facilitators. A consequence of this question is that additional data are gathered by means of another research in-

strument (in our instance : a semi-structured interview) about a number of important aspects of a large-scale project (see 4.3.). Apart from determining subscales, c.q. stages (see 3) the question as to the sequence of those stages is of course an important matter.
In paragraph 3 we have described the stages in a certain sequence. The correlations offered in table 3 indicate that this might be the correct order. Still it remains important, by means of follow-up-research, to study this development further. For the moment we have some data at our disposal in this respect (see 4.2.).

4.1. SoC-profiles and evaluation of large-scale projects

In this paragraph we deal with some profiles in order to illustrate how these data can be used within the framework of an evaluation of large-scale projects. In this respect we assume that the form of the profiles allows us to formulate some general conclusions concerning the implemantation of an innovation. In this way we presume the relatively high scores in the stages "Awareness", "Personal/Informational", "Consequences for pupils" and "Management" to be an indication for a defective or a starting implementation. Consequently we think that relatively high scores on the other subscales point at an advanced implementation. However, it is obvious that this fact is only one of the possible data that can be gathered when evaluating large-scale innovation-projects.

In figure 2 we find a so called "user-profile". From this we can deduce that on the average the principles of the ISMA-project (the Netherlands) and the developed material are applied in a satisfactory way. As has already been pointed out it is necessary to collect other evaluative data in view of more final statements.

Figure 2 : Stages of concern Profile for Teachers of the ISMA-Project

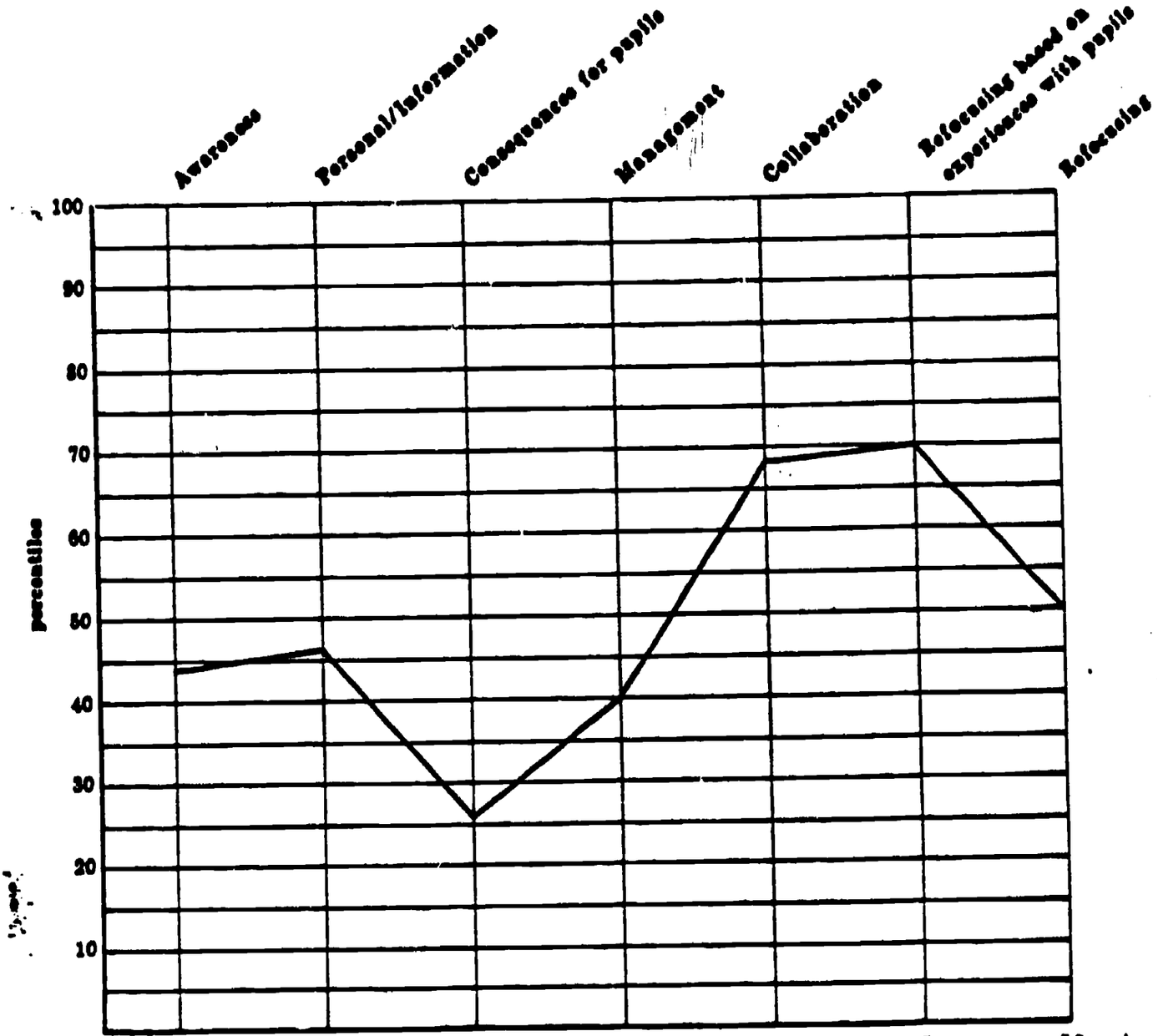
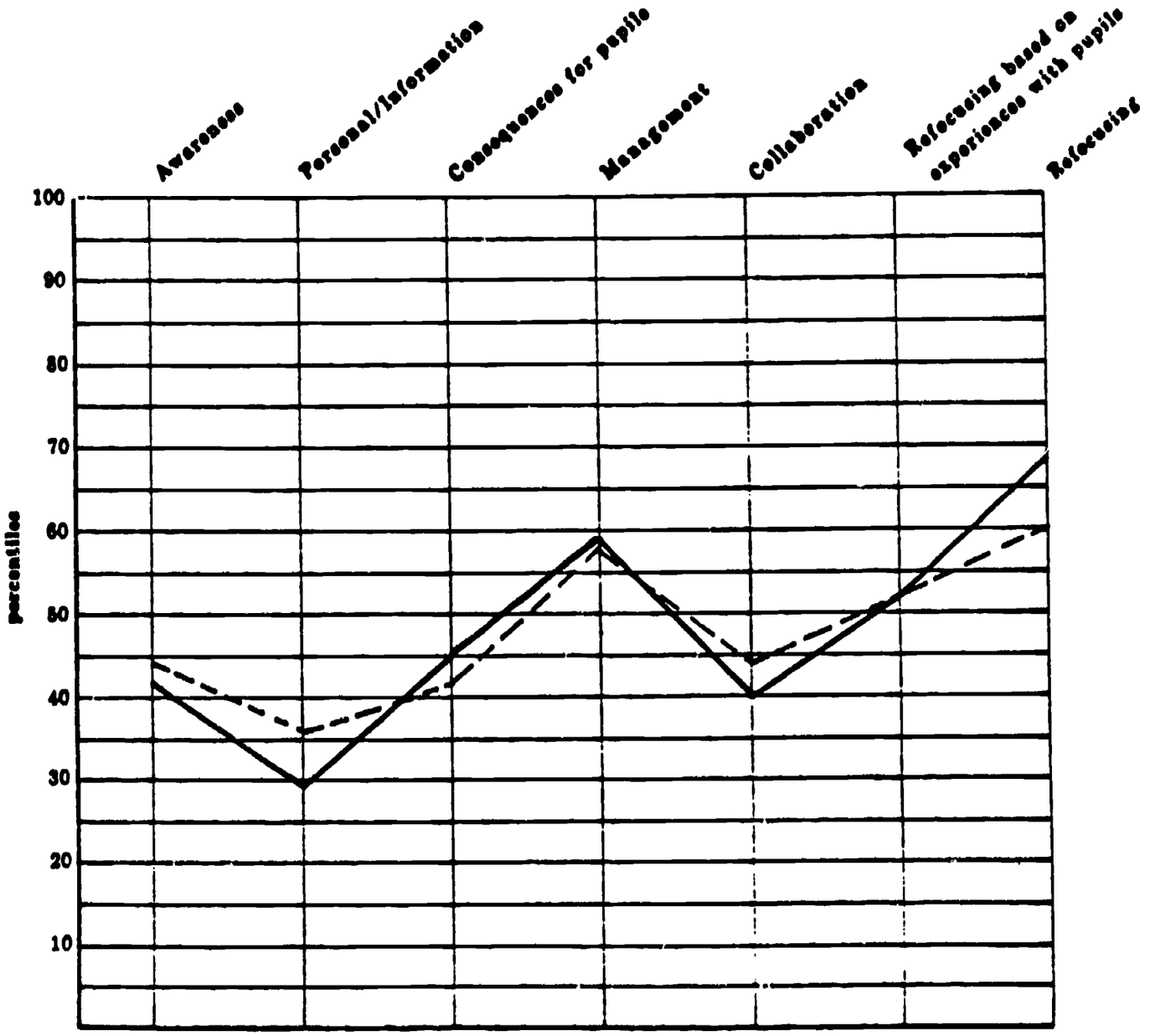


Figure 3 contains data about two generations of schools in the MAVO-project (the Netherlands). E-schools are the so called experimental schools which had already been included in the innovation-project for four years at the time of the research. The V-schools (the so called "volgscholen") on the other hand had only been in the project for two years.

Figure 3 : Stages of Concern Profile for Teachers of the MAVO-Project;
E-Schools and V-Schools

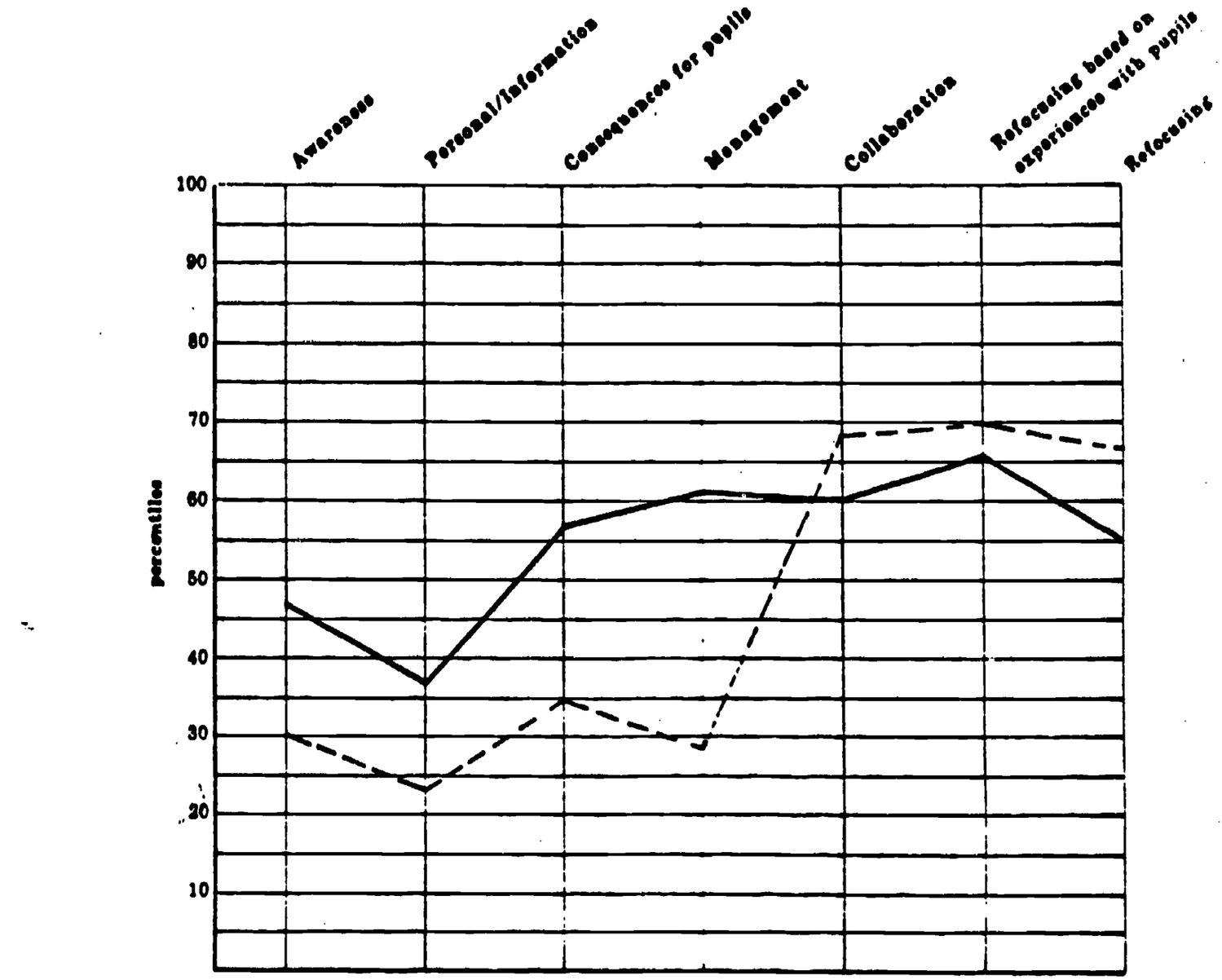


—— E-schools	42	29	45	59	40	52	68	(n = 8
---- V-schools	44	36	42	58	44	52	60	(n =13

It is obvious that the two generations of schools are not clearly distinct. For both groups of teachers it remains true that they score relatively high on "Management". Even teachers with a four year experience still have problems with the management of an innovation. Furthermore one observes that both groups also have relatively high scores in the last two stages, which can be regarded as an indication of a certain resistance. At this point we also want to remark explicitly that for a correct interpretation of such profiles other evaluative data (or descriptive data concerning the development of the project) must be added.

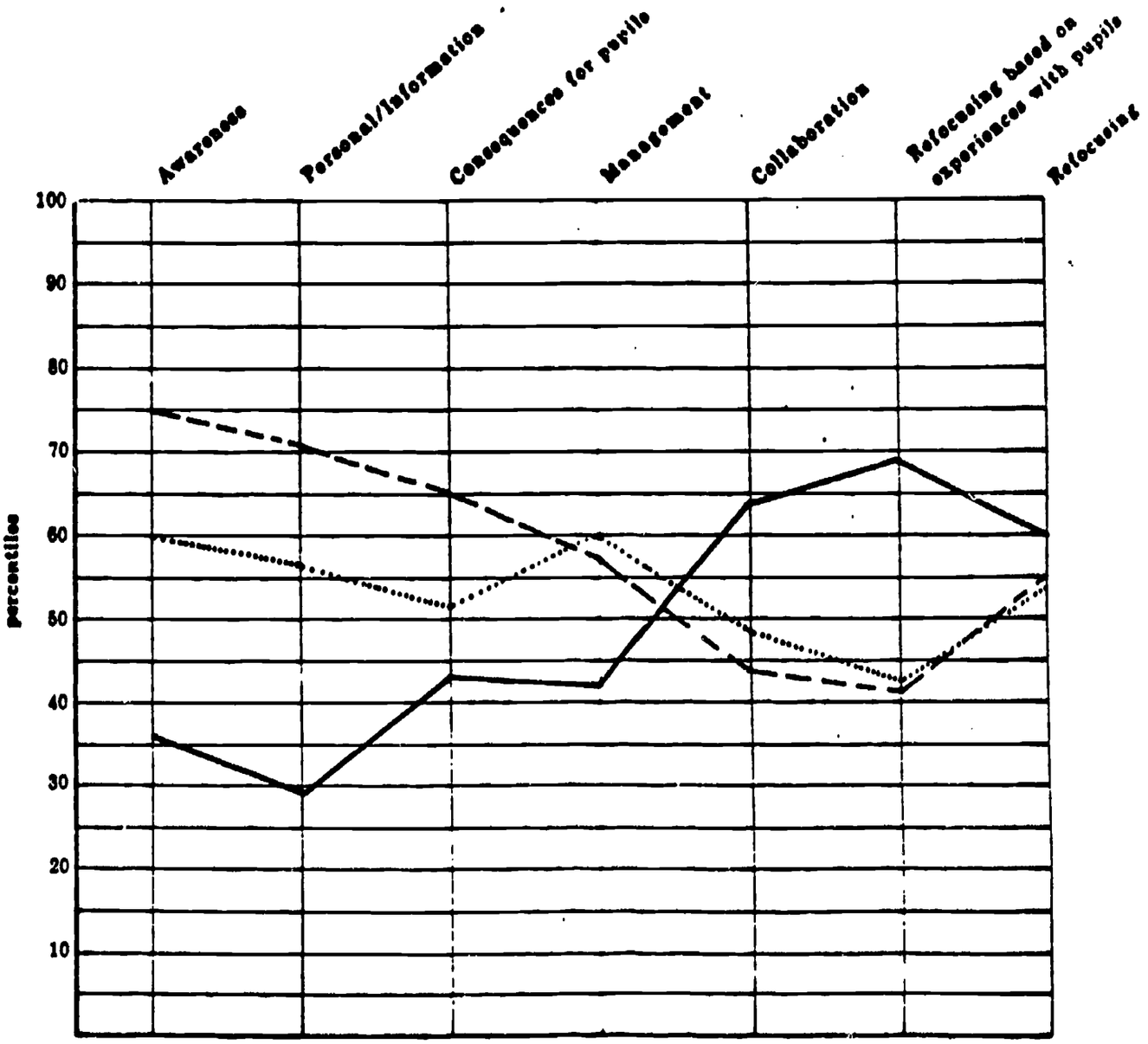
Figure 4 contains data about teachers who have participated in the project Renewed Secondary Schools (R.S.S.) (Belgium) respectively for one year and six years. From this it appears that it is possible with the adapted SoC-questionnaire to distinguish clearly two groups of teachers. It is also important to state the difference between both groups clearly coincides with the assumption concerning the hypothetical development of the concerns. More experienced teachers (six years) stand apart from less experienced teachers (one year) because of lower scores in the first four stages and higher scores in the three last ones. Consequently we consider this fact to be an important indication for the validity of the questionnaire.

Figure 4 : Stages of Concern Profiles for Teachers of the Renewed Secondary Schools



The profiles in figure 5 confirm the data of figure 4. Three groups of teachers with a different experience in R.S.S. differ considerably.

Figure 5 : Stages of Concerns Profiles for Teachers of the Renewed Secondary School, the Traditional Secondary School and the Traditional Secondary School - in preparation

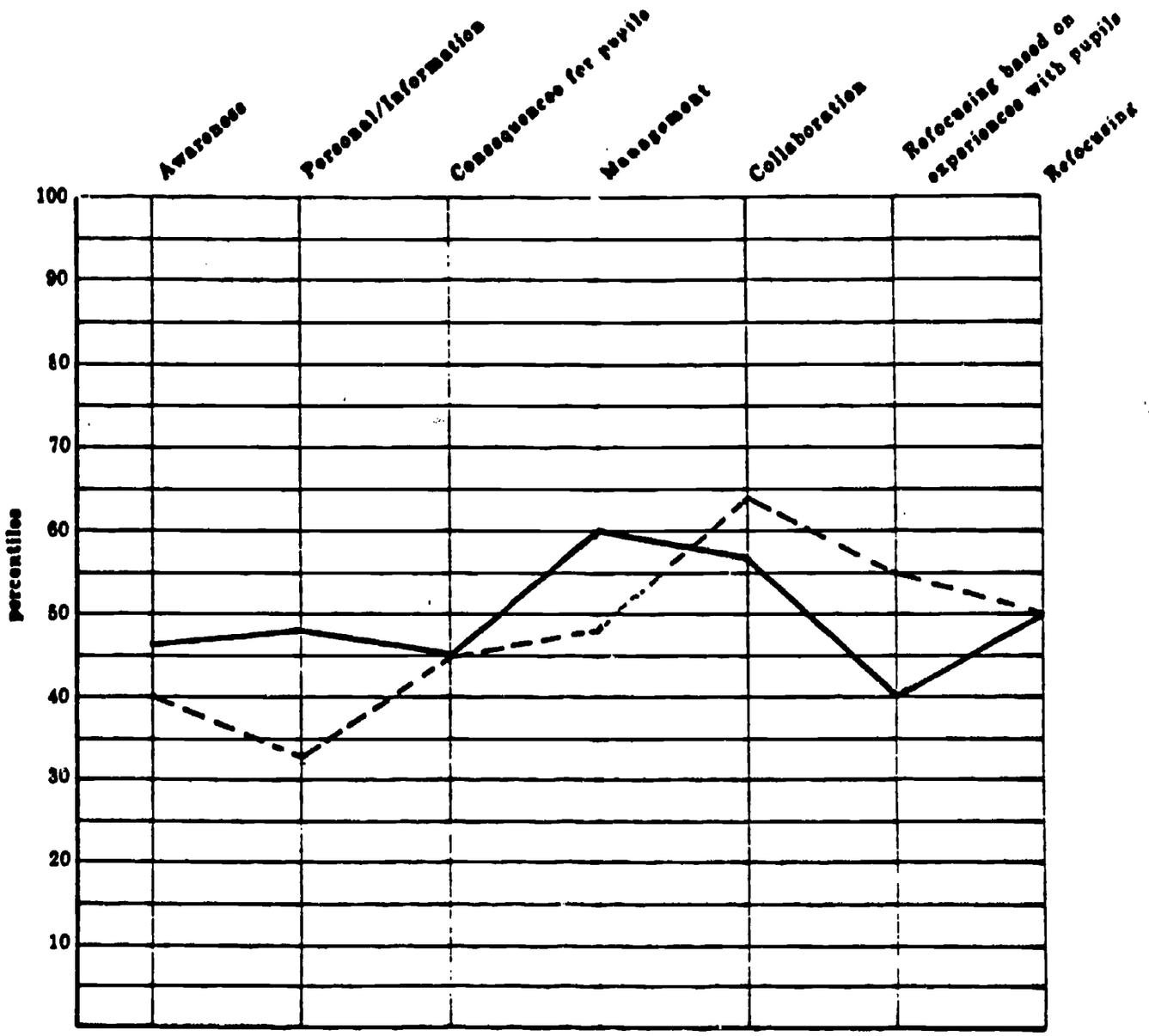


—— R.S.S.	36	29	43	-2	64	69	60 (n=300)
---- T.S.S.	75	71	65	5[illegible]	44	42	55 (n=396)
.... T.S.S. - in prep.	60	57	52	6[illegible]	48	43	54 (n=335)
			47				

4.2. Development of the concerns

From figures 4 and 5 can already be deduced that the development of the concern among teachers in large-scale projects links up with the hypothetical development as postulated by the Austin-researchers. More final data about the development of the concerns can be found in the results of a follow-up-research in which teachers answer the SoC-Q on different moments. Such follow-up-data are being collected at the moment. Below a number of profiles that refer to teachers from the R.S.S. (Belgium) are to be found. In figure 6 there is the profile of 73 teachers who answered the SoC-Q in the schoolyears '79-'80 and '80-'81. During the schoolyear '79-'80 those teachers were involved in program preparing for the R.S.S. The following schoolyear ('80-'81) was the first innovation-year for them (see appendix 2, table a for the groups means). The answering of the questionnaires occurred respectively in February 1980 (schoolyear '79-'80) and November 1980 (schoolyear '80-'81).

Figure 6 : Stages of Concerns Profiles for Teachers of the Renewed Secondary School : Febr. 1980 and Nov. 1980

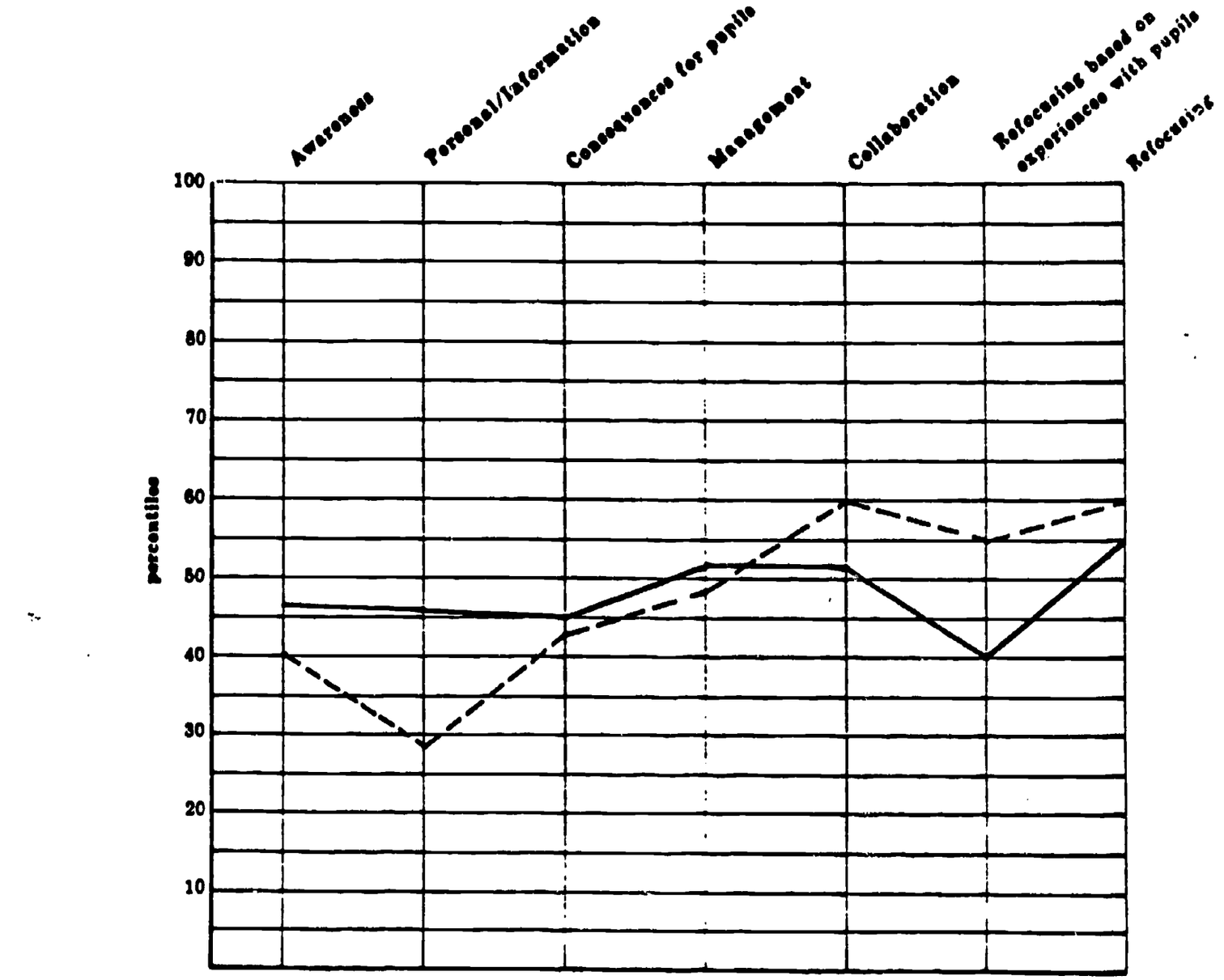


—— Febr. 1980	47	48	45	[illegible]	57	40	50 (n=73)
---- Nov. 1980	40	33	45	[illegible]	64	55	50 (n=73)

Except for the subscale "Consequences for pupils" the teachers in the preparatory stage ('79-'80) score relatively higher on the first four subscales and relatively lower on the subscales "Collaboration" and "Refocusing based on experiences with pupils". In other words : on the subscales which refer to the "self-concerns" a decrease is perceived in the first innovation-year ('80-'81), with the exception of the subscale "Consequences for pupils" where the decrease is not significant. On the subscale "Management" referring to "task-concern" we also observe a decrease. The profile on the subscales referring to other-concern increases on the contrary. On the suscale "Refocusing" the average remains stable. This evolution in the commitment affirms the hypothetical development presented by F. Fuller and later on elaborated by the researchers of the R&D Center for Teacher Education.

Figure 7 contains the profiles of 58 teachers. The first interview took place in February 1980 (schoolyear '79-'80). These teachers also prepared themselves for the R.S.S. at that moment. The second interview was in October 1981 (schoolyear '81-'82); then the teachers already were in their second innovation-year (see also table b, in appendix 2).

Figure 7 : Stages of Concerns Profiles for Teachers of the Renewed Secundary School : Febr. 1980 and Oct. 1981



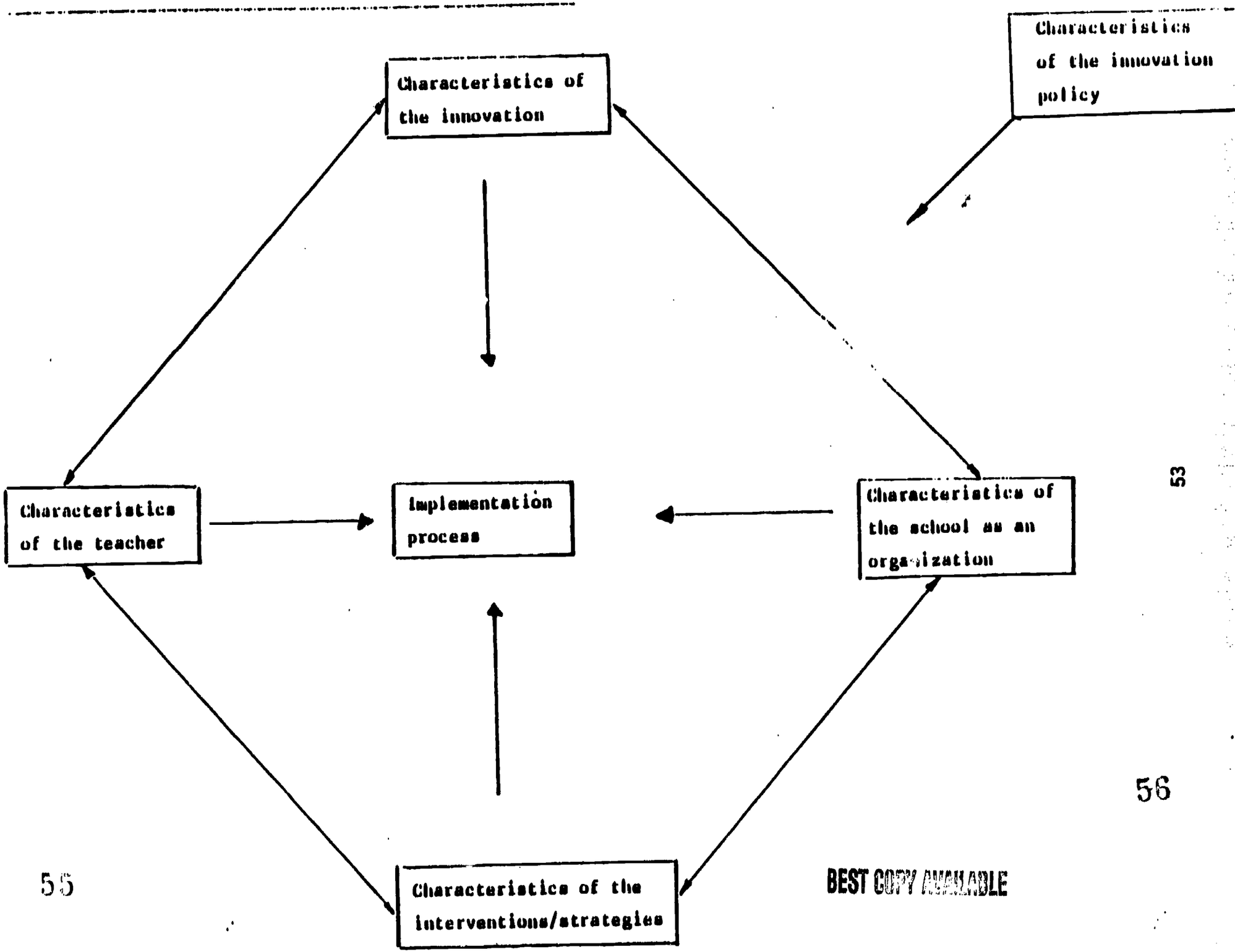
The profile of the teachers after a two year experience in the R.S.S. is characterized by a relatively low score on the subscale "Awareness", "Personal/Informational", "Consequences for pupils" and "Management" and by a relatively high score on "Collaboration", "Refocusing based on experiences with pupils" and "Refocusing". Comparing both profiles we observe an evolution coinciding with the hypothetical development. The involvement decreases on the subscales referring to the self- and taskconcerns and increases on the subscales referring to other-concern. In summary until now we have not found any counterindication for respecting the sequence in which the stages were temporarily put.

4.3. SoC-profiles as indicators

In this last paragraph we will concisely go into the research which is being carried out and to which we want to pay more attention in the near future. We have already stated earlier that we are going to make use of the CBAM-approach for the analysis and evaluation of large-scale projects. Large-scale projects are complex innovations in which a large number of schools and teachers take part. The implementation of a large-scale project is a long-term process.

At this moment we are analyzing a number of large-scale projects (pre-school-level; primary-school-level and secondary-school-level) within the following frame of references. We start from the hypothesis that the local implementation process is influenced by five categories of variables presented schematically in figure 8.

Figure 8 : Factors affecting the implementation process



This general frame of references is used as a basis for drawing up a semi-structured interview. The principal and a number of teachers are interviewed. In this manner we try to receive concrete information about the way in which certain aspects of a large-scale project are realized in a local school. Together with this interview - which in particular cases is held twice in an adapted version - the SoC-questionnaire is also presented (at different moments) as well as the LoU-interview. Thus it becomes possible to describe the development in the Concerns and the Levels of Use and perhaps to explain them by means of a number of interview-data. Below we will concretize this general research design on the basis of one particular project.

In the schoolyear '80-'81 (which starts in September '80) the Ministery of Education launched the project "Renewed Vocational Secondary School". Schools could voluntarily join it. They received extra support by way of supplementary hours for teachers (up till 24 extra hours a week) and by way of external and internal facilitation.

In effect this means that the teachers in their weekly timetable got 2 to 3 hours off to prepare the concrete elaboration of the innovation for their class. A colleague got 5 to 6 hours to take care of the co-ordination within the school. In the event of certain concrete difficulties the school could turn to an external facilitator (an experienced teacher).

The project "Renewed Vocational Secondary School" consists of different innovations. Within the framework of the ongoing investigation our attention especially goes to one innovation, that is to teaching "themes", which is a kind of an integrated curriculum. This means that for 1 or 2 weeks the training focuses on the same theme (for instance traffic). All contents and activities in a certain class refer to the same theme. In co-operation with all teachers the contents are chosen, arrangements are made concerning activities to be organized, possibilities are sought in order to set up all kinds of manual activities, etc. At the end of the themes-period the internal facilitator makes an evaluation together with the teachers.

The pupils (boys and girls) involved in the project are 13 to 14 years old, most of the time they have experienced some difficulties in Primary

School and often have little motivation for the traditional graded system. Their only concern is to get a job as soon as possible and to enter the labour-process. From discussions with teachers we know that a number of them permanently look for adjusted education for these pupils.

In some twenty schools the teachers and the schoolleaders were twice interviewed. The first time a couple of months after the start of the project; the second time in the course of the following schoolyear. Thus it was possible to gain insight into the concrete implementation process and into the most important determining factors. At the same time one could gather some indications about the development of the project in a certain school. The SoC-Questionnaire for Teachers was presented on three different occasions. The first time in connection with the first interview, the second time at the end of the first project year and the third time in connection with the second interview (that is the beginning of the second project year). At this moment the data of the third session are not yet worked up.

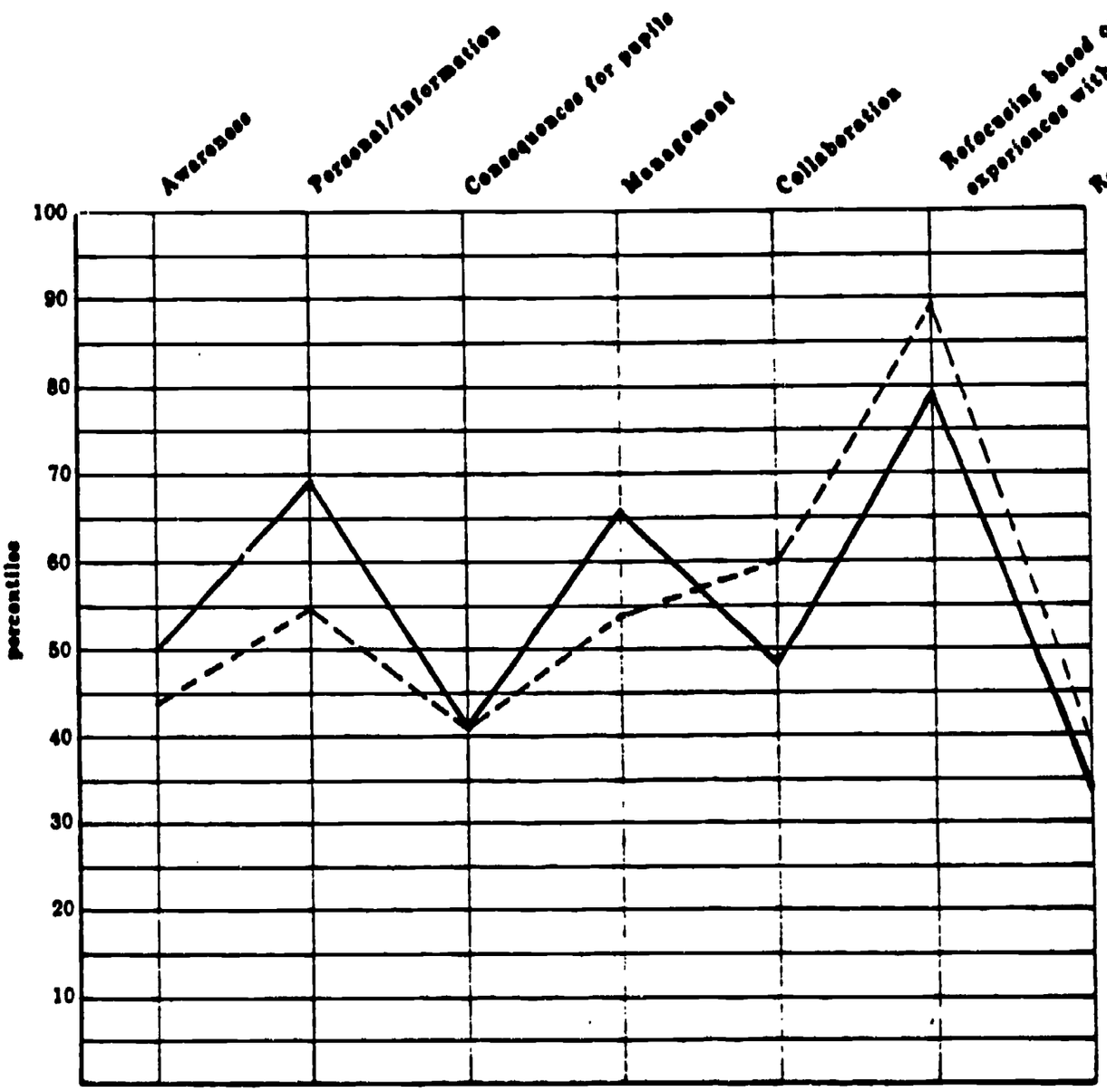
In the introduction to paragraph 4 we have already postulated that we are interested in the meaning of SoC-profiles coming from teachers involved in the implementation of a large-scale project. In other words we are looking for "typical" profiles having an indicative value for the way in which large-scale projects are realized. How large-scale projects are worked out and what factors play a role in this for this local school, can be described on the basis of the interview-data.

In the long term we hope to be able to compare some "typical" profiles and to explain them using data connected with the distinct determinants. (see figure 8). It is important to mention that in this line of thought and in the concrete analysis of the material we keep on assuming that the involvement of individual teachers in point of fact gives us an important indication about the way in which teachers experience a large-scale project.

Figure 9 contains SoC-data about 7 teachers of school 06 (beginning and end of the first project year).

Table 5 contains a survey of the involvement of the 7 teachers separately.

Figure 9 : Stages of Concern Profiles for Teachers of the Renewed Vocational Secondary School (school 06) : Dec. 1981 and June 1982



—— Dec. 1981	50	69	41	66	48	79	33 (n=7)
---- June 1982	44	55	41	54	60	89	38 (n=7)

Table 5 : Renewed Vocational Secondary School : School U6 - Sub-Questionnaire for Teachers

Teachers	November 1980							June 1981						
	Auer.	Para./Inf.	Conseq. Pupils	Manag.	Coll.	Refec. exp.ps.	Refec.	Auer.	Para./Inf.	Conseq. pupils	Manag.	Coll.	Refec. exp.ps.	Refec
U4 AU6	47 *	69	11	95	44	60	60	58	66	34	96	80	74	64
U5U6	40	37	34	41	6	48	23	7	10	45	15	12	89	18
U51U6	78	78	38	82	35	66	18	78	76	20	41	17	79	28
U52U6	25	92	38	38	64	98	23	25	92	41	41	68	97	18
U53U6	86	45	69	48	51	74	38	71	37	45	43	60	71	44
U54U6	68	85	65	86	87	89	55	25	84	48	80	78	96	31
U55U6	44	54	41	38	64	83	23	25	32	34	27	89	92	60
Group	50	69	41	66	48	79	33	44	55	41	54	60	89	38

* Percentiles.

The two profiles in figure 9 cannot be defined in terms of "user" or "non-user". In both cases - that is : as well at the start as at the end of the first year - self-, task- and other-concerns can clearly be discerned. With the second presentation of the SoC-Q the self- and task-concerns diminish; on the other hand there is a rise of the other-concerns, but especially to the concerns regarding refocusing based on experiences with pupils.

When viewing the results of the teachers separately we come to the conclusion that interindividual differences clearly appear (which disappear when the group average is represented in figure 8). Apart from that it is striking that with all teachers there is a notable similarity when the profiles of the first and the second presentations are compared. The second interview still shows a high score on the subscales on which there was also a high score the first time (data about the third interview are not worked up yet).

The core question now is whether we can clarify and explain the above data - which exclusively refer to the concerns of the individual teachers - from the available interview-data. In appendix 3 a number of important statements derived from the first interview, have been brought together. The data are ordered according to the categories of figure 8.

The group profile (figure 9) of the first interview can be traced back to the fact that three teachers (05106/05206/05406) score relatively high on "Personal/Informational" and also on "Management". The high score on "Refocusing bases on experiences with pupils" is the result of the relatively high scores of four teachers (05206/05306/05406/05506).

More important is the observation that both profiles show a similar structure. So to speak one does not perceive any clear evolution. "Personal concerns", "Management concerns" and "concerns about Refocusing based on experiences with people" remain relatively high. As for the interpretation of these group profiles and the stability in the structure, it is important to elaborate on one chief characteristic of the innovation. Teaching an integrated curriculum takes place in the school involved during well traced periods. In some schools only three themes are dealt with in the course of the schoolyear; in other schools 5 or 6 themes are treated. From the interviews it appears that first of all an extra effort is needed over again to find a suitable theme, to gather the required material, but that above all managementproblems are met within class duri

the interim periods when no themes are used. The latter especially is stressed by each teacher. This could account for the fact that teachers go on pointing out management-concerns. The relatively high scores on "Personal/Informational" can be explained from a number of interview-data which show that teachers had to start quite suddenly (without specific preparation), that they were not exactly informed about the contents of the innovation, that they kept on putting questions about their methods, that they often report initial douhts about their contribution, etc. That in those circumstances an acceptable implementation is reached all the same is most of all the result of the presence of an amount of positively influencing organizational-structural factors (see appendix 3 : The school as an organization). The high score (and the increase during the second presentation) on the subscale "refocusing based on experiences with pupils" can be understood in the light of a number of interview-data which are, however, expressed by all teachers in a very explicit way. All teachers (the board included) point to the fact that the proposed innovation is highly fit for these pupils : they are better motivated, the pupils show a great interest in the results they achieve, the number of absences during the themes-period is clearly lower than during the ordinary periods, etc. But : the question remains for all teachers whether they elaborate their education, i.e. the themes-education, on the right level, they wonder which adjustments they have to make, how they can take into account the reactions of the pupils regarding a previous theme, etc. This obvious orientation of the teachers involved towards adjusted education and their concern to highten the motivation of their pupils for the educational event explain the high score on "refocusing based on experiences with pupils".

This one example must clarify that a SoC-profile can be explained by means of additional interview-data. In this repect it was not our intention to make a causal link between a certain profile and interview-data. It was the intention, however, to develop a design through which it becomes clear, especially for facilitators, what the meaning is of some SoC-data and/or LoU-data.

Further research and analysis of already available data will have to make plain whether we can follow the course we have taken. The research design is aimed at relating a number of data - which refer to five destinct domains (see figure 8). In this way we get a broader and more differentiated insight into the complex implementation process.

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APPENDIX ! Belgian-Dutch SoC-Questionnaire : overview of the seven subscales

AWARENESS (α = .769)	Rit**	Austin-Questionnaire : stu.
I have a very limited knowledge about the innovation	.73	1
At this moment I only have a vague idea of what the innovation is about.	.78	x
I don't even know what the innovation is.	.72	0
At this time I'm not very interested in the innovation.	.59	x
At this time, I am not interested in learning about this innovation.	.53	0
I am not concerned about this innovation.	.56	0
Although I don't know about this innovation, I am concerned about things in the area.	.61	0
PERSONAL/INFORMATIONAL (α = .895)		
I would like to know what resources are available if we decide to adopt this innovation.	.77	1
I would like to know how my role will change when I am using the innovation.	.79	2
I would like to discuss the possibility of using the innovation.	.64	1
I would like to know what the use of the innovation will require in the immediate future.	.77	1
I especially need exact information about this innovation	.77	x
I would like to know how my teaching or administration is supposed to change.	.74	2
I would like to have more information on time and energy commitments required by this innovation	.71	2
I would like to know who will make the decisions in the new system.	.61	2
I would like to know the exact intention of this innovation.	.68	x
At this moment I would like to get the opportunity to examine the content of the innovation quietly.	.64	x
I would like to know what other faculty are doing in this area.	.53	3
I would like to know how colleagues, involved in the innovation feel.	.54	x

x added items

** correlation between item and the total subscale.

CONSEQUENCES FOR PUPILS (α = .801)	Rit	Austin-Questionnaire : stage
Thinking about the impact on students, I have questions about the value of the innovation.	.78	x
I am concerned about how the innovation affects students.	.74	4
I wonder if the innovation has that much influence on students' performance.	.78	x
I would like to know how this innovation is better than what we have now.	.74	
I am now concerned about the results one can obtain with students.	.70	x
MANAGEMENT (α = .876)		
It's unclear for me how to fit all the supplementary tasks, in my daily workschedule.	.82	x
I wonder if I can plan my work efficiently within the framework of the innovation.	.75	x
I'm concerned about the fact that the innovation entails more work.	.77	x
I think that those who propose the innovation expect too much of me.	.74	x
I am concerned about not having enough time to organize myself each day.	.71	3
I am concerned about time spent working with non-academic problems related to this innovation.	.70	3
Coordination of tasks and people is taking too much of my time.	.63	3
I am concerned about my inability to manage all the innovation requires.	.60	3
I am concerned about conflict between my interests and my responsibilities.	.59	3
I am completely occupied with other things.	.54	3

COLLABORATION (α = .845)	Rit	Austin-Questionnaire : stan.
I would like to cooperate with colleagues to implement the innovation	.79	x
I would like to coordinate my effort with others to maximize the innovation's effects.	.76	5
I would like to help other faculty in their use of the innovation.	.75	5
I would like to familiarize other departments or persons with the progress of this new approach.	.71	5
Using my knowledge and experience, I would like to help other colleagues who haven't started the innovation yet.	.70	x
I would like to develop working relationships with both our faculty and outside faculty using the innovation.	.68	5
I am now especially concerned about the improvement of the collaboration with my colleagues.	.58	x
At this moment I would like to discuss the possibilities of the innovation more with my colleagues.	.57	x
REFOCUSING BASED ON EXPERIENCES WITH PUPILS (α = .730)		
I would like to use feedback from students to change the program.	.77	4
I would like to modify our use of the innovation based on the experiances of our students.	.73	6
I would like to know how my students evaluate my approach of the innovation.	.68	x
I would like to excite my students about their part in this approach.	.67	4
I would like to determine how to supplement, enhance, or replace the innovation.	.62	6
REFOCUSING (α = .744)		
I know about more simple structures and instructional approaches to obtain the same results.	.73	x
I now know of some other approaches for some parts of the innovation that might work better.	.73	x
I now know of some other approaches that might work better.	.66	6
I would like to revise the innovation's instructional approach	.74	6
I would like to modify the concrete use of the innovation in our school.	.65	x

APPENDIX 2 Follow-up data

Table a : Stages of Concerns : Teachers of Renewed Secondary Schools in February 1980 and November 1980 (n = 73)

Stages	February 1980 groups mean	Pc	November 1980 groups mean	Pc	T	signif.
Awareness	1.60	47	1.30	40	3.04	0.003
Personal/ Informational	4.15	48	3.40	33	5.02	0.000
Consaq. for pupils	4.29	45	4.25	43	0.20	0.839
Management	3.28	60	2.84	48	2.74	0.008
Collaboration	4.01	57	4.29	64	- 2.00	0.050
Refoc., exp. pupils	3.48	40	4.06	55	- 3.58	0.001
Refocusing	2.22	50	2.20	50	0.16	0.870

Table b : Stages of Concerns : Teachers of Renewed Secondary Schools in February 1980 and October 1981 (n = 58)

Stages	February 1980 groups mean	Pc	October 1981 groups mean	Pc	T	signif.
Awareness	1.67	47	1.29	40	3.11	0.003
Personal/ Informational	4.08	46	3.37	28	4.71	0.000
Conseq. for pupils	4.20	45	4.10	43	0.56	0.581
Management	3.32	57	2.80	48	2.42	0.019
Collaboration	3.95	57	4.13	60	- 1.33	0.189
Refoc., exp. pupils	3.50	40	4.03	55	- 2.70	0.009
Refocusing	2.38	55	2.75	60	- 1.92	0.060

APPENDIX 3 Analysis of the first interview - School 06 -

The innovation : characteristics as perceived by teachers

1. All teachers (n=7) indicate the positive reactions of the pupils : they show more interest, are better motivated, are less absent.

2. All teachers (n=7) regard the innovation as an "adapted" innovation considering the character of the pupils and the problems they experienced in the past.

3. The innovation leads to a diversity in activities ; also activities beyond the school are possible (n=4).

4. The innovation results in improvements in the relations between pupils and teachers (n=4).

5. The innovation has as a result that we must dispose of more material (especially documentation) ; most of the time we must gather the required material ourselves. Finding the necessary material does not always proceed smoothly (n=5).

6. The change in the daily class practice is considered to be a minimum (n=3).

7. The nature of the innovation makes arrangements between teachers necessary (n=1).

8. As a teacher one can develop a theme for one class ; this is not possible, however, for all classes in which one teaches (n=1).

9. During the periods between the theme-weeks a number of problems arises : pupils are less willing to follow lessons according to the traditional pattern (n=4).

The individual teacher : evaluation, problems, concerns

1. All teachers (n=7) are convinced of the necessity of the proposed innovation.

2. One has already acquired some experience earlier with this innovation (n=3).

3. All teachers (n=7) point to initial difficulties (insufficient information; "we did not know exactly how to start"), but also to a positive development ("by starting and being engaged in it, we succeeded").

4. All teachers (n=7) think that the innovation causes much additional work.

5. All teachers (n=7) evaluate the innovation positively, considering the positive development on the side of the pupils (see 1, the innovation).

6. One keeps wondering all the time : "am I doing well ?" "is my education adjusted to the level of the pupils ?" (n=6).

The school : organizational and structural components

1. Innovation-history of the school

1.1. One teacher from the school in question is a member of a (national) workgroup for the innovation of Vocational Education.

1.2. One has already dealt with project-education in the school before. According to one teacher there has been little innovation in the school so far. All teachers (n=7) point out that it is the first time that an innovation has been implemented in the school in a systematic way.

1.3. A number of teachers (n=?) follow all kinds of in-service-training-activities regularly.

1.4. The school has contacts with other schools where other innovations are realized (n=1).

2. Innovation-willingness of the school, of the team

2.1. Among all teachers the insight is present about the necessity of innovation in Vocational Education (n=7).

2.2. All teachers (n=7) indicate a positive willingness of the teachers.

2.3. Willingness is kept lively by means of information about developments in Vocational Education via the teacher who is a member of the national workgroup (see 1.1.).

3. Co-operation in the team

3.1. The teachers involved engage in concrete co-operation during the work-meetings (see interventions : 3).

3.2. The co-operation is experienced by all teachers (n=7) as positive on the one hand, but also as necessary.

3.3. The other teachers - who do not co-operate in the theme-education - are informed now and are invited to certain activities.

3.4. All teachers claim that they have had much support from each other, especially at the beginning of the schoolyear.

4. Role of the board

4.1. The headmistress has taken the initiative, in consult with the teacher who is a member of the national workgroup (see intervention : 1).

4.2. She has approached teachers individually (see intervention : 1).

4.3. She claims that she has informed herself as well as possible.

4.4. The headmistress is present at all meerings of the teachers.

4.5. According to all teachers (n=7) she gives her support as regards content as well as moral condition.

4.6. The headmistress herself is convinced of the necessity of the innovation.

4.7. The headmistress is considered to be a great support by all teachers (n=7).

Interventions : as perceived by the teachers

1. Before the beginning of the schoolyear the headmistress approached teachers about whether or not the school would paricipate in the project ; she especially addressed these persons whom she expected to have a positive attitude towards the project (announcement by the headmistress).

2. A general introductory meeting was organized for the teachers involved in order to introduce the project. General information was presented, to which the presentation of some examples of elaborated themes was added (elaborated in other schools).

3. In the course of the schoolyear work-meetings are regularly organized at which the theme is chosen together, at which arrangements are made concerning the contents to be discussed ("in what way can I contribute from my own subject ?") and at which the implementation of the theme is evaluated.
These regularly organized work-meetings are regarded as very useful by all teachers (n=7).

4. The internal pedagogic facilitator co-ordinates the activities. All teachers (n=7) have a positive attitude towards the facilitator in question.

5. The external pedagogic facilitator has only been present at the school at the beginning of the project. Considering the positive development in the school itself, he thought his interventions superfluous.

6. No specific in-service-training-activities were organized for this innovation.

7. A teacher, member of a national workgroup of the innovation of Vocational Education, is informed about all kinds of developments and reports about them at the school. Thus there is a permanent input of information from outside.

Policy

1. The government (i.e. Ministery of Education) has put a number of hours at the disposal of each school.

2. The government suggests to appoint an internal facilitator.

3. Schools can make an appeal to an external facilitator.

4. It is the intention to test the project in a restricted number of schools for two years and to generalize it afterwards.

5. The teachers (n=7) hope that the project may continue, although this is not clear to them.

THE EFFECTIVENESS OF CONCERNS-BASED STAFF DEVELOPMENT IN FACILITATING CURRICULUM IMPLEMENTATION

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A B S T R A C T

THE EFFECTIVENESS OF CONCERNS-BASED STAFF DEVELOPMENT IN FACILITATING CURRICULUM IMPLEMENTATION.[1, 2, 3]

This paper reports year one of a three-year curriculum implementation effort, which has as its primary focus the facilitation of curriculum implementation through diagnostic-prescriptive staff development as guided by the concepts and tenets of the Concerns-Based Adoption Model. The various procedures and instruments used to assess Stages of Concern, Levels of Use and Innovation Configuration are described, as is their specific use in assessing staff development needs, the planning and delivery of relevant staff development activities, the evaluation of staff development efforts, and the assessment of the total effectiveness of the implementation effort. The curriculum implementation effort reported involves twelve Kindergarten to Grade 6 generalist teachers in an isolated Native elementary school in northern Canada. The curriculum innovation is a K-6 Provincial Science Curriculum. The primary objective of the study is to determine whether teacher Stages of Concern relative to a curriculum innovation, teacher Levels of Use of the innovation and Configuration of Use of the innovation can be predictably influenced through Concerns-Based Staff Development. Among the conclusions reported, is a finding that teacher Stages of Concern, Levels of Use of the Curriculum Innovation and Configuration of Use of the Innovation can be predictably influenced as a result of Concerns-Based Staff Development.

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[1]Special appreciation is expressed to Mr. Dave Smith, the Math/Science/Computer Consultant for the Frontier School Division, whose expertise in science education and staff development greatly affected the quality of in-service training which was planned and delivered as part of the research project.

[2]Appreciation is also expressed to the administrators and teachers of Berens River School, without whose interest, cooperation and professional attitudes this research could not have been conducted.

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INTRODUCTION

> One conclusion stands out clearly; many of the changes we have believed to be taking place in schooling have not been getting into classrooms; changes widely recommended for schools over the past fifteen years were blunted on the school and classroom door.
>
> (Goodlad and Klein, 1970: 97,

What Goodlad and Klein observed to be the blunting of change or the lack of congruence between the intended and actual outcomes of curricular innovation has been the substance of a great deal of study since 1970. A variety of studies on this problem of unintended or unexpected curricular outcomes has resulted in the isolation of at least four accountable factors:

1. The conceptualization of change an an act rather than a process. This conceptualization assumes that change is essentially non-developmental in nature and therefore, can be accomplished by edict, (Hall and Loucks, 1979: 37);

2. The inadequate attention paid to staff concerns relative to the innovation and staff development during curriculum implementation. On-going, focused, people-based support during implementation has been identified as critical to successful implementation, (Berman and Mclaughlin, 1978: Vol. 8, 34; Fullan and Pomfret, 1976: 82; Leithwood, et al., 1979: 53, Goodlad, 1975: 167, 177-184);

3. The lack of recognition of the importance and effect of the ecology of the school in implementation, (Berman and Mclaughlin, 1978: Vol. 8, 34; Fullan and Pomfret, 1976: 68-73; Leithwood, et al., 1979: 56-60; Goodlad, 1975: 45,71);

4. The lack of clarity of the nature, scope and expectations of the innovation, (Berman and Mclaughlin, 1978: Vol. 8, 34; Fullan and Pomfret, 1976: 48-51; Leithwood, et al., 1979: 56-60; Goodlad, 1975: 45-71).

Without exception, the factors identified were evidenced during the implementation phase of the various curriculum projects studied and were seen as responsible for unexpected project outcomes.

One promising response to this problem of unexpected curricular outcomes, which addresses each of the factors identified as having a significant impact upon effective implementation, is the Concerns-Based Adoption Model (C.B.A.M.). Briefly, the Concerns-Based Adoption Model is a change model developed by Hall, Wallace and Dossette (1973) of the Research and Development Center for Teacher Education of the University of Texas at Austin, to represent the complex process entailed when educational institutions and individuals in them become involved in implementing innovations. The C.B.A.M. is a theoretical framework which links the activities of three subsystems—a resource system, a user system, and a facilitator system—in the diagnosis of user concerns about an innovation, typical behaviours of individuals involved in change, and an accurate description of the innovation being implemented. This diagnosis of user concerns, user behaviour, and the characteristics of the innovation provides the basis for the design of targeted or focused staff development as the means of facilitating curriculum implementation by reducing slippage.

This paper reports year one of a three-year curriculum implementation effort which has as its primary focus the facilitation of curriculum implementation through diagnostic-prescriptive staff development as guided by

the concepts and tenets of the Concerns-Based Adoption Model. Firstly, the Concerns-Based Adoption Model is presented and explained as are the procedures and instruments which are associated with the model. Secondly, a specific curriculum implementation project involving the implementation of the Manitoba Provincial K-6 Science Curriculum in Berens River School is described. Finally, the findings and conclusions drawn from the project are examined in terms of the usefulness of the C.B.A.M. in assessing staff development needs, planning and delivering staff development activities, evaluating staff development efforts and assessing the effectiveness of curriculum implementation efforts.

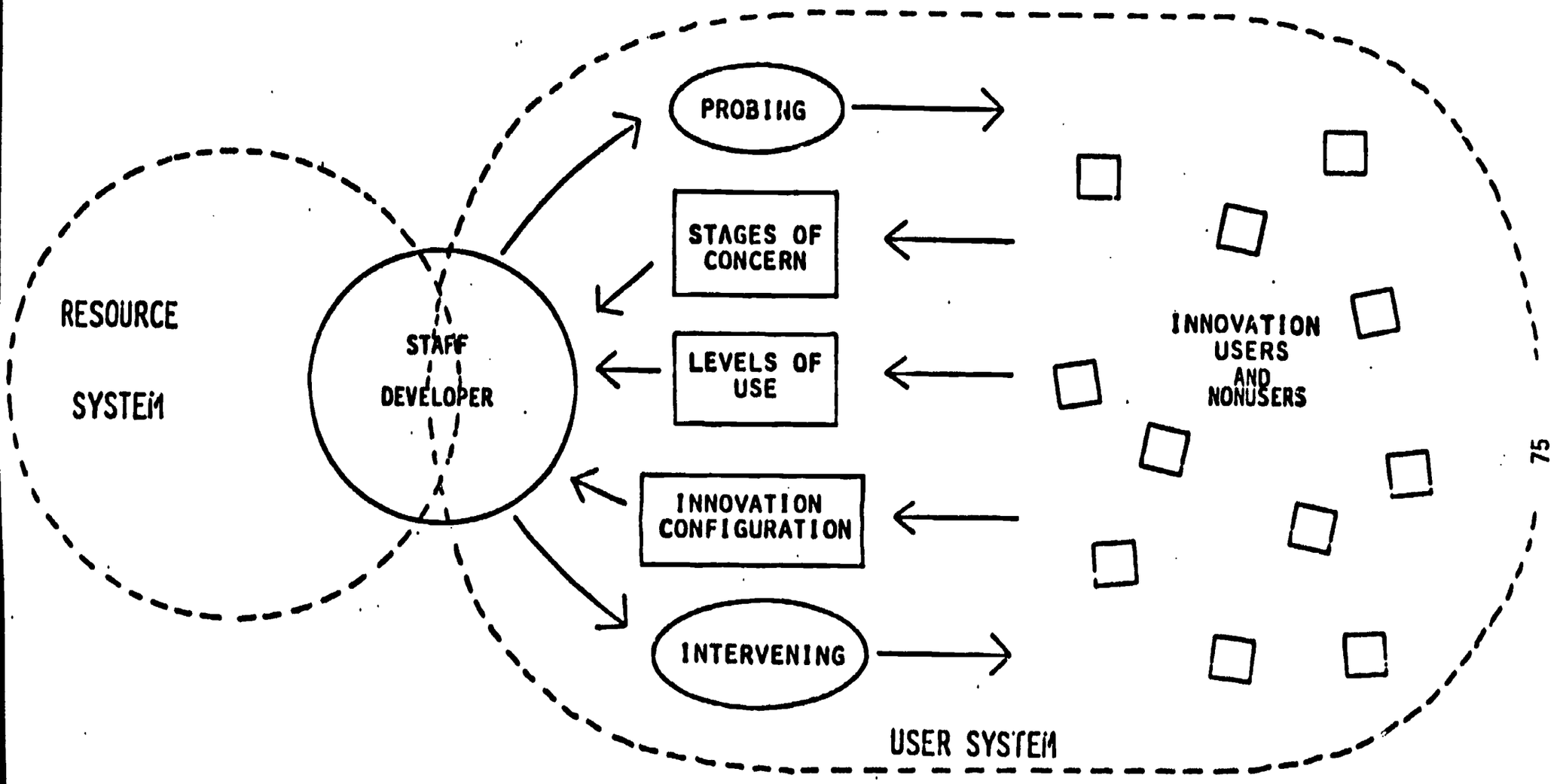
A DESCRIPTIVE OVERVIEW OF THE CONCERNS-BASED ADOPTION MODEL

Introduction

As mentioned, the Concerns-Based Adoption Model constitutes one practical response to the problem of slippage during curriculum implementation. The Concerns-Based Adoption Model was developed to represent the complex process entailed when educational institutions and the individuals in them become involved in implementing innovation, (Hall, Wallace and Dossett, 1973).

The Concerns-Based Adoption Model (Figure 1) consists of three systems: a User System, a Resource System and a Change Facilitator/Staff Developer System (Hall, Wallace and Dossett, 1973: 4). The User System is characterized by specific behaviours and attitudes relative to a particular innovation. These specific behaviours and attitudes are reflected in the Levels of Use (L.o.U.) of the Innovation and Stages of Concern (S.o.C.) about the innovation respectively. The various forms the innovation has taken within the

Figure 1: THE CONCERNS-BASED ADOPTION MODEL



CBAM Project
Research and Development Center for Teacher Education
The University of Texas at Austin

User System as a result of user adaptation of the innovation to local circumstances is described in terms of Innovation Configuration (I.C). The change facilitator/staff developer's role is to probe the User System to determine and monitor user and innovation characteristics, then link the User System with a Resource System via planned intervention. The probing functions are constituted of the measurement of the L.o.U. and S.o.C. of the User System and the determination of the Innovation Configuration(s) or variations of the innovations in use within the User System. The intervention function is constituted of staff development activities targeted by the S.o.C., L.o.U. and Innovation Configuration information.

It should be noted that all dimensions and various interactions in Figure 1 are meant to acknowledge that change is a process and that facilitating change entails continuous and systemic interactions (Heck, et al., 1981: 8).

Assumptive Basis of C.B.A.M.

There are several assumptions which underlie the C.B.A.M. as overviewed. They are:

1. Change is a process occuring over time that is achieved incrementally and developmentally. It is not an event occurring at a single point in time. (Heck and Goldstein, 1980: 10)

2. The change process is not an undifferentiated continuum. Individuals involved in change go through stages in their perceptions, and feelings about the innovation, as well as their skill and sophistication in using the innovation. (Hall and Loucks, 1979: 38)

3. Change is a highly personal experience. The personal dimension of change is often more critical to the success or failure of the change process than either the organizational or technological dimensions. (Heck and Goldstein, 1980: 10) Since change is brought about by individuals, their personal satisfactions, frustrations, concerns, motivations and perceptions generally all play a part in determining the success or failure of a change initiative. (Hall, 1978: 4)

4. The individual is the focal point in the change process. Other approaches to change, (eg., organizational development) view the composite institution as the primary unit of intervention, and place their emphasis upon improving communication, and other organizational norms and behaviours. C.B.A.M., however, emphasizes working with individual teachers and administrators in relation to their roles in the innovation process. C.B.A.M. rests on the conviction that institutions cannot change until the individuals within them change. (Hall and Loucks, 1979: 38)

5. It is possible to acquire reliable and valid information about individual behaviours and concerns relative to an innovation. (Heck and Goldstein, 1980: 10)

6. It is possible to facilitate the change process by means of interventions targeted to the concerns and behaviours of individuals involved in the process. (Heck and Goldstein, 1980: 10)

7. The Change (innovation) is appropriate. Not all innovations are positive; an innovation that might be positive in one context may have a negative consequence in another context. Underlying the C.B.A.M. is the assumption that in a particular context the innovation that is being introduced is one that is judged to be positive and have potential for positive outcomes with the users and their clients. (Bents and Howey, 1981: 31)

8. The Staff developers and other change facilitators need to work in an adaptive yet systemic way. They need to stay in constant touch with the progress of individuals within the larger context of the total organization that is supporting the change. (Hall and Loucks, 1979: 39)

9. Inservice teacher training (Staff Development) can be best facilitated for the individual by use of a client-centered diagnostic/prescriptive model. To deliver relevant and supportive inservice teacher training, change facilitators need to diagnose where their clients are in the change process and target their interventions toward the diagnosed needs. (Hall, 1978: 4)

10. Full description of the intervention in operation is a key variable. All too often it appears that innovation developers have not clearly or fully developed operational definitions of their innovations ... There must be a full description of what the innovation entails when it is fully in use. (Hall, 1978: 4)

Some practical implications of these assumptions are obvious. Implementation efforts must be gradual, long term endeavors which focus firstly upon the people involved in the effort. The innovation itself must be clearly articulated and the people-based support provided as a part of the implementation process must be meaningful and planned in terms of addressing the changing, yet developmental, affective and behavioural reactions of individuals to the innovation. This people-based support must take place in the context of the organization supporting the change and by nature of its diagnostic/prescriptive nature can be easily evaluated.

Stages of Concern About The Innovation

Stages of Concern, the affective dimension of the C.B.A.M., has been characterized in a seven stage developmental hierarchy (Figure 2) ranging from Unrelated Concerns (Stage 0) to Self Concerns (Stages 1 & 2) to Task Concerns (Stage 3) to Impact Concerns (Stages 4, 5 & 6). An individual normally does not have concerns relative to an innovation at just one stage. Although the concerns are spread across the stages, an individual usually does have a higher concentration of concerns at a particular stage as a function of familiarity and proficiency with the innovation. Using the S.o.C. Profile Graph (Hall, George, Rutherford, 1979), a profile of user concerns can be constructed to show clusters of concerns for the user system as a group.

The hypothesis that user stages of concern change in a developmental progression as users become more familiar with and skilled in using the innovation has been verified. (Loucks, 1980; Hall, 1977; Hall and George, undated) The instruments used to measure user Stages of Concern, the

Figure 2

STAGES OF CONCERN ABOUT THE INNOVATION*

Unrelated

0 *AWARENESS:* Little concern about or involvement with the innovation is indicated.

Self

1 *INFORMATIONAL:* A general awareness of the innovation and interest in learning more detail about it is indicated. The person seems to be unworried about himself/herself in relation to the innovation. She/he is interested in substantive aspects of the innovation in a selfless manner such as general characteristics, effects, and requirements for use.

2 *PERSONAL:* Individual is uncertain about the demands of the innovation, his/her inadequacy to meet those demands, and his/her role with the innovation. This includes analysis of his/her role in relation to the reward structure of the organization, decision making and consideration of potential conflicts with existing structures or personal commitment. Financial or status implications of the program for self and colleagues may also be reflected.

Task

3 *MANAGEMENT:* Attention is focused on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organizing, managing, scheduling, and time demands are utmost.

Impact

4 *CONSEQUENCE:* Attention focuses on impact of the innovation on students in his/her immediate sphere of influence. The focus is on relevance of the innovation for students, evaluation of student outcomes, including performance and competencies, and changes needed to increase student outcomes.

5 *COLLABORATION:* The focus is on coordination and cooperation with others regarding use of the innovation.

6 *REFOCUSING:* The focus is on exploration of more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative. Individual has definite ideas about alternatives to the proposed or existing form of the innovation.

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*Original concept from Hall, G. E., Wallace, R. C., Jr., & Dossett, W. A. A developmental conceptualization of the adoption process within educational institutions. Austin: Research and Development Center for Teacher Education, The University of Texas, 1973.

Stages of Concern Questionnaire (S.o.C.Q.) (Hall, George, Rutherford, 1979) and the Open Ended Statement of Concern (Newlove and Hall, 1976: 17-21) have been validated and found reliable (Hall, George, Rutherford, 1979; George, 1977; Hall and George, undated).

Having reliably assessed the Stages of Concern of the user system and constructed individual and/or group concerns profiles it is possible to focus or target staff development interventions to the affective needs that users have relative to the innovation.

Levels of Use of the Innovation

The Levels of Use dimension of the C.B.A.M. focuses upon describing the behaviours of the user system. L.o.U. is a measure of various states of user behaviour in relation to the innovation. Eight Levels of Use (Figure 3) have been proposed and verified (Loucks 1976; Hall 1977; Loucks 1980; Rutherford and George 1978). A user progresses through the Levels of Use as familiarity and expertise with the innovation develops. Rutherford and George (1978) confirmed that a relationship existed between L.o.U. and S.o.C.; ie., a change in Levels of Use is anticipated by a change in Stages of Concern.

In order to organize, in a manageable fashion, the behaviours that may be exhibited at each Level of Use, a framework of indices or categories and decision points has been developed. The Level of Use Chart (Figure 4) in addition to defining eight Levels of Use further refines each level into seven categories. These categories represent the key functions that users carry out when using the innovation. There are specific decision points which distinguish each level of use. These decision points are also

Figure 3

Levels of Use of the Innovation

0 NONUSE: State in which the user has little or no knowledge of the innovation, no involvement with the innovation, and is doing nothing toward becoming involved.

I ORIENTATION: State in which the user has recently acquired or is acquiring information about the innovation and/or has recently explored or is exploring its value orientation and its demands upon user and user system.

II PREPARATION: State in which the user is preparing for first use of the innovation.

III MECHANICAL USE: State in which the user focuses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet user needs than client needs. The user is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use.

IVA ROUTINE: State in which use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences.

IVB REFINEMENT: State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short- and long-term consequences for clients.

V INTEGRATION: State in which the user is combining own efforts to use the innovation with related activities of colleagues to achieve a collective impact on clients within their common sphere of influence.

VI RENEWAL: State in which the user reevaluates the quality of use of the innovation, seeks major modifications of or alternatives to present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self and the system.

Excerpted from: The LoU Chart: Operational definitions of Levels of Use of the Innovation. Austin: Research and Development Center for Teacher Education, The University of Texas, 1975.

FIGURE 4—LoU CHART

LEVELS OF USE SCALE POINT DEFINITIONS OF THE LEVELS OF USE OF THE INNOVATION Levels of Use are distinct states that represent observably different types of behavior and patterns of innovation use as exhibited by individuals and groups. These levels characterize a user's development in acquiring new skills and varying use of the innovation. Each level encompasses a range of behaviors, but is limited by a set of identifiable Decision Points. For descriptive purposes, each level is defined by seven categories.	CATEGORIES KNOWLEDGE That which the user knows about characteristics of the innovation, how to use it, and consequences of its use. This is cognitive knowledge related to using the innovation, not feelings or attitudes.	ACQUIRING INFORMATION Solicits information about the innovation in a variety of ways, including questioning resource persons, corresponding with resource agencies, reviewing printed materials, and making visits.	SHARING Discusses the innovation with others. Shares plans, ideas, resources, outcomes, and problems related to use of the innovation.
LEVEL 0 NON-USE State in which the user has little or no knowledge of the innovation, no involvement with the innovation, and is doing nothing toward becoming involved	Knows nothing about this or similar innovations or has only very limited general knowledge of efforts to develop innovations in the area	Takes little or no action to solicit information beyond learning more about this or a similar innovation when it happens to come to personal attention	Is not communicating with others about the innovation beyond possibly acknowledging that the innovation exists
DECISION POINT A	*Takes action to learn more detailed information about the innovation.*		
LEVEL I ORIENTATION State in which the user has acquired or is acquiring information about the innovation and/or has explored or is exploring its value orientation and its demands upon user and user system	Knows general information about the innovation such as origin characteristics, and implementation requirements.	Seeks descriptive material about the innovation. Seeks opinions and knowledge of others through discussions, visits, or workshops.	Discusses the innovation in general terms and/or exchanges tentative information, materials or ideas about the innovation and possible implications of its use.
DECISION POINT B	*Makes a decision to use the innovation by establishing a time to begin*		
LEVEL II PREPARATION State in which the user is preparing for first use of the innovation	Knows logistical requirements, necessary resources and timing for initial use of the innovation, and details of initial experiences for clients	Seeks information and resources specifically related to preparation for use of the innovation in own setting.	Discusses resources needed for initial use of the innovation, aims others in pre-use training, and in arranging for resources, logistics, schedules, etc. in preparation for first use
DECISION POINT C	*Begins first use of the innovation*		
LEVEL III MECHANICAL USE State in which the user focuses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet user needs than client needs. The user is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use	Knows on a day-to-day basis the requirements for using the innovation is more knowledgeable on short-term activities and effects than long-range activities and effects of use of the innovation.	Solicits management information about such things as logistics, scheduling techniques, and ideas for reducing amount of time and work required of user.	Discusses management and logistical issues related to use of the innovation. Resources and materials are shared for purposes of reducing management, flow, and logistical problems related to use of the innovation.
DECISION POINT D-1	*A routine pattern of use is established*		
LEVEL IV A ROUTINE Use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences	Knows both short- and long-term requirements for use and how to use the innovation with minimum effort or stress	Makes no special efforts to seek information as a part of ongoing use of the innovation	Describes current use of the innovation with little or no reference to ways of changing use.
DECISION POINT D-2	*Changes use of the innovation based on formal or informal evaluation in order to increase client outcomes*		
LEVEL IV B REFINEMENT State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short- and long-term consequences for clients	Knows cognitive and effective effects of the innovation on clients and ways for increasing impact on clients	Solicits information and materials that focus specifically on changing use of the innovation to affect client outcomes	Discusses own methods of modifying use of the innovation to change client outcomes.
DECISION POINT E	*Initiates changes in use of innovation based on input of and in coordination with what colleagues are doing.*		
LEVEL V INTEGRATION State in which the user is combining own efforts to use the innovation with related activities of colleagues to achieve a collective impact on clients within their common sphere of influence	Knows how to coordinate own use of the innovation with colleagues to provide a collective impact on clients.	Solicits information and opinions for the purpose of collaborating with others in use of the innovation	Discusses efforts to increase client impact through collaboration with others on personal use of the innovation
DECISION POINT F	*Begins exploring alternatives to or major modifications of the innovation presently in use.*		
LEVEL VI RENEWAL State in which the user re-evaluates the quality of use of the innovation, seeks major modifications of or alternatives to present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self and the system	Knows of alternatives that could be used to change or replace the present innovation that would improve the quality of outcomes of its use.	Seeks information and materials about other innovations as alternatives to the present innovation or for making major adaptations in the innovation.	Focuses discussions on identification of major alternatives or replacements for the current innovation.

Procedures for Adopting Educational Innovations Project, Research and Development Center for Teacher Education, University of Texas at Austin, 1975. N.I.E. Contract No. NIE-C-74-0087.

FIGURE 4—LoU CHART

CATEGORIES

ASSESSING	PLANNING	STATUS REPORTING	PERFORMING
Examines the potential or actual use of the innovation or some aspect of it. This can be a mental assessment or can involve actual collection and analysis of data.	Designs and outlines short- and/or long-range steps to be taken during process of innovation adoption, i.e., aligns resources, schedules activities, meets with others to organize and/or coordinate use of the innovation.	Describes personal stand at the present time in relation to use of the innovation.	Carries out the actions and activities entailed in operationalizing the innovation.
Takes no action to analyze the innovation its characteristics, possible use, or consequences of use.	Schedules no time and specifies no steps for the study or use of the innovation.	Reports little or no personal involvement with the innovation.	Takes no discernible action toward learning about or using the innovation. The innovation and/or its accouterments are not present or in use
Analyzes and compares materials content requirements for use evaluation reports potential outcomes strengths and weaknesses for purpose of making a decision about use of the innovation.	Plans to gather necessary information and resources as needed to make a decision for or against use of the innovation	Reports presently orienting self to what the innovation is and is not.	Explores the innovation and requirements for its use by talking to others about it, reviewing descriptive information and sample materials, attending orientation sessions, and observing others using it
Analyzes detailed requirements and available resources for initial use of the innovation	Identifies steps and procedures entailed in obtaining resources and organizing activities and events for initial use of the innovation.	Reports preparing self for initial use of the innovation.	Studies reference materials in depth, organizes resources and logistics, schedules and receives skill training in preparation for initial use
Examines own use of the innovation with respect to problems of logistics, management time schedules resources and general reactions of clients.	Plans for organizing and managing resources activities and events related primarily to immediate ongoing use of the innovation. Planned for changes address managerial or logistical issues with a short-term perspective.	Reports that logistics time, management resource organization, etc. are the focus of most personal efforts to use the innovation.	Manages innovation with varying degrees of efficiency. Often lacks anticipation of immediate consequences. The flow of actions in the use and clients is often disjointed unsure and uncertain. When changes are made they are primarily in response to logistical and organizational problems.
Limits evaluation activities to those administratively required with little attention paid to findings for the purpose of changing use.	Plans intermediate and long-range actions with little projected variation in how the innovation will be used. Planning focuses on routine use of resources personnel, etc.	Reports that personal use of the innovation is going along satisfactorily with few if any problems.	Uses the innovation smoothly with minimal management direction; over time, there is little variation in pattern of use.
Assesses use of the innovation for the purpose of changing current practices to improve client outcomes	Develops intermediate and long-range plans that anticipate possible and needed steps resources, and events designed to enhance client outcomes.	Reports varying use of the innovation in order to change client outcomes.	Explores and experiments with alternative combinations of the innovation with existing practices to maximize client involvement and to optimize client outcomes.
Appraises collaborative use of the innovation in terms of client outcomes and strengths and weaknesses of the integrated effort.	Plans specific actions to coordinate own use of the innovation with others to achieve increased impact on clients.	Reports spending time and energy collaborating with others about integrating own use of the innovation.	Collaborates with others in use of the innovation as a means for expanding the innovation's impact on clients. Changes in use are made in coordination with others.
Analyzes advantages and disadvantages of major modifications or alternatives to the present innovation.	Plans activities that involve pursuit of alternatives to enhance or replace the innovation.	Reports considering major modifications of or alternatives to present use of the innovation.	Explores other innovations that could be used in combination with or in place of the present innovation in an attempt to develop more effective means of achieving client outcomes.

identified on the L.o.U. Chart. An overall L.o.U. is assigned to an individual based on the individual's passage of these decision points. It should be noted that individuals may exhibit certain behaviours which are of different levels in different categories. As an example, an individual may have crossed decision point B and be assigned an overall L.o.U. II by establishing a specific date to begin use of the innovation, yet exhibit behaviours in the categories which are typically level 0 or level 1. Generally, individual behaviours within each category are clustered around the overall L.o.U.

Having assessed user system L.o.U., interventions may be focused or targeted to the requirements of individuals at particular levels. It should be noted that L.o.U. unlike the S.o.C. does not change rapidly. Although a change in concern may be indicative of a change in L.o.U. a time cannot be specified for this change.

The method of assessing the L.o.U. is the focused L.o.U. interview (Loucks, Newlove and Hall, 1975: 24-27). The results of the L.o.U. interview are recorded by the researcher on a L.o.U. Rating Sheet (Loucks, Newlove and Hall, 1975: 42). The L.o.U. interview has been validated and found reliable (Loucks 1976: 5; Fullan and Pomfret 1976: 30).

Innovation Descriptive and Innovation Configuration

Neither S.o.C. nor L.o.U. assists in the specification of the "what" of the innovation. Implementation studies have revealed that the operational characteristics of any given curriculum innovation vary from classroom to classroom.

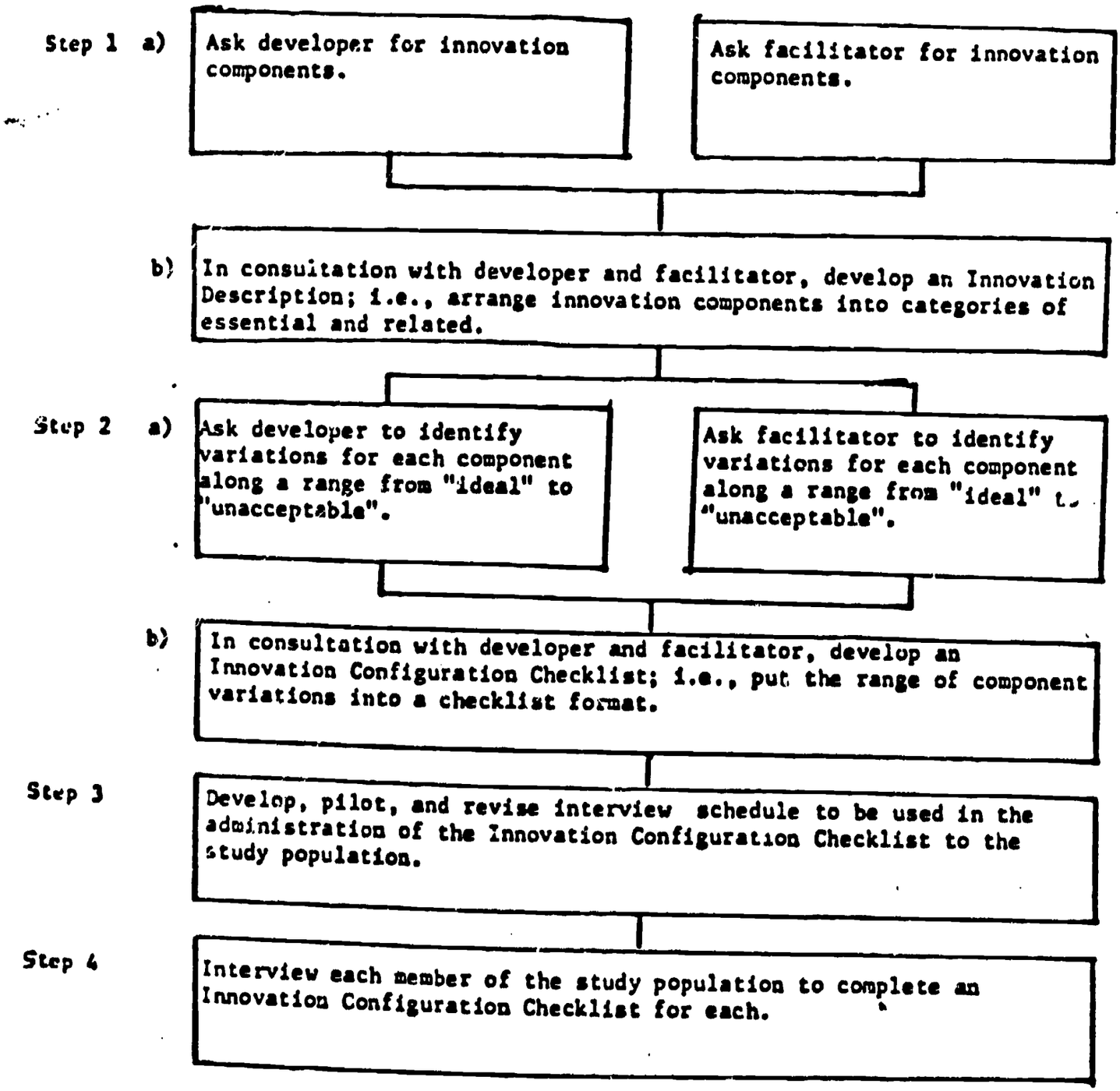
Field research with the C.B.A.M. (Hall and Loucks, 1978) conducted by the Research and Development Center for Teacher Education in Austin, identified the need to define minimum criteria for use in the form of an innovation description in order to determine whether members within a user system were indeed users of the same innovation. It became obvious that a range of acceptable operational forms of the innovation was required to accommodate the adaptive and heuristic nature of change. This range of variations emerged in the form of an Innovation Configuration Checklist The Checklist is used to identify the adaptations that an innovation undergoes during implementation in a given situation. The Checklist is completed for each individual in the user system during a focused Innovation Configuration Interview.

Normally, the Innovation Description and the Innovation Configuration Checklist are developed in a five-step process (Heck, et al., 1981: 26-34) and may be constructed with either prescription or description of an innovation in mind. For the purposes of this study, a modified four-step procedure (Figure 5) was employed to identify the Innovation Configuration: Manitoba Provincial K-6 Science Curriculum (App. A), and the Innovation Configuration Checklist: Manitoba Provincial K-6 Science Curriculum (App. B).

Having used the Innovation Configuration Checklist during a focused interview to identify the various forms or configurations an innovation has taken within the user system, staff development interventions into the user system may be focused by the requirements of individuals or groups of individuals using particular configurations of the innovation.

Figure 5

A Procedure for Identifying Innovation Descriptions and Innovation Configurations.



Summary

The Concerns-Based Adoption Model is comprised of the basic concepts of Stages of Concern, Levels of Use and Innovation Configuration. The Stages of Concern about an innovation is the developmental hierarchy of concerns in seven stages which describes the kinds of concerns the individual may experience over time in relation to an innovation. The Levels of Use of an innovation is an eight level developmental hierarchy of behaviours which describes the type of behaviours individuals exhibit over time in relation to the innovation. The Innovation Configuration is the operational pattern of the innovation that results from user selection and use of different innovation component variations. The Innovation Configuration is a description of the various adaptations the innovation has made within the user system.

Interventions into the user system; ie., the linking of the user system with a resource system, may be designed in response to the needs of individuals within the user system diagnosed in terms of their concerns about the innovation, their usage of the innovation and the various adaptations or configurations they have given to the innovation.

THE MANITOBA K-6 PROVINCIAL SCIENCE CURRICULUM IMPLEMENTATION PROJECT IN BERENS RIVER SCHOOL

The Research Question

Generally, the purpose of this study was to field test aspects of the Concerns-Based Adoption Model in a Manitoba School. More specifically, the study involved the implementation of the Manitoba Provincial K-6 Science Curriculum in Berens River School of the Frontier School Division and was

concerned with the design and execution of staff development intervention in support of the implementation. The major questions for investigation were:

1. Will staff development focused by Stages of Concern, Levels of Use and Innovation Configuration data predictably affect User Stages of Concern, Levels Of Use and Innovation Configuration?

2. Can the Concerns-Based Adoption Model be used to evaluate the effectiveness of the curriculum implementation?

3. Can the Concerns-Based Adoption Model be used to evaluate staff development efforts in support of curriculum implementation?

The Setting of the Study

The study was conducted at Berens River School in Berens River, Manitoba. Berens River School is in Administrative Area III of the Frontier School Division No. 48. The study population consisted of twelve K-6 Science teachers. The student population was Native Canadian with Saulteaux as a first language and English as a second language. The student population was approximately 285 at the Kindergarten to Grade 6 Levels.

The Innovation

Science instruction had been identified by the principal and staff as a "weakness". It was unknown at the beginning of the study by either the principal or staff what variety of science programs existed in the school. The principal and staff expressed a desire to put science instruction "in order" in accordance with the Manitoba Provincial K-6 Science Curriculum Guidelines. The innovation for implementation became the Manitoba Provincial K-6 Science Curriculum.

Methodology/Procedure

The study time/task line (Figure 6) outlines the specific steps taken during the project. As previously indicated, all procedures and instruments used in the collection of Stages of Concern, Levels of Use, and Innovation Configuration data were prescribed by the C.B.A.M. project of the Research and Development Center for Teacher Education at the University of Texas at Austin.

The project had a pre/post design in which teacher concerns relative to the Curriculum were measured twice before staff development and twice after staff development; whereas, the Innovation Configuration and the Levels of Use of the curriculum were measured once before staff development and once after staff development. The pre/post design was set up in such a way so as to allow for the measurement of the changes in teacher concerns as a function of time as well as a function of staff development.

The project was initiated in October, 1981, as a result of discussions with the Superintendent, Principal and Staff. In November and December, 1981, an operational description of the essential nature of the Manitoba Provincial K-6 Science Curriculum was developed. This operational description took the forms of the Innovation Description: Manitoba Provincial K-6 Science Curriculum (App. A), which would form the basis of the Levels of Use Interview to be conducted with each science teacher and the Innovation Configuration Checklist: Manitoba Provincial K-6 Science Curriculum (App. B) which would be administered and completed for each science teacher in the study during a separately scheduled interview focused by a researcher prepared interview schedule (App. C).

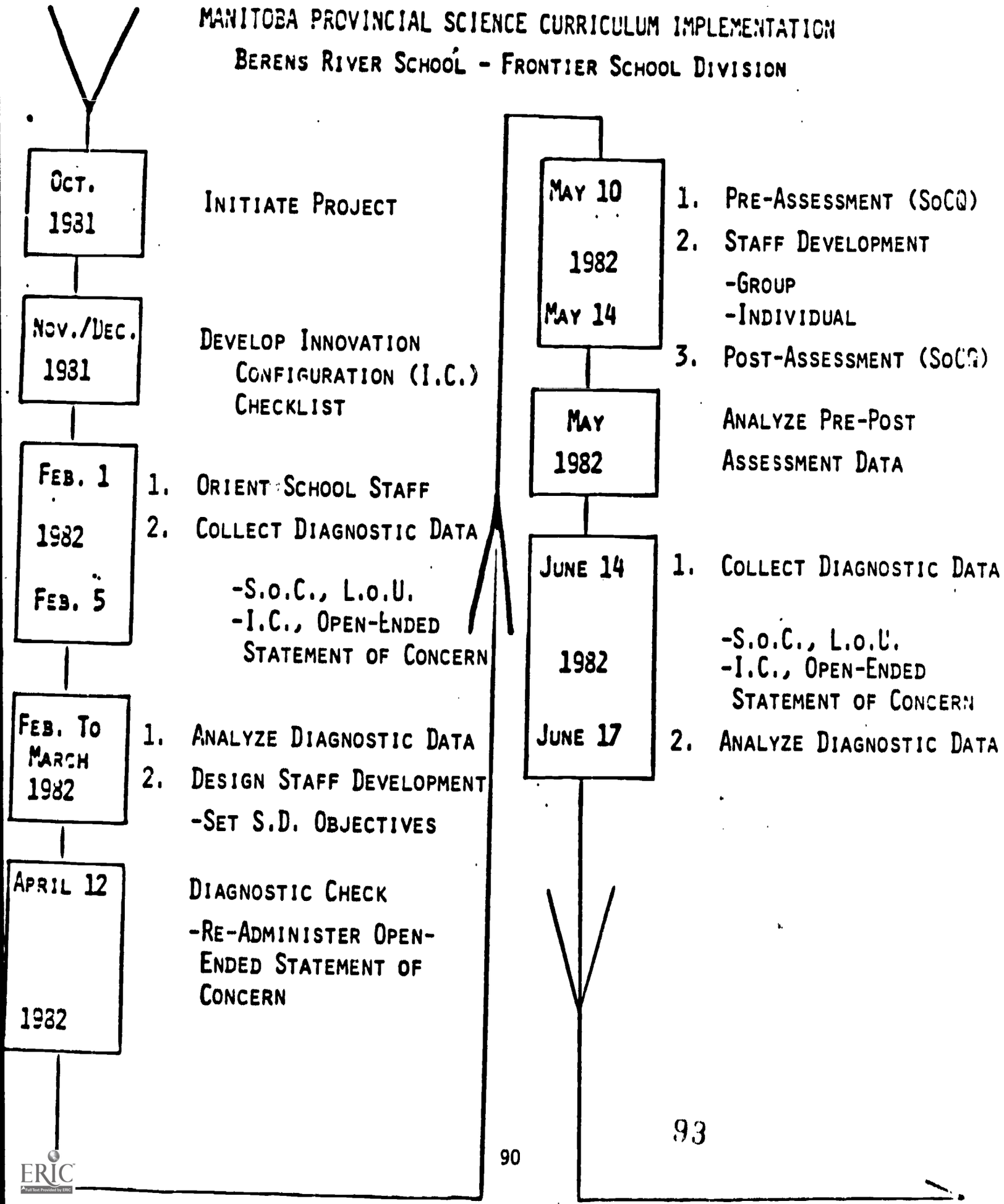
During the February 1st to 5th interval, Stages of Concern, Levels of Use and Innovation Configuration data were collected from the K-6 Staff at

FIGURE 6

STUDY TIME/TASK LINE

MANITOBA PROVINCIAL SCIENCE CURRICULUM IMPLEMENTATION

BERENS RIVER SCHOOL - FRONTIER SCHOOL DIVISION



Berens River School using the Stages of Concern Questionnaire, Open Ended Statement of Concern, Levels of Use Interview and the Innovation Configuration Interview. During February and March, the data were analyzed and staff development objectives set. In mid April, Stages of Concern data were again collected using only the Open Ended Statement of Concern to note any changes in teacher concerns since February, which should be reflected in changes in the staff development plan. The week of May 10 to 14, was set as a formal staff development week, consisting of a one-day large group in-service session and four days of small group and individual consultation sessions. The S.o.C.Q. was administered on May 10, prior to the beginning of staff development activities and again on May 14, at the conclusion of the staff development activities.

Between June 14 and 17, Stages of Concern, Levels of Use and Innovation Configuration data were collected using the S.o.C.Q., Open Ended Statement of Concern, Levels of Use Interview and Innovation Configuration Interview. The data were analyzed to note changes in staff Stages of Concern, Levels of Use and Innovation Configuration since February.

Chart One summarizes the aggregated changes in Stages of Concern for the study group.[1] Chart Two summarizes the aggregated changes in the Open Ended Statement of Concern for the group. Chart Three summarizes the changes in Levels of Use while Chart Four[2] summarizes the changes in the Innovation Configuration for the study group.

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[1]Although the study group consisted of 12 teachers, only 8 are reported on the S.o.C.Q. profile since 4 of the 12 teachers did not complete all 4 S.o.C.Q.'s required as part of the data collection.

[2]Although the study group consisted of 12 teachers, only 9 are reported on the Innovation Configuration Data Summary since 3 of the 12 teachers were not available for both Innovation Configuration Interviews as required as part of the data collection.

Stages of Concern Questionnaire data collected in February, 1982 (Chart One) indicated that stages of informational, personal, and management concerns were much higher in intensity than stages of consequence, collaboration, and refocusing concerns. This profile is typical of a group of individuals new to an innovation with limited information about the innovation and its concomitant expectations, who are primarily wondering how the innovation is going to affect them. Open Ended Statement of Concerns data (Chart Two) revealed group informational concerns about the demands or expectations of the innovation; personal concerns about individual abilities to make the innovation relevant; and management concerns centering around the availability and organization of resources. Levels of Use data (Chart Three) collected at the same time revealed that 5 of the 12 science teachers were not using the Manitoba Provincial K-6 Science Curriculum.

The Innovation Configuration data (Chart Four) for February 5, 1982, revealed that all individuals had wide ranging variations of practice for each component of the curriculum, many of which were identified on the Innovation Configuration Checklist as being unacceptable within the scope of the curriculum. The 12 innovation configuration components that are the essential features of the Manitoba Provincial K-6 Science Curriculum are identified on the chart in the columns while each subject teacher is identified in each row by a letter. Where row and column intersect a number appears. This number corresponds to the component variation on the Innovation Configuration Checklist (App. B) which the subject teacher related, during the Innovation Configuration Checklist interview,(App. C) as characteristic of his/her practice. A circled number indicates a component variation which is out-

CHART ONE

STAGES OF CONCERN PROFILE

I.D. N-8

SITE Berens River School

___ Feb. 5, 1982

--- May 10, 1982

.-.-. May 14, 1982

... June 15, 1982

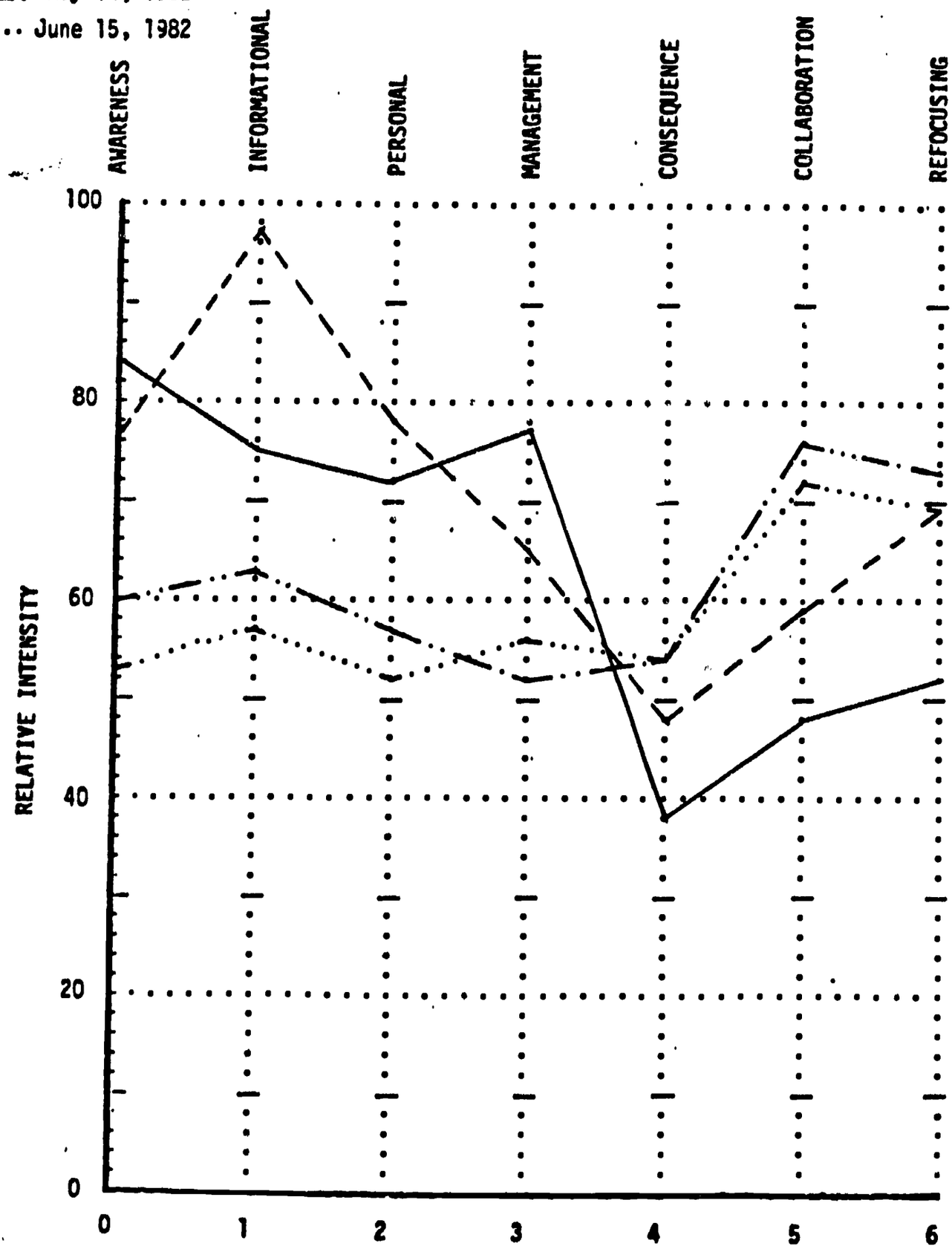

Chart Two

OPEN ENDED STATEMENT OF CONCERN

GROUP SUMMARY

February 5, 1982 and April 12, 1982

1. Informational Concerns

   Sample Comments: -How much of the guide do I have to teach?

   -What am I supposed to teach?

2. Personal Concerns

   Sample Comments: -Can I still use my textbooks?

   -How can I make Science interesting?

   -Am I teaching correctly?

3. Management Concerns

   Sample Comments: -Resources are not available.

   -Resources are not organized.

June 15, 1982

1. Consequence Concerns

   Sample Comments: -I can see the positive effects of the program and I want to increase these effects.

2. Collaboration Concerns

   Sample Comments: -I think if we got together as a group of teachers, we could improve the program by sharing our ideas.

Chart Three

LEVELS OF USE

DATA SUMMARY

Teacher	Classification of Use	
A	User	User
B	User	User
C	Non-User	User
D	Non-User	User
E	User	User
F	User	User
G	Non-User	User
H	User	User
I*	Non-User	*Non-User
J	Non-User	Non-User
K*	User	*Non-User
L	User	User
	7 Users and 5 Non-Users of the Manitoba Provincial K-6 Science Curriculum	9 Users and 3 Non-Users of the Manitoba Provincial K-6 Science Curriculum
	February 5, 1982	June 15, 1982

*The asterisk identifies those individuals who in June, 1982, were classified as Non-users of the curriculum since they no longer taught science as a result of a change in their teaching assignments.

CHART FOUR

INNOVATION CONFIGURATION

DATA SUMMARY

TEACHER	INNOVATION CONFIGURATION											
	February 5, 1982											
	PLANNING MATERIALS	INSTRUCTIONAL MATERIALS	INSTRUCTIONAL PLANNING	SCHEDULING	INSTRUCTIONAL CONTENT	INSTRUCTIONAL OBJECTIVES	STUDENT ACTIVITY	EVALUATION METHODS	EVALUATION FREQUENCY	EVALUATION CONTENT	INSTRUCTIONAL TECHNIQUES	INTERACTION TECHNIQUES
A	1	(4)	(3)	2	1	2	2	(3)	2	1	2	(3)
B	2	1	2	1	2	2	(3)	1	1	(3)	2	(4)
C	(4)	1	2	1	(4)	(4)	1	2	1	2	1	2
D	(3)	1	1	1	2	(6)	1	1	1	2	1	2
E	(5)	2	2	1	(4)	(4)	1	(4)	(5)	(5)	1	2
F	(4)	1	2	2	(4)	(4)	1	1	1	2	1	2
G	(3)	1	2	1	(5)	(3)	1	1	1	2	1	2
H	(4)	1	2	1	1	(4)	1	1	1	(3)	1	2
I*												
J*												
K	(4)	2	2	(3)	(5)	(6)	2	2	1	(3)	1	1
L*												
	✓				✓	✓				✓		

INNOVATION COMPONENTS	June 15, 1982											
	PLANNING MATERIALS	INSTRUCTIONAL MATERIALS	INSTRUCTIONAL PLANNING	SCHEDULING	INSTRUCTIONAL CONTENT	INSTRUCTIONAL OBJECTIVES	STUDENT ACTIVITY	EVALUATION METHODS	EVALUATION FREQUENCY	EVALUATION CONTENT	INSTRUCTIONAL TECHNIQUES	INTERACTION TECHNIQUES
A	1	1	2	1	1	2	2	2	1	2	1	2
B	2	1	2	1	2	2	2	1	1	1	2	(3)
C	2	1	2	1	2	2	1	2	1	2	1	2
D	2	1	1	1	2	1	1	1	1	2	1	2
E	2	2	2	1	2	2	1	2	1	2	1	2
F	2	1	2	1	1	1	1	1	1	1	2	1
G	2	1	2	1	2	2	1	1	1	2	1	2
H	2	1	2	1	1	2	1	1	1	2	1	2
I*												
J*												
K	2	2	2	1	2	(6)	2	2	1	(3)	1	1
L*												

(4) = Unacceptable component variations of individuals

✓ = Unacceptable component variations of the group as a whole

* = Although the study group consisted of 12 teachers, only 9 are reported on the Innovation Configuration Data Summary since 3 of the 12 teachers were not available for both Innovation Configuration Interviews as required as a part of the data collection.

side the scope of the curriculum. As a group, unacceptable variations were evidenced in 4 of the 12 components identified as critical to the Innovation. These 4 critical elements in which variations were unacceptable are noted by a check mark (✓) on Chart Four.

Based on the Stages of Concern, Levels of Use and Innovation Configuration data analyzed, staff development goals were struck. The goals identified were firstly, to facilitate the use of the Manitoba Provincial K-6 Science Curriculum by all non-users in the study group; secondly, to encourage component variations identified as being within the scope of the Manitoba Provincial K-6 Curriculum; and thirdly, to identify and address the high informational, personal and management concerns of the study group in relation to the Manitoba Provincial K-6 Science Curriculum.

Staff development activities were set for the week of May 10 to 14, which were suited to the Stages of Concern of individuals and the group, designed to facilitate the movement toward usage of the curriculum and increase teaching practices within the acceptable range of component variations for the curriculum. The Open Ended Statement of Concern data (Chart Two) collected on April 12, confirmed that individuals and the group as a whole expressed the same concerns as they did in February.

The S.o.C.Q. data collected on May 10, just prior to the staff development week, differed in one significant way from the February data. This one significant difference was the increased intensity of informational concerns in the May 10 reading. This change can be explained in terms of the group's heightened anticipation of the large group in-service session of May 10, which was designed to provide program information and expectations.

S.o.C.Q. data collected on May 14, after the staff development week, revealed significant changes in the intensity and distribution of concerns. The May 14 data showed a greatly reduced intensity of informational, personal and management concerns and an increased intensity of consequence and collaboration concerns. The teachers' informational, personal, and management concerns had been addressed. In addition; however, the teachers' concerns above the impact of the program upon students and the need of teachers to work together to improve the program had heightened.

It is interesting to note that refocusing concerns "tailed down" on May 14, while they "tailed up" on February 5 and May 10. Since refocusing concerns are the last to be represented on the S.o.C. profile chart, they constitute the "tail" of the graph. A "tailing up" occurs when refocusing concerns register as a peak on the profile. A "tailing down" occurs when refocusing concerns register as a valley on the profile. A relatively high intensity of refocusing concerns, whether it be a peak or a valley, indicates a general disposition to looking outside or beyond the innovation at hand. However, when refocusing concerns are peaked, ie., showing a relative intensity of concern higher than that for collaboration concerns, and are coupled with high personal and managment concerns there is an indication that a sense of personal insecurity and frustration with day-to-day management of the innovation is resulting in a desire to seek an alternative to the innovation. Such was the interpretation of the "tailed up" refocusing concerns of the February 5 and May 10 profiles. When

relatively intense refocusing concerns which register as a valley are coupled with intense collaboration or consequence concerns, there is an indication that a need to work with colleagues to improve innovation outcomes is resulting in a desire to look beyond the innovation or to improve the innovation. Such was the interpretation of the slightly "tailed down" refocusing concerns of the May 14 profile.

This change in the "tailing" of the refocusing concerns can be explained in that the group as a result of in-service training was less prone to look outside the innovation for resolution of personal and management concerns but was still very open to new innovations or changes to the existing innovation which would result in increased collegial collaboration for client benefit.

The S.o.C.Q. data collected during the week of June 10 to 15, revealed a profile of Stages of Concern almost identical to the profile displayed on May 14 while the Open Ended Statement of Concern collected on June 15, contrasted sharply with the February and April data. In June, through the Open Ended Statement of Concern, the group expressed concerns related to the effects of teaching and the program upon children and the need to collaborate or share ideas with each other for the purpose of improving instructional impact, while the Open Ended Concerns Statements of February were primarily of the informational, personal and management nature.

The Innovation Configuration data collected in June contrasted drastically from the data collected in February. For the most part, all component variations identified in February as unacceptable had moved into the acceptable range by June. The one major exception to this trend was teacher "J" who remained a non-user of the program. But even in this case, some positive changes in the Innovation Configuration were evidenced.

In summary, the data revealed little change in S.o.C.Q. between February 5 and May 10 when no planned staff development activity took place; significant changes in S.o.C.Q. between May 10 and May 14, coincidental with intensive staff development activity and little change in S.o.C.Q. between May 14 and June 15, again when no staff development was planned. The Levels of Use data showed a net decrease in the number of non-users of the Manitoba Provincial K-6 Curriculum from 5 in February to 3 in June, with 2 of the non-users in June being classified as such because they no longer taught science as a result of changes in teaching assignment unrelated to the project. The Innovation Configuration data revealed dramatic changes from unacceptable component variations to acceptable component variations between February 15 and June 15 for all teachers.

Conclusions and Implications

The research questions which focused the study were:

1. Will staff development, targeted by Stages of Concern, Levels of Use and Innovation Configuration data, predictably affect user Stages of Concern, Levels of Use and Innovation Configuration?

2. Can the Concerns-Based Adoption Model be used to evaluate the effectiveness of the curriculum implementation effort?

3. Can the Concerns-Based Adoption Model be used to evaluate the staff development efforts in support of curriculum implementation?

It was concluded that staff development targeted by Stages of Concern, Levels of Use and Innovation Configuration data can predictably affect user Stages of Concern, Levels of Use and Innovation Configuration. It was also concluded that user Stages of Concern did not change as a function of time, but did change as a function of staff development.

Although not conclusively proven by the study, the following statements were strongly implied and require additional study:

1. The curriculum implementation process can be monitored and evaluated in terms of changing user Stages of Concern, Levels of Use, and Innovation Configuration.

2. Staff development efforts can be evaluated in terms of user changes in Stages of Concern, Levels of Use and Innovation Configuration.

Summary and Conclusion

The unexpected outcomes of curriculum implementation; that is, the lack of expected change within the school as a result of curriculum implementation efforts has focused attention upon the curriculum implementation process specifically and the change process generally. At least four factors were identified during the implementation phase of curriculum projects as being accountable for the lack of anticipated outcomes. These factors were in review:

1. The conceptualization of change as an act rather than a process.

2. The inadequate attention paid to staff concerns relative to the innovation and staff development during implementation.

3. The lack of recognition of the importance and effect of the ecology of the school in implementation efforts.

4. The lack of clarity of the nature, scope and expectations of the innovation.

The questions related to the interrelationship of these factors and their combined effect upon the implementation process has resulted in a greater focus of attention upon studies attempting to identify means by

which the effectiveness of implementation and staff development activities may be evaluated.

The Concerns-Based Adoption Model has proven to be a very powerful conceptualization of the change process in that it recognizes each of the above identified factors and allows for their conceptual and practical manipulation in the planning and evaluation of implementation efforts. The Concerns-Based Adoption Model has provided the theoretical framework for the Manitoba Provincial K-6 Science Curriculum Implementation effort in Berens River School. The effort has been deemed successful in that the implementation effort has resulted in expected outcomes both in terms of program implementation and staff development.

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APPENDIX A

INNOVATION DESCRIPTION: MANITOBA PROVINCIAL K-6 SCIENCE CURRICULUM

INNOVATION DESCRIPTION: MANITOBA PROVINCIAL K-6 SCIENCE CURRICULUM

To be considered a user of the Manitoba Provincial K-6 Science Curriculum, an individual must be doing the essential components as a minimum.

COMPONENTS

ESSENTIAL

1. Teach science on a regularly scheduled basis.
2. Plan instruction in blocks in advance.
3. Use the curriculum guide in the planning of science instruction.

RELATED

4. Provide students with a variety of science experiences (learning activities) designed to facilitate concept and process development. "Concrete/hands-on" learning experiences are a regular feature of student activity.
5. Evaluate student development (learning) in each instructional unit.
6. Teach all units identified in the curriculum guide.
7. Employ a variety of instructional techniques designed to promote student involvement and activity in concept and process development; i.e., techniques other than lecture, note giving, assigned reading, and worksheets.

APPENDIX B

Innovation Configuration Checklist: Manitoba Provincial K-6 Science Curriculum

I.D. _____

NAME: _____

Innovation Configuration Checklist:

Manitoba Provincial K-6 Science Curriculum*

Component 1. Materials Used For Instructional Planning

_____ (1) A variety of materials including the curriculum guide; teacher's manual from Addison-Wesley Science; teacher's manual from other science programs such as Maps, Houghton-Mifflin, E.S.S., Science 5/13, etc.; and other materials.

_____ (2) Curriculum guide plus teacher's manual from Addison-Wesley Science.

Variations

_____ (3) Teacher's manual from Addison-Wesley Science.

_____ (4) Curriculum guide plus teacher's manual and/or materials other than Addison-Wesley Science.

_____ (5) Curriculum guide.

_____ (6) Other materials.

Component 2. Materials and Resources Used for Instruction

_____ (1) A wide variety of instructional materials and resources including concrete/hands-on material; community based or "out of classroom" resources; A/V materials such as slides, overhead projections, charts, graphs, pictures, filmstrips, films; texts; worksheet/dittosheet; reference materials.

Variations

_____ (2) Concrete/hands-on materials plus two or more other types of materials.

_____ (3) A variety of materials excluding concrete/hands-on materials.

_____ (4) Primarily one type of material.

*Component Variations above interrrupted line are ideal.
*Component Variations between solid and interrupted lines are acceptable.
*Component Variations below solid lines are unacceptable.

Component 3. Instructional Planning

Variations

_____ (1) Plan teaching one unit at a time.

_____ (2) Plan teaching generally one unit at a time; then specifically for a week at a time.

_____ (3) Plan teaching for a week at a time.

_____ (4) Plan teaching for one or two days at a time.

Component 4. Scheduling

Variations

_____ (1) Science is taught on a regularly scheduled (distinct or integrated) basis with the following time specifications:

K-3 - more than 15 minutes/day or 75 minutes/cycle
4-6 - more than 30 minutes/day or 150 minutes/cycle
7-9 - more than 30 minutes/day or 150 minutes/cycle

_____ (2) Science is taught on a regularly scheduled (distinct or integrated) basis with the following time specifications:

K-3 - 60-75 minutes/cycle
4-6 - 90-150 minutes/cycle
7-9 - 120-150 minutes/cycle

_____ (3) Science is taught on a regularly scheduled (distinct or integrated) basis with the following time specifications:

K-3 - less than 60 minutes/cycle
4-6 - less than 90 minutes/cycle
7-9 - less than 120 minutes/cycle

_____ (4) Science is not scheduled (distinct or integrated).

mponent 5. Instructional Content

_____ (1) Teach units from Addison-Wesley Science for the three themes identified in the curriculum guide plus additional enrichment/ interest units.

_____ (2) Teach units from Addison-Wesley Science for the three themes identified in the curriculum guide.

Component 5. Instructional Content (cont'd)

Variations

_____ (3) Use Addison-Wesley Science but do not teach units for the three themes identified in the curriculum guide.

_____ (4) Teach units from series other than Addison-Wesley Science for the three themes identified in the curriculum guide.

_____ (5) Do not teach units in accordance with themes identified in the curriculum guide.

Component 6. Instructional Objectives

_____ (1) Teach to objectives specified for each unit taught from Addison-Wesley Science or the curriculum guide.

_____ (2) Select objectives from those specified in each unit from Addison-Wesley Science or the curriculum guide on the basis of perceived student needs.

Variations

_____ (3) Select objectives from those specified in each unit taught from Addison-Wesley Science or the curriculum guide on the basis of teacher preference, interest, time considerations, etc.

_____ (4) Teach to objectives from a source other than the curriculum guide or Addison-Wesley Science.

_____ (5) Do not teach to objectives.

_____ (6) Teach activities rather than to objectives.

Component 7. Student Activity

_____ (1) Students are involved regularly and primarily in a wide variety of learning activities including concrete/hands-on experience followed by oral discussion and/or written reporting; discussions; group work; independent work; project and/or research work; experimentation.

Variations

_____ (2) Students are involved regularly and primarily in a limited variety of learning activities (two or more different types) one of which is concrete/hands-on experience followed by oral discussion and/or written reporting.

_____ (3) Students are involved primarily in activities such as reading assigned materials, completing assigned work/ditto sheets, attending to teacher demonstration.

Component 8. Evaluation Methods

Variations

_____ (1) Evaluate student learning using a variety of methods; some of which may be checklists, anecdotal observation and records, written and oral tests, task performance.

_____ (2) Evaluate student learning using two or more different methods.

_____ (3) Evaluate student learning using primarily one method.

_____ (4) Do not evaluate student learning.

Component 9. Evaluation Frequency

Variations

_____ (1) Evaluate student learning continuously or frequently throughout each unit.

_____ (2) Evaluate student learning at the end of each unit.

_____ (3) Evaluate student learning toward the end of each term.

_____ (4) Evaluate student learning toward year end.

_____ (5) Do not evaluate student learning.

mponent 10. Evaluation Content

Variations

_____ (1) Evaluate student learning in terms of:

a) Knowledge of science content.

b) Application of science knowledge, principles and skills to problem-solving in new situations.

c) Development of science process skills.

_____ (2) Evaluate student learning in terms of two of the following:

a) Knowledge of science content.

b) Application of science knowledge, principles and skills to problem-solving in new situations.

c) Development of science process skills.

Component 10. Evaluation Content (Cont'd)

Variations

_____ (3) Evaluate student learning in terms of one of the following:

a) Knowledge of science content.

b) Application of science knowledge, principles and skills to problem-solving in new situations.

c) Development of science process skills.

_____ (4) Evaluate student learning in other areas.

_____ (5) Do not evaluate student learning.

Component 11. General Instructional Techniques

Variations

_____ (1) Primarily or frequently employ instructional techniques which require student activity and involvement. Such techniques may include discussion, group work, research or project work, student experimentation, student reporting, etc.

_____ (2) Employ infrequently or on an irregular basis techniques which require student activity.

_____ (3) Employ almost exclusively techniques which require student passivity. Such activities may include lecture, teacher demonstration, assigned questions based on lecture demonstration or reading, etc.

Component 12. Interaction Techniques

Variations

_____ (1) Employ frequently a variety of discussion techniques such as redirecting, refocusing, clarifying, paraphrasing, etc., so as to broaden the scope of communication during science discussions.

_____ (2) Employ frequently a limited number of discussion techniques.

_____ (3) Employ discussion techniques infrequently or irregularly.

_____ (4) Limit interaction to the asking and answering of specific questions, giving of directions, etc., so that most science-related communication is narrow in scope and/or from teacher to student.

_____ (5) Limit interaction or discussion to non-science related topics.

APPENDIX C

Innovation Configuration Checklist Interview Schedule: Manitoba Provincial K-6 Science Curriculum

App. C

Manitoba Provincial K-6 Science Curriculum

Innovation Configuration Checklist Interview Schedule

The basic procedure followed for the interview is to initiate with an open ended question requiring a description of the interviewee's activity in regard to the innovation component; then, if necessary follow up with specific probe questions to elicit responses in relation to individual component variations.

Introduction

Do you presently teach Science using the Manitoba Provincial Science Curriculum? Briefly describe how you use the curriculum.

1. Scheduling of Science Instruction.

   initial question: Please describe for me how you have time-tabled your science?

   probes: Do you have science scheduled _____ _____?

2. Materials and Resources Used for Instruction.

   initial question: Please describe for me the kinds or types of materials your students use during science class.

   probes: Do they use _____
   What do they use most often?

3. Student Activity.

   initial question: In a typical science class what do your students do? Briefly describe their activities during a typical class-from beginning to end.

   probes: Would they _____
   Which Activities do they do the most of? The next most?

4. Instructional Planning

   initial question: How is your science instruction planned?

   probes: Do you plan _____?

5. Materials Used for Instructional Planning

initial question: What materials do you use to help you plan your science program?

probes: Do you use _____?

6. Instructional Content.

initial question: Do you teach all the units in the curriculum guide?

probe: How do you decide which units to teach and which to leave out?

7. Instructional Objectives

initial question: In the units you teach do you cover all the objectives for that unit?

probes: Please explain.
How do you decide which objectives to teach?

8. Evaluation Methods

initial question: Describe for me what techniques you use to evaluate your students?

probes: Do you use _____?

9. Evaluation Frequency

initial question: When do you evaluate?

probes: Do you evaluate_____?

10. Evaluation Content

initial question: What do you evaluate your students on?

probes: Please explain how you do this evaluation.

or

Do you evaluate your students on _____?

How do you do this?

11. General Instructional Technique

initial question: Could you describe for me what you do as a teacher during your science classes. Briefly describe your activities during one of your classes from beginning to end.

probes: What do you do the most of? The least of?

12. Interaction Techniques

initial question: Do you have the opportunity for discussions during your science classes? Please describe one of these discussions for me? What happens?

probes: How do you manage to start these discussions? How do you keep these discussions going? What do you do with the kids who don't talk much?

A STUDY OF CURRICULAR AND INSTRUCTIONAL CHANGE PROCESSES IN RURAL HIGH SCHOOLS[1, 2, 3]

Robert Larson

College of Education and Social Services
The University of Vermont

Presented at the Annual Meeting of the
American Education Research Association
Montreal, April, 1983

A STUDY OF CURRICULAR AND INSTRUCTIONAL CHANGE PROCESSES IN RURAL HIGH SCHOOLS[1, 2, 3]

Robert Larson
College of Education and Social Services
The University of Vermont

"If it ain't broke, don't fix it" is a slogan often associated with rural America. To what degree is this the stance toward change assumed by the schools in rural settings? By what processes does change occur in those schools? This paper describes the major findings from research on change processes conducted in the fall of 1981 in two Vermont high schools.

Background

The literature on educational change over the past two decades tends to fall into the domains of either studying the phenomena associated with the adoption, adaptation, or development of a particular innovation (e.g., PSSC physics, team teaching, computer assisted instruction) (see, for example, Berman, 1975-78; Hall & Loucks, 1977,78; Miles, 1964; Gross, Giaquinta, & Berstein, 1971; Smith & Keith, 1971; Wolcott, 1978) or the process of change itself (see, for example, Culver & Hoban, 1973; Watson, 1967; Herriott & Gross, 1979). Whatever the orientation, these studies have been grounded in the procedure of first identifying some innovation(s) and then examining change through the vehicle of the innovation(s).

The focus of this research project was to examine processes of change in two medium size (400-500 students) rural high schools by selecting the schools first. The schools were picked because they were representative of some 20 other high

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[1]Presented at the Annual Meeting of the American Educational Research Association, Montreal, April, 1983.

[2]The research described herein was supported partially by an Institutional Grant from the University Committee on Research and Scholarship of the Graduate College of the University of Vermont.

[3]Appreciation is expressed to the administrators and faculties of the high schools used as study sites. Without their cooperation and assistance, this research could not have been conducted.

schools like them in the state, they are a common size high school in rural sections of many states, and they were in rural settings based on demographic and geographic criteria (e.g., income levels, % of the population employed in agriculture and related fields, distance from urban areas). Other than the presence of two imposed innovations, the researcher did not become aware of other innovations until after the study began.

Ten Above

This school, built in 1958 and located in central Vermont, 1½ hours from the state university and the state's largest city, was comprised of 517 students, grades 9-12. Out of 121 graduates in June 1981, 48 went on to some form of higher education. 1981 mean SAT scores for seniors were 463V and 461Q as contrasted to national averages of 424V and 466Q. The current drop out rate was 4.5% and daily absenteeism, 7.0%. Per pupil costs were $2083 (as measured by allowable tuition*) as contrasted to a state average of $2043 for a school of this size. Starting salary with a BA was $10,760; the top of the scale with an M.Ed. was $18,635. Thirty six teachers were employed at Ten Above: 19 male, 17 female; 12 had a BA or BS, 24 a master's; 21 were in the 30-39 age bracket; 1 had taught for less than 4 years. The principal, a male in his 40s had been in his position since 1975.

Ten Below

This school, built in 1970 and located in northern Vermont, 1½ hours from the university, was comprised of 407 students, grades 7-12. Out of 58 graduates in June, 1981, 21 went on to some form of higher education. 1981 mean SAT scores for seniors were 407V and 438Q. The current drop out rate was 3.0% and daily absenteeism 7.0%. Per pupil costs (as measured by allowable tuition) were $2010 as contrasted to a state average of $1995 for a school this size. Starting salary

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*Some educators argue that this figure is a more accurate measure of local support for education because it factors in capital expenditures and transportation costs.

with a BA was $9550; the top of the scale with an M.Ed. was $17,458. Thirty one teachers were employed at Ten Below: 19 male, 12 female; 18 had a BA or BS, 13 a master's; 19 were in the 30-39 age bracket; 3 had taught for less than 4 years. The principal, a male in his 30s, had been in his position since 1974.

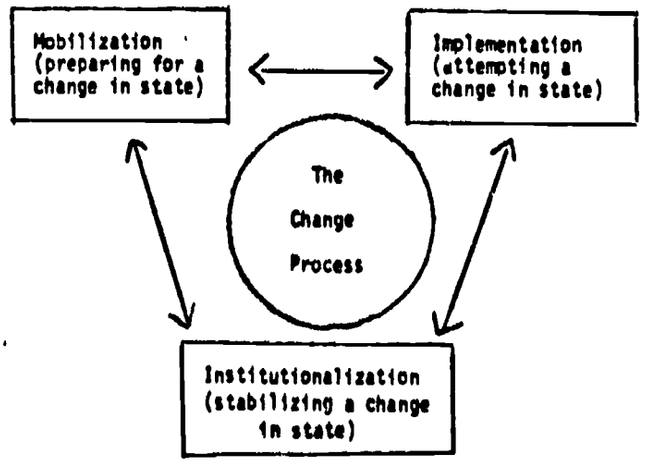
The Research Framework

The focus of the project was on investigating processes of curricular and instructional change within the last five years in each school. Five years was selected so that two known "imposed" innovations, Vermont Basic Competencies regulations and PL 94-142 staffings would be included. Innovation (after Hall & Loucks, 1981) was defined as any new process, product, or program that required the user to change his/her behavior. It is a more deliberate act than the notion of change, and is a "species of the genus change" (Miles, 1964:14) herein defined as "To alter by substituting something else for, or by giving up for something else; to put or take another or others in place of. To make different; to connect." (Webster). Innovations were the vehicle through which to study change.

The research framework was constructed around the change process model and accompanying subprocesses of mobilization, implementation, and institutionalization as conceptualized by Berman (in Lehming & Kane, 1981:264-274) and which had emerged out of the Rand studies of Federal Programs Supporting Educational Change (Berman & McLaughlin, 1978). As the authors point out, the model is intended to convey that

Figure 1

The Research Framework



change is not usually a linear process moving from discrete stage to discrete stage; rather it is a highly complex, interactive one. This model fits quite well with the "organized anarchy", "garbage can", and "loosely coupled" concepts seen more and more in the literature about schools (Clark & McKibbin, 1982; Weick, 1982). Other main concepts for the study were drawn from components of the Concerns Based Adoption Model developed by Hall and his colleagues at the University of Texas (Loucks, Newlove, & Hall, 1975; Hall, George, & Rutherford, 1979; Heck, Stiegelbauer, Hall, & Loucks, 1981).

The principal research questions, then, which guided the specific operational questions (not included in this paper), were:

1. How does a rural secondary school mobilize for change?
2. How does a change get implemented?
3. How does a change get institutionalized?

Six weeks were spent in each school. Initial exploratory interviews were conducted with the total professional population with selected interviews conducted with and questionnaires distributed to [illegible]sets of that population according to the set's involvement with identified innovations (see Table 1). Relevant documents were analyzed but observation was informal.

Time constraints led the author to focus on innovations that were within the rubric of curriculum and instruction. Administrative innovations (e.g., of a budgeting or a scheduling nature) were not included in the study. This is a research limitation because managerial innovations can clearly have a stimulating, supporting, or impeding effect on things curricular or instructional. However, during the interviews informants did not point out managerial innovations that were affecting the latter.

One caveat. This is not a comparative study. Therefore, depending on what seems to be the most useful way to display data, findings are sometimes integrated for both schools and sometimes portrayed separately.

Table 1

The Data Base

	Ten Above 9/12 - 10/16	Ten Below 10/19 - 12/9
Average No. of Exploratory Interviews* per Person	98 interviews / Total N = 41 = 2.4	94 interviews / Total N = 37 = 2.5
Levels of Use Interviews*	N = 29	N = 24
Work Attitudes Interviews*	N = 18	N = 24
Total Interviews	146	145
Stages of Concern Questionnaire	N = 62	N = 49
Work Attitudes Questionnaire	N = 33	N = 28
Board Minutes 75-81	examined	examined
Program of Studies and Related Materials	examined	examined

* Interviews @ 40 minutes each.

Mobilization

"Preparing for a Change in State"

In this section our interest is focused on how change begins, the phase of the process we know least about (Fullan, 1982:15). The findings emerged primarily from the initial exploratory interviews (for an average of 100 minutes each) with the total professional staff in each school. These interviews were aimed at topics like identifying the innovations, the stimuli for them, the processes by which they became implemented, who played what roles in the processes, and what innovations had been dropped within the last five years.

Two broad categories of curricular and instructional change are discussed, voluntary and imposed (after Fullan, 1982:25). The former are those chosen, invented, or adopted by the organization and the latter are those imposed on it.

Voluntary Change

The exploratory interviews revealed the existence of several types of innovations. To operationalize these types further, they have been placed into a crude typology, the definitions being far from discrete. However, they do make the notion of innovation more specific and avoid the tendency in the literature to treat it as a homogeneous category (Daft & Becker, 1978:120). Not included in the list are Vermont Basic Competencies and the staffings associated with PL 94-142 which emerged as the major mandated changes in each organization since 1975.

Table 2

A Typology of Voluntary Innovations

Course -	a body of organized knowledge taught on a semester or year basis (e.g., Vermont Ecology, Data Processing)	N = 14	N = 14
Unit -	a segment of a course (e.g., 4 weeks on mfg. in metals, 2 weeks on map skills in geography)	N = 8	N = 9
Theme -	a topic of discourse or discussion (e.g., consumerism in Home Econ., sex equity in U.S. History)	N = 7	N = 8
Methods & Materials -	means of instruction and the implements for its delivery (e.g., games & simulations in French, new text in Basic English)	N = 5	N = 3
Technology -	a technological device for aiding the learning process (e.g., microcomputer in math, memory typewriter in Business Education).	N = 2	N = 4
Structure -	work patterns or working relationships of organization members (e.g., double period for transcription, open classroom area for math)	N = 3	N = 3
TOTAL		39	41

Observations

1. The innovations are not arrayed in any order according to attributes and consequent effect on the organization, a much needed next step. For example, a

new course or technological innovation like the microcomputer is quite different from a unit or theme type in terms of attributes such as financial cost, complexity, and organizational impact (for the best discussion in the literature relative to innovation attributes, see Zaltman, Duncan & Holcek, 1973:31-47).

2. The innovations were primarily individualistic (linked to a teacher rather than a group) and could be seen as relatively "simple" in nature on criteria such as inherent complexity and difficulty of use (Fullan, 1982:59).

3. The predominant type listed are curricular rather than instructional. Could this be because teachers, the primary data sources, had trouble recalling innovations that tended to be more process like than product? The principals contend thus, pointing out that in retrospect a more exhausive list of innovations should include the numerous changes in teaching methods, styles, or educational perspectives that they know of. However, during the interviews with principals such innovations did not surface either. Whatever the reasons for the perceived omissions, these kinds of "micro" level changes should not be treated lightly because enough of them in combination could have an important effect on the organization. As Hall (1977:6) points out, the question, "Is It in use?" has even more direct and profound implications for research than does the question, "What is It?"

Also not to be slighted is the issue of principal tenure. Given their commitments to school improvement and their efforts to effect it, over a number of years, through relatively simple innovations, they could move a considerable distance toward this goal.

4. Given that the number of innovations identified may be far from accurate, ought there to be some "reasonable" number of them in schools like Ten Above and Ten Below over a five-year period? Where do we start from as an "innovation baseline"? As we shall see the subprocess of mobilization appears to be on-going, cyclical, and nonlinear and innovations adopted or developed are very much linked

to the contexts of change in the larger society, the community, and the organization.

5. Other than budget approval for an innovation that required special support, courses were the only type requiring consistent formal system support from the principal, superintendent, and board. This despite the fact that some innocuous appearing innovations such as a theme of sex equity in social studies or life's origins in biology, had the potential, if not taught responsibly, to have considerable disruptive outcomes. A high degree of trust between educators and the boards (in this case) existed at Ten Above and Ten Below. Without it a hierarchical damper would impede the voluntary innovations because virtually every staff act would require system approval.

6. Many of the innovations link with each other in a coherent pattern which Table 2 cannot portray. Space prohibits a detailed description of such instances but two examples would be several new courses (or revisions) in English and Social Studies in each school.

7. The typology raises a question in terms of functions served by the innovations. Could it be that some innovations were considered and rejected by innovators because they were not needed at this point in time? Or conversely, might the absence of "packaged" innovations such as career education materials or more large scale innovations such as team teaching, be due to lack of resources to write grants or funds to install them and resources to support them, or a general reluctance to get involved with outside bureaucracies that control funds and monitor program progress? As Daft and Becker point out, more research is needed in this area (1978:129).

Stimuli for and Sources of Change

Table 3 depicts the stimuli for the 80 innovations listed in Table 2. There was no pattern to certain types of stimuli being attached to certain types of innovations, so the stimuli are listed by frequency.

Table 3

Stimuli for Change

Student interest or dissatisfaction (e.g., students not electing elective courses, failing grades, or "acting up" out of boredom)	21
Teacher ego, interest, or experience (e.g., the poor image of a course, special affinity for a pet subject, new information from a graduate course)	13
Laws, regulations, and accreditation visits (e.g., Title IX, PL 94-142, accreditation team suggesting a new course)	10
Teacher observation (e.g., kids needing first aid instruction because of hunting, seeing that kids needed sex education information as it wasn't available through a community agency)	7
Teacher dissatisfaction (e.g., "I had to do something with this material. It was driving me crazy.")	6
Journals and newsletters (e.g., a death & dying unit from the English Journal)	5
Administrative direction (this category, although low in #'s, is not an accurate portrait of the principals' roles. It encompasses several changes through principal direction such as a "bundle" of course innovations in a department.*	4
School structure (e.g., a new study hall structure that affected "time on task", an open area that facilitated teaming in math)	4
Budget (addition or cuts) (e.g., a model office from state and federal voc. ed. $, creating a new course out of two courses due to RIFing)	3
Culture change (e.g., carry over activities in PE to meet leisure time needs)	3
The local public (e.g., parental complaints about #'s of failures in a govt. course.)	3
Peers (e.g., using the local paper as an outlet for work of a journalism class)	1
TOTAL	80

*More than one innovation occurring at or around the same time (Hall & Loucks, 1981:55).

Table 4 depicts the sources of the ideas for the innovations. In other words, although an innovation was stimulated there was usually a need to find a way to respond to it in the form of an idea that could be put in practice. As with the stimuli, there was no pattern to sources being connected to certain types of innovations. Also, there are fewer sources listed (72) than there are changes because there were instances where the stimulus provided the idea (e.g. a first aid unit into a PE course).

Table 4

Sources of Ideas

Journals and newsletters	21
Peer discussions	13
College courses	12
Regional and state conferences	6
Faculty at other schools	4
TV	4
Other (librarian, principal, new texts, teacher center, dept. meetings. salespeople, test results)	12
TOTAL	72

Observations

1. In these schools, the stimuli for change had a distinct "inner directedness" to them (i.e., from teachers, students, administrators, etc.). Other than laws, regulations, and accreditation visit input, these schools were not subject to significant public pressure to change. In fact, a problem in these settings was to obtain a more accurate picture as to how laypeople saw the organization and what they expected of it. At the same time, no teacher or administrator identified changes they wished to see but were hesitant to implement for fear of disturbing the local community (e.g., each school had an elective sex education course,

neither school had encountered a library censorship issue). In other words, at this point in time, Ten Above and Ten Below were not faced with vulnerability problems (i.e., subjected to pressures that are incompatible with one's goals without the capacity to resist) that urged on the organizations innovations they did not wish to develop or adopt (Sieber in Eidell & Kitchel, 1967:122-127). As one of the principals put it,

> One thing I like about a rural school is that I'm in charge here. I have my foot on the accelerator. I can channel change more here than in an urban or suburban setting.

Given this picture, one clear message is that educators in these kinds of settings bear a great responsibility for identifying school needs and initiating appropriate improvements.

2. This writer was unable to identify any of the 80 innovations that related consciously and specifically to school philosophy and goals. None of them seemed counter to or incompatible with what "school is all about" but this implicit and "functional fit" was based more on intuition and experience than on a set of pre-existent goals. This finding is consistent with a similar outcome from the Daft & Becker, 1978:177; and Larson, 1982, studies of high schools. The "garbage can" process was much in evidence in these organizations: "Preferences are discovered through action as much as being the basis for action" (March & Olsen, 1979:25). Rationality, relating consequences systematically to objectives (March & Olsen, 1975:70) was not the prevailing mode of behavior; however, organizational behavior at Ten Above and Ten Below was intentional (i.e., having meaning or purpose).

3. Teachers were primarily responsible for mobilizing personal and organizational processes for voluntary innovations. These individuals were competent, veteran teachers (between the schools only two people had taught for less than four years), although their educational level (in contrast to Daft & Becker, 80) was not related to their being more or less inventive or adoptive than their peers.

These outcomes support Fullan's (1982:46) contention that under the right condi-

tions, many teachers are willing to change at the classroom level.

4. Changing to alternative curricular content or instructional methods requires knowledge about options. The findings illustrate that at Ten Above and Ten Below the stimuli for innovations were not imbedded in the rationalistic process that is so highlighted in the organizational literature. This outcome is consistent with other research that has examined problem solving behavior in schools (see Berman & McLaughlin, 1978:14, and the Abt studies of the Rural Experimental Schools Program, Rosenblum & Louis, 1981:255-260). Innovation and subsequent change were driven largely by intuition, hypothesizing, and experience, modalities that some writers are advocating as important ways through which to stimulate organizational improvement (March & Olsen, 1979:78-79).

However, to what degree is new information and knowledge critical to mobilization? How should it interface with intuition, hypothesizing, and experiences? As Sieber points out, there is considerable reason to believe that an "enlightened" person through knowledge is more likely to be an innovator (in Lehming & Kane, 1981:148). Yet in these schools the manner in which ideas were garnered (Table 4) was quite haphazard. Given the constraints of geography and finances (to name but two of many) in a rural setting, could means such as the ERIC system, the National Diffusion Network (neither of which were mentioned by anyone in either school as a source of ideas), teleconferencing, TV, and the traditional traveling library be used more effectively to enlighten educators about options to what is? When one considers the reality that a teacher's search for occupational knowledge is retarded by the individualism that characterizes the workplace plus the present rather than future orientation of the job (Lortie, 1975:212) finding ways to inject new ideas into the organization is a task of some import.

Incentives to Change

A common axiom regarding organizations like schools which are concerned with molding people rather than objects, is that the special problems of motivational processes between clients served and those (in this case) educating, require that the latter possess wide discretionary power to act in order to maximize productive interaction (Katz & Kahn, 1978:159). To assess how teachers saw themselves in terms of job discretion they were asked to complete a "Sense of Autonomy" scale which included 24 items relative to feelings about work, scored on a 1 (low) to 6 (high) scale of autonomy (Packard, et. al., 1976:211-251). The results were:

Table 5

Sense of Work Autonomy

		Mean Score
Ten Above	N = 33 (out of possible 41)	4.5
Ten Below	N = 28 (out of possible 37)	4.6

These scores support the pattern of teacher centered stimuli for innovation identified in Table 3. Most teachers acted on the autonomy they had to mobilize for innovation within the broad context of what they perceived as educational needs.

Why, however, did they act? There may be many stimuli impinging on an individual who may feel quite autonomous, but there may be little incentive to change. Drawing on Lortie's classic study of the teaching profession and his instrumentation (1975:248-254), interviews were conducted with a select number of teachers relative to factors that were associated with motivation to change. Two key questions are mentioned here.

"What are the most important tasks you have to do as a teacher?"

"What are the greatest satisfactions you get from teaching?"

Table 6

Most Important Tasks To You As A Teacher

N = 42

- Being a role model for kids, the daily contact with them, meeting their needs	26
- classes themselves	17
- planning and organizing each day	14
- prepare students for the future	4
- discipline and classroom management	4
- develop and update curriculum	4

Table 7

Greatest Satisfactions
From Teaching

N = 42

- seeing students do well in school (learn, grow, develop)	31
- working with kids, influencing their lives	18
- times off (primarily for one's mental health)	17
- control of job, variety to the day, prestige of teaching, ambience of the work	15
- peer relations	10
- seeing students do well in later life	9
- feedback from kids	7
- teaching the subject	4

Then, to gain further insight into this domain of attitudes and values, an additional question was asked (after Lortie).

> If you were given a gift for ten extra hours a week for work purposes (and were paid for it), how would you use it? (see Table 8)

Table 8

A Gift of Extra Work Hours
(% of hours selected out of the total hour base)

	Ten Above N=18 180 hours	Ten Below N=24 240 hours
Class Preparation	25	18
Curriculum Development	22	10
Community Relations	.05	.04
More Teaching	10	20
School Management	.06	0
Parent Conferences	.02	.05
Counseling Students	12	28
School Activities	16	13
(Work with peers and prepare use of AV)	.01	.008

Observations

1. For Ten Above and Ten Below teachers, the driving forces for curricular and instructional innovation were rooted primarily in a variety of psychological factors. The data in Tables 6, 7, and 8 for secondary teachers are remarkably similar to what Lortie found in his research on elementary schools. "The structure of teaching rewards, in short, favors emphasis on psychic rewards (1975:103)." Unlike extrinsic (money, prestige, power) and ancillary (work schedules, job security, time off) rewards which do not fluctuate very much and which an individual cannot easily change, with a minimum of effort, task related satisfactions can often be increased (Lortie, 1975:103). Hence, a relatively autonomous teacher can alter numerous dimensions of curriculum and instruction which are within one's control or at least influence, and if the alterations (i.e., innovations) have an impact on one's relationships with students they enhance psychic rewards.

This dynamic among highly autonomous teachers was in operation in these schools. Again to draw on Fullan (1982:46), under the right conditions, most

teachers will be innovative. In these high schools powerful local mobilization incentives were in motion, incentives that Sieber (in Lehming & Kane, 1981:144-166) states are often present in organizations but underutilized for such a purpose. Other research has demonstrated (Katz & Kahn, 1978:418) that intrinsic factors associated with the job itself are important work motivators. What these data are saying, however, is that for most teachers, as the tables indicate, developing and updating curriculum per se was not seen as a highly important task. Some other force must prod innovation in this arena. It may well be, though, that the same conclusion does not hold for instructional change because change in this arena can have more immediate "psychic payoff" for a teacher. Although not articulated as clearly as curricular matters, to this researcher instructional satisfaction was integral to a high percentage of staff statements that led to the categories in Tables 6 and 7.

2. In these schools, one could argue that status quo oriented faculties were not a prime problem. Various stimuli and incentives were present to mobilize change. Rather, a prime problem was to find ways to control and channel change in organizationally desired directions without suppressing individually imbedded motivation to innovate.

3. If psychic rewards are important to the mobilization subprocess, then energy must be channeled in that direction. It cannot be if faculty find large portions of their time diverted to pupil control, discipline, and general managerial issues. At Ten Above and Ten Below the organizational climates had telling effects on innovation. Both schools were well managed, discipline problems were minimal (the researcher rarely heard of a teacher complaint on these scores), and the buildings were relatively free of vandalism. Hence teachers, the prime change agents, were relieved of the maintenance concerns they wished to be free of (see Tables 6, 7, and 8 of this study and Lortie, 1975:168-186), and could focus their attention on the classroom and on curricular and instructional improvement.

4. The principals (At this point it is appropriate to discuss the principals. Certainly just running a well administered building would not in itself have that much of an impact on staff motivation to be innovative.)

Today's educational literature is replete with references to the critical role principals play in building and maintaining an effective school and in aiding or impeding the improvement process. Indeed, as some wits put it, "We have rediscovered the principalship." This stress on a role, although highlighting the importance of leadership, can also result in a warping of expectations so that we begin to think that near miracles will occur if we can just find the "right" administrator. In fact, given the nature of the position with its endless responsibilities and hectic work pace, most of the time "educational leadership happens when it happens at all, within the cracks and around the edges of the job (Miller and Lieberman, 1982:366)". Whether or not such leadership is exerted, however, the research converges on the point that the principal has a significant impact or the implementation and continuation of any innovation (Fullan, 1982:140).

The principals at Ten Above and Ten Below had been in their positions for six and seven years respectively. Both men were active and assertive individuals, were seen consistently out and around the school, were heavily involved with staff and students, and were very concerned about and engaged in currucular and instructional improvement. The Ten Above principal was more of a "facilitator" in style, using a variety of strategies to organize and influence teachers and relying extensively on teachers influencing peers (Fullan, 1982:138-139). He summarized his approach to change thusly:

> What is my role in relation to change? I plant the seed and leave it there and water it from time to time. When it takes place you give away the ownership of it. The only people who may be aware of the change are those involved in the transaction.

The Ten Below principal was more "directive" in style, tending to decide more himself as to what the change ought to be and then working to get faculty to follow

his tentative decisions (Fullan, 1982:138-139). This statement captures his change philosophy."

> The focus at Ten Below is on change as a process and not so much as an event. People here have to come to feel that an idea is theirs before they'll move. Things happen subtlely, in low key ways.

However, although these were overall behavioral tendencies, each alternated much of the time between these styles, depending on the situation.

The following comments by teachers represent how most faculty felt about their principals.

(at Ten Above)

> He's very responsive and accommodating. He understands curriculum and knows what's going on here in detail down to the content of the novels we teach.
>
> I'm very dependent on him being willing to support an idea and advocate for it. Without that backing after awhile you just give up.

(at Ten Below)

> He's on top of the latest trends. He seems to read all the magazines. He challenges us to think about what we're doing. If we as a department don't buy it though, he doesn't force it on us.
>
> He's continually trying to upgrade curriculum. I have the feeling that he's never quite satisfied with what's going on. He wants excellence.

These observations capture other dimensions of the principals' styles, dimensions that served to support and encourage the subprocess of mobilization that led to curricular and instructional innovation.

Imposed Innovations

Two types of innovations were identified that had been imposed on the total organization within the last five years. The first was Vermont Basic Competencies, a regulation passed by the State Board of Education in 1977 that mandated the teaching and testing of basic competencies in Vermont schools in the areas of reading, writing, speaking, listening, mathematics, and reasoning. All students, in order to graduate, were to master them beginning with the class of 1981 (with the exception of reasoning which was effective as of 1983). It was left up to

each school to develop its own system for implementing the competencies, for monitoring student progress, for testing, and for record keeping. The second innovation was PL 94-142 which also became effective in 1977.

The principals of Ten Above and Ten Below took an active role in mobilizing their staffs relative to these coming changes in the system. In each school the innovations met with a less than enthusiastic response from teachers, but there was no outright resistance. Each principal was clear and definitive about what these changes were, the intentions underlying them, that the organization had a responsibility to comply regardless of how people felt about the merits of the regulations and the law, and that compliance would be in good spirit and effectiveness.

Implementation

"Attempting a Change in State"

"Unlike mobilization, the subprocess of implementation has been studied extensively during the past decade" (Berman in Lehming and Kane; 270). Fullan and Pomfret (1977:336), define implementation as the actual use of an innovation; what happens to it and to the people involved with it as it is put into practice. Studies of implementation fall into two primary orientations: (1) fidelity in terms of the degree to which use corresponds to intended or planned use as understood during mobilization; (2) process in terms of the dynamics of the processes at work during implementation (Fullan and Pomfret, 1977:340). This section will address the process orientation.

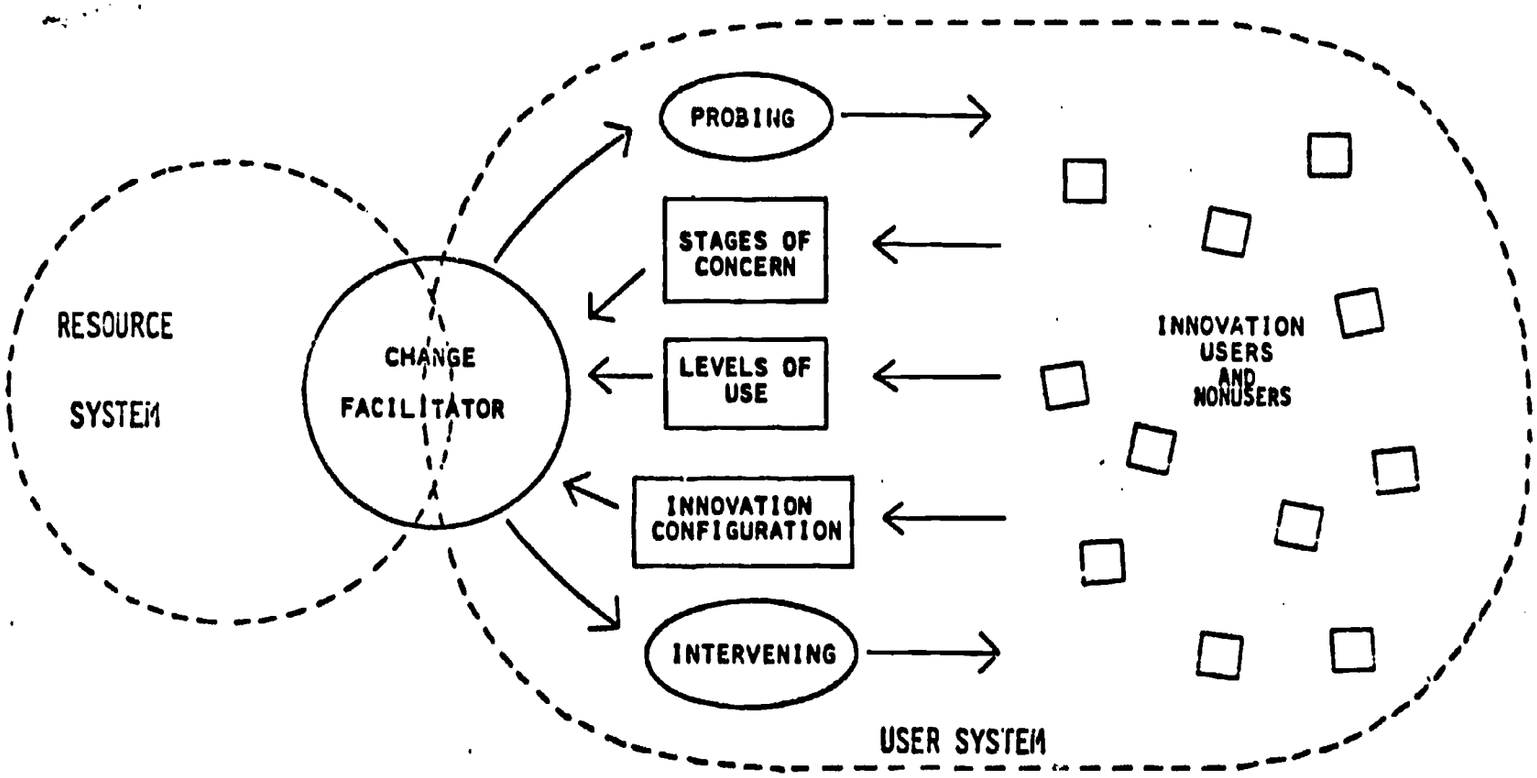
The Concerns Based Adoption Model

Ideally the analysis of implementation of the innovations described in the previous section would rely heavily on observation of them in use. However, time constraints prohibited systematic observation from being conducted. Therefore, in addition to examining relevant documents pertaining to these innovations, this

researcher decided to experiment with an adaptation of the Concerns Based Adoption Model (CBAM) developed at the R&D Center for Teacher Education at the University of Texas at Austin to examine implementation phenomena via instrumentation rather than observation.

FIGURE 2

THE CONCERNS-BASED ADOPTION MODEL



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Underlying the Model are four key assumptions; change

1. is a process and not an event,
2. is made by individuals first, then institutions,
3. is a highly personal experience, and
4. entails developmental growth in feelings and skills (Hall, 1979:2-3).

In the CBAM, the change facilitator is the formal or informal leader (e.g. principal, department chair, etc.) within or outside the organization who assumes an active role in facilitating adoption and in assisting individuals who are using the innovation or considering use to increase their confidence and competence with the innovation. Levels of Use identify the behaviors of people involved with an innovation. Stages of Concern relate to the feelings, perceptions, motivations, and attitudes of people who become aware of an innovation, approach use, and then use it (the process of implementation). Innovation Configurations is a means to measure the degree to which an innovation has been adapted since it was first implemented (the concept of fidelity). Lastly, information about concerns, use, and adaptation can be helpful to the facilitator who may be able to influence the use of the innovation.

The LoU and SoC processes were applied to a number of innovations selected out of the total "innovation pool" at Ten Above and Ten Below. Selection was based on the author's judgment as to the specificity and substance of the innovations in terms of their potential for further examination via CBAM instrumentation. There were limitations in how the instruments were utilized. First, they are constructed to investigate the change process over time, developmental movement if you will. In this project they were applied just once to get a snapshot rather than a movie of individuals at a stage in development. Second, they are constructed to investigate the change process by analyzing innovations adopted or developed by groups of people in the organization, groups large enough to provide a statistically sound N. In this project they were applied to singular innovations (with the exception of the competencies and 94-142). Another limitation applies to the Open Ended Statements of Concern interview. Unlike the LoU interview, it is not a rigorous instrument recommended for application as a research tool, but it has been found helpful in assessing concerns (Newlove & Hall, 1976:2). Because interviews focused on

singular innovations the researcher concluded that this more diagnostic oriented interview was a more productive methodology to rely on as contrasted to the SoC questionnaire.

Levels of Use

A total of 53 "voluntary" and "imposed" innovations in use were examined through the Levels of Use interview, a validated focused interview that enables a researcher to assess the behavior of individuals involved in the use of an innovation (Loucks, Newlove, and Hall, 1975). No attempt was made to select a stratified sample of innovations in each category with the result that in some columns there are Ns of one. With the exception of the competencies, there was basically no comparability in length of use (as built into LoU methodology) because these individually adopted or developed changes had been in effect from a minimum of three months to four years.

Figure 3 depicts the basic concept of LoU. Not included in the schematic are seven categories of key functions associated with use of an innovation (e.g., knowledge about it, sharing information with others, planning). An interviewer can determine an LoU for each category and an overall LoU rating. As with SoC instrumentation, detailed profiles of users can emerge from these interviews that can provide the innovator and change facilitator (e.g., teacher principal, department chair) with rich clinical type data about the change process.

*Use of the LoU interview technique as a research or evaluation tool requires that the interviewer be trained and certified as an LoU interviewer.

Figure 3

LEVELS OF USE OF THE INNOVATION:

TYPICAL BEHAVIORS

LEVEL OF USE		BEHAVIORAL INDICES OF LEVEL
VI	RENEWAL	THE USER IS SEEKING MORE EFFECTIVE ALTERNATIVES TO THE ESTABLISHED USE OF THE INNOVATION.
V	INTEGRATION	THE USER IS MAKING DELIBERATE EFFORTS TO COORDINATE WITH OTHERS IN USING THE INNOVATION.
IVB	REFINEMENT	THE USER IS MAKING CHANGES TO INCREASE OUTCOMES.
IVA	ROUTINE	THE USER IS MAKING FEW OR NO CHANGES AND HAS AN ESTABLISHED PATTERN OF USE.
III	MECHANICAL USE	THE USER IS USING THE INNOVATION IN A POORLY COORDINATED MANNER AND IS MAKING USER-ORIENTED CHANGES.
II	PREPARATION	THE USER IS PREPARING TO USE THE INNOVATION.
I	ORIENTATION	THE USER IS SEEKING OUT INFORMATION ABOUT THE INNOVATION.
0	NONUSE	NO ACTION IS BEING TAKEN WITH RESPECT TO THE INNOVATION.

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Tables 9 and 10 portray overall Levels of Use at Ten Above and Ten Below.

Table 9

Ten Above
N = 29

OVERALL LEVELS OF USE

TYPES OF VOLUNTARY INNOVATIONS ↓	Level 0 Non Use	Level I Orientation	Level II Preparation	Level III Mechanical	Level IVA Routine	Level IVB Refinement	Level V Integration	Level VI Renewal
COURSE					8	3		
UNIT					2	3		
THEME					2			
METHODS & MATERIALS					4			
IMPOSED INNOVATION ↓ BASIC COMPETENCIES				1	6			

Table 10

Ten Below
N = 24

	Level 0 Non Use	Level I Orientation	Level II Preparation	Level III Mechanical	Level IVA Routine	Level IVB Refinement	Level V Integration	Level VI Renewal
COURSE					2	8		
UNIT					1	3		
THEME					1			
METHODS & MATERIALS						1		
IMPOSED INNOVATION ↓ BASIC COMPETENCIES					8			

Observations

1. The data reveal few "surprises," given the nature of the users and the innovations themselves. Early LoU research demonstrated that after at least 3 cycles of use 30-40 percent of users were found to be at the routine level (Hall, et.al., 1975:7) and more current analyses continue to support that conclusion (Rutherford, 1982). Also, one would expect a user who was an adopter or developer to be at least a Level IVA. It is interesting to observe that all teachers involved with an imposed innovation, in this case the Basic Competencies, were at a "routine" LoU IVA.

2. To stimulate a user to move "up" to the next LoU usually takes some intervention by a change facilitator (someone other than the user him/herself). Although there is voluminous literature on educational change, there is a dearth of material focused specifically on types and processes of intervention (Hall, Zigarmi, Hord, 1979:105).

At Ten Above and Ten Below the principal was the primary person and department chair second when it came to intervening (i.e., "...an action or event or a set

of actions or events that influences use of the innovation", Hall, Zigarmi, Hord, 1979:110) with teachers on matters relating to curriculum and instruction. In each school chairs had part teaching assignments and had no responsibility for supervision and staff evaluation so, in general, were not seen by the principal or themselves as "line" officers with a right and duty to intervene in a peer's affairs. Much of the principals' intervention in innovation matters occurred indirectly through what might appear to be unrelated activities such as budgeting or scheduling, yet in countless subtle ways these activities were used to encourage or discourage teacher behavior that might lead to educational improvement. Here we are discussing the kinds of interventions principals may make with staff on a routine basis that, over time, can come to represent a host of marked or missed opportunities to facilitate change (see Principals as Change Facilitators, 1982).

3. In each school there were illustrations of more systematic intervention with teachers by principals. At Ten Above (as is described in an upcoming section) the principal chaired all PL 94-142 staffings and through these had gained considerable influence over his organization's delivery of services to students eligible for those services under the law. At Ten Below the principal had an evaluation and development session with most teachers every year, dependent on their employment tenure. Through this process he could assess performance with that person, determine any needed areas of improvement, and set appropriate objectives.

Although intervention per se was not a part of this research, the author's assessment is that with an appropriate intervention most staff who were at a routine level of performance had the potential to be moved to refinement, which should lead to some adaptation of the original change so that its impact would be increased. In addition, refinement behavior can be an important source of revitalization and satisfaction for teachers who are in a profession where frustration and alienation are all too prevalent in the workplace (Fullan, 1982:118-119). It would seem that here supervisors have considerable opportunity to be

of assistance to their staff and to have an impact on organizational renewal.

4. Analysis of the staff members who were at Level IVB indicates one general set of reasons as to why they were at a "refinement" rather than "routine" LoU. These teachers were excited by the innovation; they saw it as having a real effect on kids' learning; they felt considerable success with their students; they saw the innovation as having even more potential for having an impact on the school. In sum, these people projected the "sense of efficacy" that comes through in the research as an important factor in successful implementation (Fullan, 1982:72).

5. Although this study did not attempt to dissect each voluntary innovation in terms of innovation characteristics, it does appear that findings from the implementation literature have some explanatory value when analyzing change at Ten Above and Ten Below. This literature concludes that the following four innovation attributes relate to successful implementation: (1) need - teachers (users) perceive the change was needed; (2) clarity - the user is clear as to what the essential features of the change are and what it means in practice; (3) complexity - the degree to which the change can be divided into components, the degree to which it requires cooperation and communication with other organization members; and (4) practicality - the change is seen by users as tangible, relevant, and of utility in a specific situation (Fullan, 1982:57-63).

Given that these were voluntary changes, one would expect, therefore, that these attributes would be associated with what teachers had adopted or developed. These veteran educators had operationalized their own screening process through the application of these innovation characteristics. Overall one could conclude that these were primarily "simple" changes in that they were targeted on single classrooms and hence easier to implement than large-scale organization-wide changes (Fullan, 1982:59) (like the competencies and staffings).

When we consider the strong norms of staff autonomy at Ten Above and Ten Below, the "flat" structure of each school in terms of administrative assistance to the

principal (at Ten Above there was a full-time assistant principal and at Ten Below a part-time), the non-evaluation roles played by department chairs, the "loosely coupled" structure of schools like these (e.g., classrooms can operate relatively independent of each other, it is difficult to track the impact of classroom level decisions on the rest of the organization, spans of control are large) Weick, 1982; Willower, 1982), and the lack of central office personnel available to work with the principal, it is not surprising that these kinds of innovations would be prevalent. "Innovation type is also terribly important because innovations have to fit the function of the territory (Daft & Becker, 1978:172)."

It is also possible that these more singular innovations were nurtured by the organizational structure and the staff autonomy present and that, conversely, these institutional features mitigated against more system-wide changes. Indeed one intriguing finding from the Abt studies of the Rural Experimental Schools (RES) program was that high levels of autonomy were negatively related to comprehensive change and that bureaucratic type structures were supportive of them (Rosenblum and Louis, 1981:258). The time, energy, persistence, and know-how necessary to implement the competencies and the staffings, point to the reality of schools possessing these autonomy features being hesitant to take on other large-scale changes innovations such as those promoted by the RES program (e.g., career education, personalized education, diagnostic instruction).

6. In sum, it should be pointed out that these observations about principal behavior are not inconsistent with the previous discussion about teacher autonomy and staff initiative; principal intervention, in other words, can occur in a multitude of modes that may often appear to be unconnected to organizational change. A key point here is whether the administrator, when intervening in such ways, see his/her actions as closely or remotely linked to matters of curriculum and instruction.

Some nagging questions emerge from this brief analysis. Is it true as some researchers assert (Fullan, 1982:59; Rosenblum & Louis, 1981:16), that "simple" changes like these at Ten Above and Ten Below do not make much of a difference in the quality of education offered? Considering the general resource limitations of rural schools, are they, therefore, programmed for small-scale versus large-scale change with the result that superior education can rarely be offered in those settings? This "impact" issue is extremely difficult to address in the context of these voluntary changes because the root question, "Toward what end?" was rarely raised publicly in these organizations. Consequently, to what degree do these innovations represent progress on the road to educational excellence?

Stages of Concern (from interviews)

Figure 4

STAGES OF CONCERN:

TYPICAL EXPRESSIONS OF CONCERN ABOUT THE INNOVATION

	STAGES OF CONCERN	EXPRESSIONS OF CONCERN
IMPACT	6 REFOCUSING	I HAVE SOME IDEAS ABOUT SOMETHING THAT WOULD WORK EVEN BETTER.
	5 COLLABORATION	I AM CONCERNED ABOUT RELATING WHAT I AM DOING WITH WHAT OTHER INSTRUCTORS ARE DOING.
	4 CONSEQUENCE	HOW IS MY USE AFFECTING KIDS?
TASK	3 MANAGEMENT	I SEEM TO BE SPENDING ALL MY TIME IN GETTING MATERIAL READY.
	2 PERSONAL	HOW WILL USING IT AFFECT ME?
SELF	1 INFORMATIONAL	I WOULD LIKE TO KNOW MORE ABOUT IT.
	0 AWARENESS	I AM NOT CONCERNED ABOUT IT (THE INNOVATION).

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The results of the Open Ended Statements of Concern interview are depicted in Tables 11 and 12.

Table 11

TEN ABOVE
N = 29

Types of Voluntary Innovations	STAGES OF CONCERN: Stage 0 Awareness	Stage 1 Informational	Stage 2 Personal	Stage 3 Management	Stage 4 Consequence	Stage 5 Collaboration	Stage 6 Refocusing
Course				4	7		
Unit					5		
Theme				1	1		
Methods & Materials				2	2		
Imposed Innovation ↓ Basic Competencies				4	3		

Table 12

TEN BELOW
N = 24

Types of Voluntary Innovations	STAGES OF CONCERN: Stage 0 Awareness	Stage 1 Informational	Stage 2 Personal	Stage 3 Management	Stage 4 Consequence	Stage 5 Collaboration	Stage 6 Refocusing
Course					10	1	
Unit					4		
Theme							
Methods & Materials					1		
Technology							
Imposed Innovation ↓ Basic Competencies				6	2		

Observations

Although the total SoC score from the Open Ended Statements of Concern interview is not as useful a measure of concerns as is the individualized analysis of Stages of Concern through a developmental "concerns profile," it has proven to be helpful in assessing concerns (Newlove & Hall, 1976:2), in this case at a moment in time, the fall of 1981.

1. The relatively veteran faculty who were the population studied, did not have concerns about the nature of the innovation itself. Rather some were having intense feelings about the management of the change, (i.e., handling of time, materials, or other logistical matters.) Examples of Stage 3 concerns are:
   a. two teachers were trying to find ways to coordinate use of a new text.
   b. a teacher responsible for implementing Basic Competencies felt that "I didn't go into secondary education to teach elementary school material. All I seem to do is file stuff."
   c. a teacher teaching a new course with a group of low achievers, was having strong feelings about how to organize and deliver the content so as not to "bore the kids," have them lose interest, and consequently result in discipline problems.
   d. a teacher of science was trying to find ways to bring more guest speakers to class, to get students out on field trips to apply course learnings, and to manage these activities with "less hassle."
2. Other staff were concerned with the impact of their work on the student. Research on the concerns concept indicates that, in general, as people gain experience and knowledge and skill, they move in development toward impact level stages (Hall, George, and Rutherford, 1979:6). Examples

of Stage 4 concerns are:

a. a science teacher who was integrating "current issue" type material into her class (e.g., genetic counseling, euthanasia, holistic health) said that "Kids in a rural area need to be made aware of controversial issues."

b. a teacher of a new social studies unit asked, "Of what benefit will this material be to this advanced group?"

c. a teacher in industrial arts was wondering how he'd stimulate and sustain student interest in new material because "Their interest controls the whole thing. The more they're into it the better it works for them."

d. a teacher implementing Basic Competencies was concerned that the competencies didn't stifle her creativity with students by subtlely becoming the central focus of a course.

3. Given the individualistic, single classroom nature of the teaching profession, it is not surprising to see only one teacher at Stage 5, collaboration, and none at the refocusing level. As Fullan (1982:119) has pointed out, cultural conditions and practicality concerns mitigate against teachers taking the initiative to promote change beyond their classroom.

4. The concerns surfaced through these Open Ended Statements of Concern interviews show clearly that the subjective dimension of teaching, its phenomenology, is critical to understand before an administrator engages in efforts to change "what is" (Fullan, 1982:120). The notion that change is a very personal experience for each person involved in it underlies the CBAM model. CBAM stresses that "...it is the person's perceptions that stimulate concerns, not necessarily the reality of the

the situation (Hall, George, & Rutherford, 1979:5). And, as Hall and Loucks caution, the concerns that administrators or staff developers have may not be the same as those of teachers, and within any group, even one involved with the same innovation, there will be a variety of concerns (1978:53). Implementation, then, can flounder on the rock of erroneous assumptions about concerns.

Stages of Concern (from questionnaire)

As mentioned in an earlier section, only two "imposed" innovations were identified in each school that in turn affected, in theory, the whole organization. These were Vermont Basic Competencies and PL 94-142 staffings, both of which allowed considerable room for local adaptation. Here use of the Stages of Concern questionnaire, a 35-item validated instrument, was appropriate in order to elicit further understandings about implementation. To reiterate an earlier limitation, however, the instrument was applied just once rather than several times over at least a few months period. Hence the data that follow are not developmental.

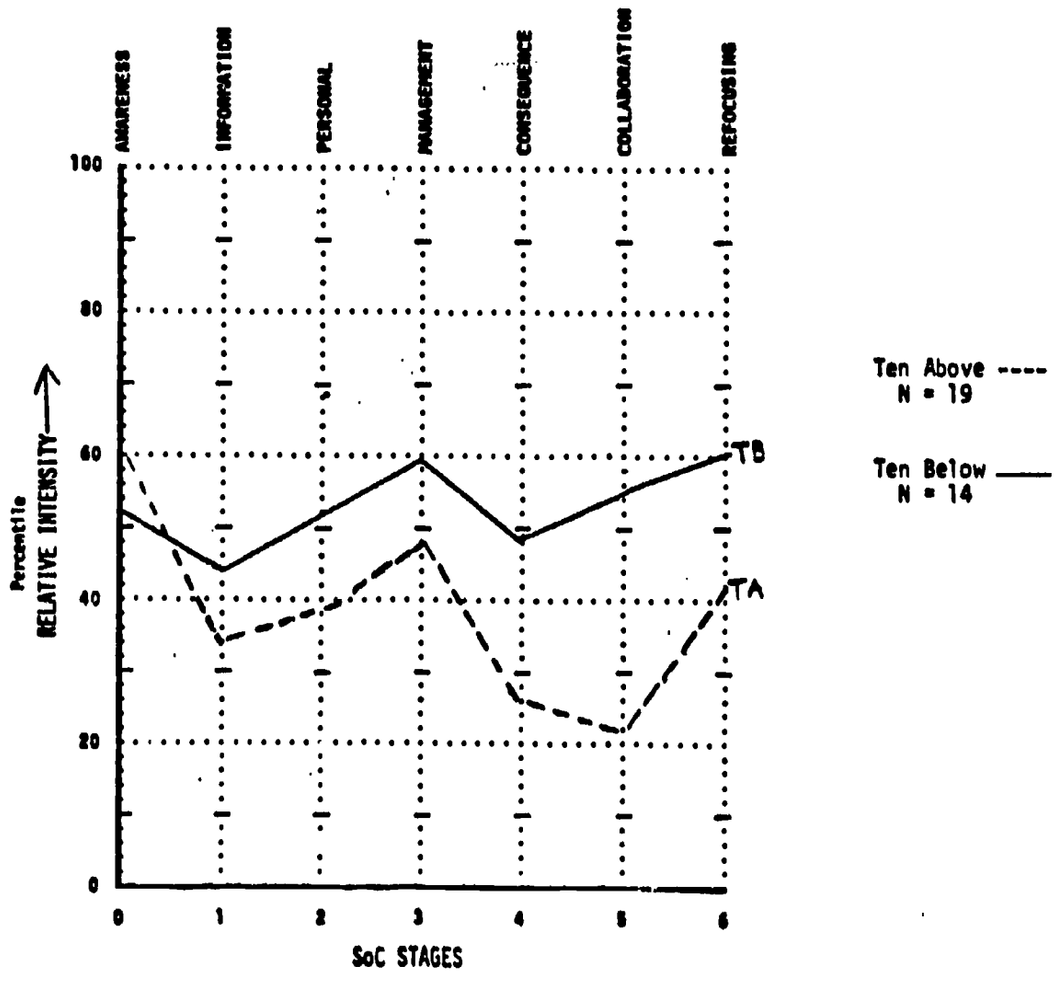
In both schools the English, mathematics, social studies, and science departments were responsible for implementing the competencies which involved the teaching and testing of the material and the monitoring of the system. Other departments were not involved directly with this innovation. It was a different matter with 94-142, which in theory could affect every staff member, depending on whether they had some responsibility for a youngster who was eligible for special education services. In reality, due to their assignment, (e.g., basic math or English vs. calculus or French) some teachers had considerable contact with these students because they were enrolled in class and consequently had weekly high (3 to 4), moderate (1 to 2), or no contact with these students during peak staffing times (usually the fall and spring).* Due to space limitations, what will be described

*Under the law the only people required to participate in a staffing are the special educator, a teacher who has the student in class, and one other person, usually a counselor. Ten Above and Ten Below had participation expectations that required that other staff plus the parents be involved in staffings. What needs to be pointed out is that rarely did a parent attend, despite extensive efforts on the part of the special educator, counselor, and principal to get them to do so.

next are group data (see Figures 5 & 6) relating only to the teachers responsible for implementing competencies and staff highly involved with staffings. Far more clinical type diagnosis could be done with individual SoC profiles, but this study has focused on the group level.

Figure 5

The Concerns of Ten Above and Ten Below Teachers of English, Math, Science, and Social Studies About Implementing Basic Competencies.

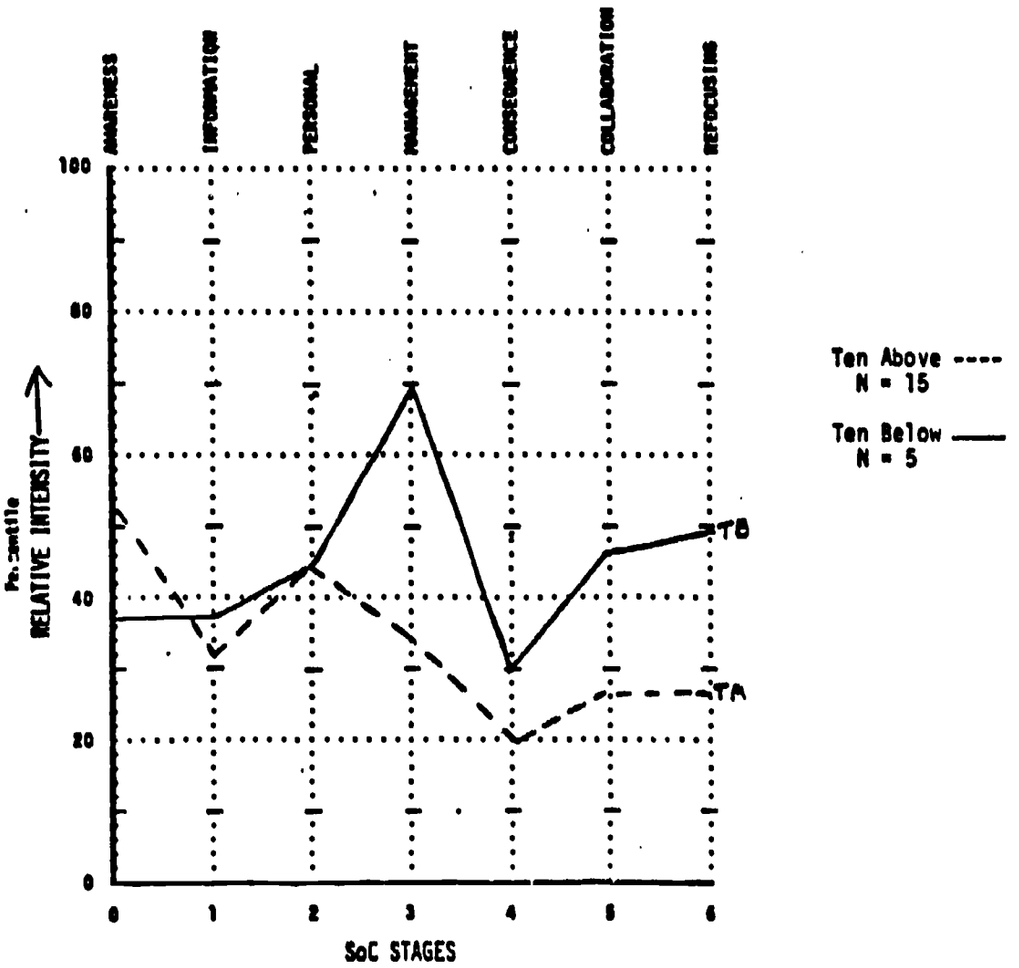


0	1	2	3	4	5	6	
60	34	39	47	27	22	42	Ten Above
53	43	52	60	40	55	60	Ten Below
7	9	13	13	21	33	18	Difference

RESEARCH ON IMPROVEMENT PROCESS/CONCERNS BASED ADOPTION MODEL R&D CENTER FOR TEACHER EDUCATION. THE UNIVERSITY OF TEXAS AT AUSTIN.

Figure 6

The Concerns of Ten Above and Ten Below Staff Highly Involved in P.L. 94-142 Staffings.



0	1	2	3	4	5	6	
53	30	45	34	19	25	28	Ten Above
37	37	45	69	30	44	47	Ten Below
16	7	0	35	11	19	21	Difference

RESEARCH ON IMPROVEMENT PROCESS/CONCERNS BASED ADOPTION MODEL R&D CENTER FOR TEACHER EDUCATION. THE UNIVERSITY OF TEXAS AT AUSTIN.

Observations

1. It is important to stress the fact that higher or lower concerns are not synonomous with "good or bad" feelings. What the scores indicate is the intensity of concerns at a moment in time for an individual experiencing change, the higher the score the stronger the feelings, thoughts, or considerations and conversely

with a lower score.* Higher and lower are not absolute but relative to other stage scores for that person. And what may be a high percentile of intensity for one person may be the lowest concern for another (Hall, George, and Rutherford, 1979:31).

2. Basic Competencies

The following factors, drawn from interviews, documents, and limited observation are offered as reasons for the differences in the SoC profiles.

Ten Above (N = 19)	Ten Below (N = 14)
- a three page, detailed set of instructions on managing the competencies was available to staff including how to record pupil progress.	- a one page, less detailed set of instructions was available which did not address items such as record keeping.
- each dept. responsible for competency implementation had at least one teacher (some had two) assigned to a Competency Class in place of a regular class assignment. Hence using this period in combination with one's regular unassigned period a teacher was able to take youngsters out of study hall who were in need of more help with BC s. Teachers felt that they were able to contact "90%" of kids in need of assistance.	- The English and math depts. had a teacher assigned to a "lab" in place of a regular class assignment. This period was used similarly to what was done at Ten Above. Teachers felt that there were still "many" kids that they were not able to assist.
- Competency tests were in place in all depts. responsible for BCs, and were being used with results recorded. The principal used these results to follow up on problem students and to identify weak spots in the BC system.	- Tests were in place in English, math, and social studies, and were being used with results recorded. The principal used these results similarly to the Ten Above principal.
- Each dept. was required to keep a BC file on each student for whom it had responsibility which was used in combination with a once a year computer print-out. A typical teacher comment on the files was, "I trust them more than the print-out as I know they are my entrees." These were kept up-to-date and monitored periodically by the principal, who also monitored the system through print-out data.	- File folders were kept on a voluntary basis by the English, math, and social studies depts. Computer print-outs were provided quarterly. The principal monitored the system through the print-outs.

*According to CBAM staff, a difference of at least ten percentile points is an important difference in terms of concerns.

3. Staffings*

Ten Above (N = 15)	Ten Below (N = 5)
- Four pages of detailed instructions on placement procedures, staffing procedures, and staffing protocol were available to staff.	- No written instructions were available to staff.
- The written material made it clear that any staff member identified as "regularly in contact" with the student was required to attend. Anyone not attending, "... will be so noted on the record."	- "Required attendance" was stated verbally and in writing by the principal and the Resource Room teacher.
- Staffings were held before school, were limited strictly to 30 minutes, and were taped. People attending arrived on time and did not leave early.	- Staffings were held after school, often started late, and often ran over the set time frame. People attending sometimes arrived late and left early.
- The principal regularly chaired staffings. Of 106 staffings between 1/28/80 and 10/15/81 he chaired 103. He once stated, "I take a trip everytime we have a staffing. It is the one place where professionalism really comes through day after day."	- The principal only attended when requested by the Resource Room teacher.
- At least five days before a staffing, the Resource Room teacher notified on paper those people who were to attend. This notice instructed these individuals to come prepared to discuss the strengths and weaknesses of the student and tentative recommendations.	- At least five days before a staffing, the Resource Room Teacher notified on paper those people who were to attend.

*The difference in the N's of teachers highly involved in staffings was due to:

a. at Ten Above, although 94-142 requires only one staffing every three years on an eligible student, they were held every year and any teacher who had that individual in class was required to be present. Therefore, many teachers in grades 9-12 were involved. There were also numerous requests for staffings from teachers.

b. At Ten Below, because students were coming right from the three feeder elementary schools into the 7th grade, the focus of staffings in the fall of '81 was on junior high kids. Therefore, only a small N of teachers were highly involved.

3. Staffings (continued)

- The Resource Room teacher was beginning to observe eligible students in regular classrooms on a systematic basis.
- There was no systematic observation of eligible students in regular classrooms.
- The Resource Room teacher was starting her third year full-time on the job.
- The Resource Room teacher was starting her first year full-time on the job.

4. There are several reasons for the differences in how these imposed innovations were implemented. One is a set of logistical factors (e.g., bus arrival and school starting time) that affected implementation. A second is the human factor of what personnel are available at a particular moment in organization history who can assume responsibility for a school-wide change effort. (e.g., a veteran vs. less experienced staff member). Another revolves around the administrative and educational philosophies of the principals as reflected by: (1) the degree to which professionals need specificity in directions and monitoring when implementing an imposed innovation; (2) the degree to which an administrator should intervene in a change situation; (3) the degree to which an administrator could (or was inclined) to allocate personal time to these kinds of needs; and (4) the degree to which innovations like these were seen as integral rather than adjunct to existing programs.

5. Throughout this subprocess of implementation, one can see the thread of influence of administrators. A dilemma for them was how much to intervene with staff in some dimension of implementation. "The psychological and sociological problems of change which confront the principal are at least as great as those that confront the teachers (Fullan, 1982:71)."

Institutionalization

"Stabilizing a Change in State"

The essence of institutionalization is the decision to continue what has been started, to establish new routines built around what has been implemented. According to Berman (in Lehming and Kane, 1981; 270) this subprocess has received "scant attention" in education or in other fields. The three pages devoted to the subject

in the latest comprehensive volume on change (Fullan, 1982; 76-78), attests to this conclusion.

As we have seen, within the last five years, other than the Basic Competencies and staffings, there were no school-wide imposed innovations at Ten Above or Ten Below that required a "continue" or "discontinue" decision. Therefore, this section will focus on voluntary innovations, the vast majority of which revolved around individual teachers or individuals affiliated with colleagues in a department arrangement.

Continuation

Other than the ten year self evaluation conducted in preparation for a visit by a regional accreditation team, neither school had developed a systematic means by which to decide what aspects of curriculum and instruction to retain. As was discussed earlier regarding mobilization, school philosophy and goals were not apparent as reference points for decision-making for that subprocess and neither did they play a publicly articulated role in institutionalization. Rather the "choice opportunities" (March and Olsen, 1979:27) that presented themselves popped up at sundry times and decisions were made accordingly. As we shall see, decisions revolved primarily around when something should be considered for discontinuation. When one considers the "busy" environment of schools, the sheer volume of human interaction that occurs, and the fatiguing pace of work (Pellegrin in Dubin, 1976:353-355) it is understandable that there is minimal energy left to engage in discussions about continuation. What energy is available is allocated to what rises to the top of the pile of problems and choice opportunities, and "what" rises is very dependent on

> ... a relatively complicated intermeshing of the mix of choices available at any one time, the mix of problems that have access to the organization, the mix of solutions looking for problems, and the outside demands on the decision-makers. (March and Olsen, 1979:36).

Discontinuation

Table 13 summarizes curricular or instructional innovations discontinued within the last five years (as best determined by the available data).

Table 13

Innovations Dropped

	Ten Above	Ten Below
Courses	26	23
Units	2	

Table 14 lists the reasons given by school personnel for dropping what was once viewed as an innovation.

Table 14

Reasons for Dropping a Curricular or Instructional Innovation*

N = 67

- Material too difficult for students	3
- Enrollment decline	2
- Loss of staff	2
- Lack of student interest	2
- Boring material, couldn't get speakers, cost of film rentals	2
- Students procrastinated on doing work	2
- Community reaction to kids out in town during the day	1
- No time to do justice to material	1
- Material covered in another class	1

*51 interviewees could not identify an innovation dropped within the last five years.

Observations

1. In a high school dropped courses can be tracked by examining programs of study. Technological innovations dropped can usually be observed. Virtually impossible to track are changes such as units of study, themes, or methods and materials.

Hence memory, which we know is far from reliable, becomes the key retrieval mechanism. Considering the sheer number of innovations identified in each organization, it seems reasonable to conclude that over five years more things were dropped than could be remembered in order to make room for the new, or a lot of curriculum and instructional adaptation took place to absorb the "add ons."

2. More courses were dropped (49) than were added (28). A great deal of this change can be attributed to the elimination of electives in English and Social Studies which had become quite popular in the early 70s. By the middle of the decade the "Back to Basics" movement had begun, and these fields were early targets of criticism for allowing too much student choice and thus permitting many kids to avoid taking more "rigorous" courses. The locus of these changes was within subsystems of the schools and keyed off of "discontent" phenomena linked vaguely to organizational philosophy and goals. This subsystem route illustrates one advantage of a loosely coupled structure which is to enable change to occur in one part of the organization in response to environmental pressures while other parts can remain stable (Weick, 1982:674).

3. At Ten Above and Ten Below course level changes did not occur on a matching or one to one basis. In many instances a dropped course was merged in some way with an existing or new course (e.g., Introduction to Physical Science, required of all 9th graders, became basic chemistry, physics, and biology electives, American Government content absorbed partially into Introduction to Social Studies and partially into U.S. History). Such processes enabled many discontinuation decisions to be made relatively easily within the organization by educators.

4. The list of "reasons for dropping an innovation" illustrates again that a rationalistic process of goal setting, needs assessment, program development, program implementation, and evaluation was not operational in these schools. It is also interesting that financial factors and staff turnover, the two main reasons

given in the literature for discontinuation (Fullan, 1982:76-77), were not predominant at Ten Above and Ten Below. The literature focuses on schools that received federal project money and when the "soft" money was gone the LEA did not pick up the difference. At Ten Above and Ten Below such money was scarce, and within the last five years there had been minimal staff turnover.

5. Previous data indicates that a major reason for the continuation of most innovations at Ten Above and Ten Below was the fact that the vast majority had been adopted or developed by teachers rather than having been imposed (see Table 2, p.6). Also, the ones implemented had been stimulated mainly by the very personalized forces of student attitudes, behavior, or need (see Table 3, p.9). Hence there was a psychological investment in the voluntary innovations that served as a strong underpinning for their institutionalization. The decided absence of opportunistic reasons for change in these schools (i.e., to secure grant monies or to placate a community group) (Berman & McLaughlin, 1978:14), is telling in relationship to the innovations in use.

6. During the subprocess of institutionalization, the most visible impact of the principals was on decisions to retain or drop courses. As was mentioned in the section on mobilization (see p. 7), identifying the less obvious innovations (e.g., teaching methods or styles) where the principals had a definite effect was quite difficult. The same conclusion holds for non-course innovations. Given the roles these men played in their organizations plus the ways in which they were viewed by most of their faculties (see p.18), it seems safe to assume that they were "causal" factors in a high percentage of instances where institutionalization occurred.

Conclusions

This project has resulted in many findings that illustrate the utility of applying the framework of mobilization, implementation, and institutionalization to studying processes of curricular and instructional change. Most of the innovations identified by the research supported the assertions underlying these subprocesses of change, namely that change is rarely a linear movement from one discrete stage to another but instead is usually an intricate, ongoing series of actions and activities. The findings also demonstrate that the emerging concepts in the organizational literature of "garbage can" processes and "loosely coupled" structures are very related to these subprocesses.

The Concerns Based Adoption Model proved to be an effective vehicle through which to gain further understanding of the dynamics of change and innovation associated with mobilization, implementation, and institutionalization. Most of the assumptions underlying the Model were supported by the data. Change at Ten Above and Ten Below was primarily a process rather than an event; change was made primarily by individuals first and then their institutions; change was a highly personal experience.

Teachers emerged from the research as critical actors in the adoption or development of voluntary innovations and in their subsequent implementation and continuation. Change in these schools was very much from the "bottom up" but principals played important roles throughout all three subprocesses, sometimes by being quite proactive in initiating innovation and sometimes by just being supportive and helpful to staff. They were active and assertive people who placed curricular and instructional improvement high on their list of priorities. They choose an administrative style that put them squarely in the mainstream of educationally related activities.

The project portrayed the reality that change and innovation occur within a complex social system where relationships between educators, students, and laypeople and functions such as budgeting, scheduling, and supervision are often

confounding factors to effecting school improvement. Failure to consider these factors and to work with them virtually assures that little voluntary innovation will take place.

Other than two imposed innovations, Basic Competencies and staffings, the bulk of innovations at Ten Above and Ten Below were initiated from within the organizations. There appeared to be little external pressure on them to change. Ruralness in itself did not emerge as a major factor aiding or impeding change. Because this question was pursued only relatively briefly with administrators and staff (the community and students were not studied formally), it is possible that more subtle aspects of ruralness were at work than "met the eye." It is also conceivable that regional high schools like Ten Above and Ten Below are more "distanced" from their constituencies and local environmental forces than are single community high and elementary schools and thus are less vulnerable to external pressures. Whatever the explanation, considerable change had occurred in these schools over a five year period and their current characteristics are a strong indication that they possess the means, inclination, and will to continue to improve the quality of education delivered to the youth they serve. The evidence is clear, however, that such improvement will be incremental rather than radical in flavor; reform rather than revolution will prevail.

"It is frustrating to close on a note of irresolution, of ignorance about probable futures. Yet one thing seems likely: social institutions, like high schools, have changed slowly; in the next generation, they are likely to be more similar to the way they were in the previous generation than they are likely to be different. I say this in neither comfort nor despair but merely in recognition. In truth, fish do not fly, birds do not bark, and dogs do not sing; at least, not in our time." (Ducharme, 1981:29).

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THE FUNCTIONING OF SCHOOL PRINCIPALS IN RELATION TO LARGE-SCALE CHANGE EFFORTS IN THE NETHERLANDS

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THE FUNCTIONING OF SCHOOL PRINCIPALS IN RELATION TO LARGE-SCALE CHANGE EFFORTS IN THE NETHERLANDS

Dr. Rudolf van den Berg*

ABSTRACT:

In the Netherlands, many complex innovations are being placed in large numbers of schools. New strategies are needed to support these wide-scale operations. One important problem is how to meet the needs of teachers and schools involved in change. To find a solution to this problem internal change agents (school principals) and external change agents are being trained in the use of the Concerns-Based Adoption Model (CBAM). This paper reports on a study of the implementation process in primary schools where the innovation was team building, as one aspect of the organizational dimension of the school.

In this study external agents and principals were given CBAM training at the beginning of the school year and were provided information about the teachers in terms of their Stages of Concern and Levels of Use. Data were then collected on the interventions made by the principals using the CBAM concept of interventions. Every two months there were discussions of the interventions with the change agents, conducted by the researchers. Interventions made and their relationship to changes in teachers' Stages of Concern and Levels of Use are presented.

1 INTRODUCTION: THE DEVELOPMENT PROJECTS

1.1 Aims of the development projects

As early as the nineteen-fifties, experiments and projects were started upon whose aim was to integrate infant education (4-6 year olds) with junior education (6-12 year olds). During the sixties and seventies, the idea continued to grow that children should have an uninterrupted process of development between the ages of 4 and 12 years and that the way to achieve this was by a highly individualized and differentiated educational programme. In 1978, the national authority drew up a framework for a number of projects, the so-called development projects.

The purpose of these was to see how this integration of infant and junior schools could be implemented both educationally and organizationally. The framework also provided for the development of school curricula, process elaborations and materials that could be useful to other schools, especially local and regional ones. For the purpose of the project, the primary school had to fulfil four functional requirements:

- internally, its organization and educational design must be developed in a way that would give expression to its own individual concepts but would maintain the existing image of the primary school;

* This report was prepared in collaboration with Jan Arts and Piet Hermeling who are jointly responsible for researching the project.

- its relationship with other schools in the locality must be enthusiastic and outgoing so that experiences and results could be shared;
- wherever possible, the results of the projects should be reflected in the national development of school curricula, tests and counselling models;
- the experience of the experimental primary schools must serve as a guide to the national authorities in the planning of future policy.

It is clear from these functional requirements that the projects would have to include all the schools in its plans for innovation. Not only must it provide guidance in the development of the individual school according to its needs. It must also act as a stimulus to the development of other schools. In the framework of the project, these two aspects are referred to as the impulse function and the motor function. Between 1979 and 1983, a start was made on 153 development projects that covered a wide range of content matter.

1.2 Large-scale strategy and the help requirement in five development projects

The development projects have a number of features that are characteristic of large-scale innovation projects (Van den Berg et al., 1981). Briefly, they are as follows.

Firstly, there is a complex of abstractly-formulated aims which the schools elaborate according to their own context. Secondly, the innovation is introduced in separate phases. The project is allotted a certain period of time per school and it starts with a limited number of schools. Gradually more and more are added. This raises the question of how best to disseminate results, materials and products. Thirdly, and apart from these school-orientated activities, there are external activities in the framework of the so-called impulse and motor function. These extra-school activities are expected to include consultation and collaboration not only between schools but also between them and the change agents. The question then arises of how to co-ordinate the various interventions of schools and change agents. Lastly, the plans cover a long period of time; processes that will

take years to complete. This is because they embrace a bundle of innovations that will have an impact on several different fields of activity.

An additional complicating factor is that the bundle of proposed changes will have a different content for each school. If real changes are to be effected there must be a positive acceptance of interventions. These must be flexible enough to allow for modification to the problems of a particular teacher and a particular school; they must allow teachers to take their own initiatives and to make extensive adjustments of the proposed innovations to suit their own individual situations.

The upshot of all this was that the Catholic Pedagogic Center, one of three national pedagogic centers in the Netherlands, was asked to assist with five development projects. A preliminary examination on our part revealed that, in the matter of team building, the needs, expectations and problems of the school teams in these five projects were somewhat different. Almost all the schools related team building to aspects of educational content. They linked it to open education, world orientation, project education and so on. Typical problems were the functioning of working parties and project groups within the schools and the relationship of these groups to the team as a whole. In some cases there seemed to be a lack of trust. Apart from this there were problems of an organizational nature such as how to coordinate appointments, how to lead a team without assuming an authoritative attitude, how to act upon particular principles, decision making and how to carry certain responsibilities beyond the confines of the class.

In short, the five development projects had problems with the commitment of everyone involved in them. There were also objections from the change agents and the school principals about the form of process guidance practised in their schools. Increasingly they felt the need for systematic help from a national support organization. In the Autumn of 1980 and the Spring of 1981 we held our first meetings to analyze this call for help.

2 THE SUPPORT PROCEDURE

2.1 External support and internal facilitating

There is a wide network of educational guidance services in the Netherlands giving assistance to as many schools as possible in their geographical area, often on a contractual basis. Besides these there are three national pedagogic centers one of whose tasks it is to support members of the regional guidance services. This is done by means of courses, seminars, meetings and on-the-job assistance. People engaged in these services and centers are external change agents. In general it is their task to support and retrain the internal change agents and to design different kinds of support programmes. The internal change agents for their part, are in a better position to further the desired renewals there, on the spot since they are better able to understand developments taking place within the schools. This division of tasks was endorsed by Miles, Fullan and Taylor (1980) in their "State of the art of organization development". Emrick and Peterson (1978) also observed in their study of disseminatory strategies that the strength of external supporters lies in their status of "outsider", "generalist" and "no power to mandate change". Internal change agents work well when dealing with factors which can have either a positive or a negative influence on changes within the school.

In giving our support it was our aim to promote functional co-ordination between external supporters and internal change agents. The external supporters came from the staff of the Catholic Pedagogic Center and the five educational support services participating in this project. The group of internal change agents was made up of school principals. One of the tasks allotted to the people from the Catholic Pedagogic Center was that of designing, implementing and evaluating the course and the accompanying strategy (see par.2.2). This sub-group of external supporters seldom visited the schools. Those from the educational guidance centers, on the other hand, were chiefly engaged in helping the school principals there on the job. For instance, they

had to assist the principals with the feedback of research data to the team members in the school and to describe the interventions (see par.3). In this way they were actually fulfilling an "inside outsider role" (Taylor, 1979, p.128).

2.2 Aims and strategies

The aims of the support given in this project were as follows. The first aim was to give school principals more insight into the possible ways of creating a team taking in consideration the theoretical assumptions of the concerns-based adoption model. Secondly it was the intention to improve the skills of principals in guiding a school team through this process of team building. In particular we wanted to assist the further development of school principals in this respect. With the use of CBAM instruments we hoped to enable school principals to suit their interventions as far as possible to the needs of the teams.

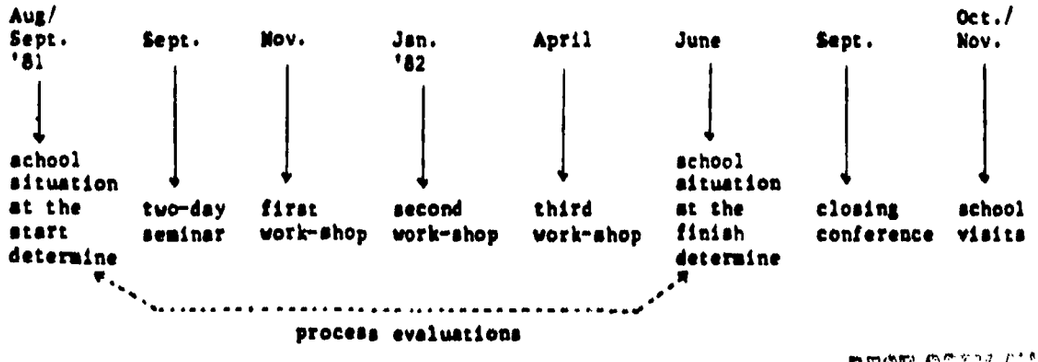
In order to achieve these aims we designed the following strategies. At the beginning of the 1981/82 school year we organized a two-day seminar for the principals of the project schools. In these two days the participants were introduced into the instruments, procedures and techniques of the CBAM. Thus they became familiar with the concept of concern, with the questionnaire "Stages of concern", with the set of instruments used to analyze the levels of use of an innovation and with the "Levels of use of an innovation" chart. In the course of the school year we then organized three workshops in order to exchange experiences and to discuss concrete situations. These discussions were mostly the outcome of feedback of research data that we had collected. This included data from the questionnaire "Stages of concern", from interviews concerning levels of use, and data on the interventions designed by the principals themselves. Here it should be noted that the interview data was doubly analyzed - both quantitively and qualitatively. The quantitive analysis provided us with tables and histograms. With the use of a team building matrix the qualitative analysis indicated what had been said on the subject of team building. Support from the Catholic Pedagogic Center ended with a conference aimed at

finding a follow-up procedure for this project. The participants were given the evaluation data of the end situation from which they were able to get a better insight into how interventions could be planned in the future. They were assured of K.P.C. 'after-care' in the form of a limited number of school visits.

At the beginning of the school year we carried out a preliminary assessment in the schools in order to facilitate the necessary feedback in the workshops. The idea of this was to map out the different school situations regarding general involvement in the process of team building and the use made by everyone of this process. With regard to the feelings, problems and perceptions of the teachers, involvement was measured against the questionnaire "Stages of concern". The way team building was used was analyzed by means of the interviewing instruments "Levels of use of an innovation". This showed the level at which individual teachers were concretely applying and giving substance to the renewal at a given moment. We wanted to know what a teacher does at a particular moment with regard to a particular innovation, meaning in this case, team building.

At the end of the 1981/82 school year the situation was examined once again with the use of the same instruments. The data thus obtained could not only be used for the conference at the end of the year but would also be a useful indication as to a possible increase of team building in the schools. The strategy is illustrated by the following diagram.

Figure 1 Support timetable



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2.3 The feed-back procedure

The first workshop was arranged to take place in November, two months after the two-day seminar. Its main purpose was to supply the school principals and supporters with feed-back based on the start situation (August/September).

A lot of information was obtained from the questionnaire "Stages of concern" and the following details were presented at the workshop: stages of concern referring to the whole group and then to the subdivision of teachers in the lower-level (infant, first and second year junior) and teachers in the upper-level (third to sixth year); stages of concern referring to teachers per school, again sub-divided into lower- and upper-level; and finally, stages of concern referring to the individual teachers in each school.

An analogous procedure was set up to interpret the levels of use. In the first workshop we confined our attention mainly to the distribution of levels throughout the group with sub-divisions of lower- and upper-level. We impressed on the participants the importance of analyzing the levels of use in the lower and upper-level of each school.

Roughly the same feed-back procedure was used at the closing conference in September 1982. The idea behind the subsequent school visits was to enquire more deeply into the different aspects of each school separately, a lot of attention being given for instance, to individual profiles. There was opportunity to explain and discuss interventions that had been planned by the school principals.

To sum up, it can be said that principals as change agents in the project used the feed-back procedure to bring their guidance more into line with the questions, requirements, expectations and situations of the individual teachers in their schools. These latter aspects were examined, tabulated and presented by means of the CBAM instruments.

3 THE INTERVENTION PROCEDURE

3.1 The intervention matrix

Figure 1 shows how our support was timed. It does not show the fact that we had asked the principals to describe their interventions as far as possible and to send to the Catholic Pedagogic Center a weekly report of one or more interventions which they, themselves, regarded as important. There was a special form designed for the purpose (fig.2) on which all kinds of interventions could be reported, from the preparation of a team meeting, for example, to the solution of a conflict. A talk with an individual teacher could also be mentioned. We shall now explain some of the headings on the form.

Figure 2 Form: Description of intervention

School: School principal:

Date: Assistant principal:

Description of intervention:

Detail

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1. Purpose

---

2. Target group

---

3. Nature

---

4. Means

---

5. Frequency

---

6. Relationship to other activities or interventions

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Expl.1 Purpose: This refers to the question of why this intervention related to team building was made. Was it perhaps to give information about some aspect of team building? to help solve one of more organizational problems? to continue the normal process of team building? to promote forms of consultation with others? or to introduce new activities and new conceptions regarding team building?
Expl.2 Target group: This refers to the group to which the activity was directed. Did it concern an infant teacher, the committee, the team as a whole, a particular working party or an individual?
Expl.3 Nature: What was the nature of the activity? Was it a written text, a dialogue, a letter, a telephone conversation etc.?
Expl.4 Means: What means/materials were used in performing the activity? Was it a manual, a brochure, documentation, etc.?
Expl.5: Frequency: How often is the activity repeated? Does it happen once a week, every day or was it an isolated activity?
Expl.6 Relationship with other guiding activities: Is this an unrelated activity? Is it the outcome of other activities? Is it directed towards other activities?

In the desciption of the intervention (at the beginning of the form) mention might be made of one or more aspects of team building. These are: the attitude of the principals, decision-making, joint reponsibility, mutual personal concern, high standards of achievement, effective co-operation and, lastly, capacity to develop policies. These matters do not take on the true character of an intervention unless it is clear: what it (the intervention) is about (content), to whom it is directed (target group), why it is done (purpose), how it is done (form and instruments) and to what it is related (relationship). We tried to show the principals the importance of describing each intervention in the most concrete possible way (especially with regard to purpose and nature of intervention).

On the strength of the foregoing observations we tried to show what are the important factors in the development of an intervention. In the first place it must be related to the specific problems of the teachers or of the team. Are these problems to do with themselves,

with their job of with other people? Secondly, there must be the greatest possible involvement of the teachers themselves. The principal must try to see things from the teachers' point of view. This means that, generally speaking, the interventions can be aimed at giving information, exchanging experiences, taking the plans for the project a step further, carrying out particular activities and evaluating all these aspects.

For this purpose we designed an intervention matrix by which we could systematize and analyze the interventions of the various principals. This matrix is given in figure 3. It was designed with the help of the "Levels of use of an innovation" chart. This chart was designed in the context of the CBAM instruments to be used as an instrument of diagnosis, but we adapted it for our support purposes into a kind of planning instrument for interventions. The chart was intended as an aid for measuring the level at which a teacher functions in the context of a particular renewal and for ascertaining his category within that level. However, it is our opinion (and experience in this project bears it out) that this chart, especially its categories, can well be used as an instrument for planning and designing interventions. We shall now elaborate the various terms of this intervention matrix.

The left-hand column gives the levels (orientation, organization and integration). Naturally every intervention is in principle aimed at 'someone else'. Nevertheless we observe differences in interventions in respect of their nature and point of departure. That is why levels are needed. The level can be determined by filling in the "because sentence". The level of orientation is applicable because orientation is still going on, because we are still in the early stages. The level of organization comes into play especially when problems of tasks and organization form the point of departure. The level of integration applies when the point of departure is the intensification of joint co-operation. What is needed then is more intense co-operation, more harmonization of activities within the schools, more unanimity.

In this framework we have restricted ourselves to the three main components of the levels of use. It would be too much, for the sake of describing interventions, to divide these main components still further into the eight levels of use. It was found that such a specification in this framework was not possible when it was needed for diagnosing an innovation situation. The school principals in particular would not have been able to do it.

Figure 3 The intervention matrix

Aims / Levels	Interventions aimed at Information	Sharing	Planning	Performing	Evaluating
Orientation					
Organization					
Integration					

The categories or aims in this matrix are shown horizontally. The choice of category in which to place a particular intervention should be mainly influenced by the question of its aim. What is the purpose of a particular action or intervent on?

Information

An intervention is placed in this category when the purpose of the action is to provide a team, or a particular group, or an individual teacher with information on matters related to team building. In that case the approach is generally one-sided on the part of the principal: the others do not, or do not sufficiently, understand that particular renewal. This action then is of a voluntary nature; it implies no ob-

ligation. Its purpose is to find out more about aspects of team building.

Sharing

On the basis of all being equally well-informed, ideas are shared and experiences discussed in order e.g. to form opinions. Here, too, there is a certain degree of voluntariness. They can ignore it if they wish. No-one is obliged to take action. This is in contrast to the following categories.

Planning

An intervention is placed in this category when it is obviously concerned with making a plan, deciding on steps to be taken, outlining short and long-term activities, when everything is centered on the preparation and development of activities. In that case there is no question of voluntariness. There is a obligation to act.

Performing

It is not easy to place an intervention in this category. The problem is one of operationalizing and defining. After all, every action and every intervention has to do with execution. For our purposes this category had to do with the results of planning; the execution of planned actions. For example, the taking of a common stand in the face of interference in school affairs by the inspectorate (team building aspect: decision making; category: performing on the level of organization); keeping in touch with a sick teacher (team building aspect: mutual concern aimed at the category: performing on the level of integration).

Evaluating

This is a matter of evaluating and analyzing particular situations (how far are we, how is it going, what are our findings?) One is looking for the strong and the weak aspects of what has been done. In the original chart of "Levels of use of an innovation" the term 'evaluation' was sub-divided into Assessing and Status Reporting. By Assessing we meant examination into the possible or actual use of an innovation. This might be an intuitive guess or it could be based on an actual collection and analysis of results. Status Reporting means the description of an innovation situation at a given moment with ref-

erence to the use being made of it. However, this sub-division created great difficulties for the school principals so we decided to abandon it and to combine the two categories into one, that of Evaluation.

Figure 4 gives some examples of interventions that were described and submitted by school principals.

3.2 Assumptions

There is a similarity between the categories or objectives in this matrix and some of the qualities attached to guidance. Thus we can distinguish three aspects of assistance: the solution-orientated approach i.e. supplying cut-and-dried solutions; the process-orientated approach i.e. trying to find a solution to the problem together with the people concerned; and the development-orientated approach i.e. trying to show people how to solve the problems for themselves. In a previous study (Van den Berg and Vandenberghe, 1981, p.301-304) we have discussed these aspects of assistance in more depth than we shall do now.

We suggest the following activities as examples of the solution-orientated approach; giving information, preparing courses and taking part in discussions with a view to exchanging information. Activities related to the process-orientated approach are e.g. deciding on a strategy for the project, giving advice as to the formation of a working party, supervising the process at school level and acting as discussion leader at meetings. The development-orientated approach includes e.g. stimulating people to examine their own situation, making an evaluation and acting upon it to find alternatives and to suppply feed back.

The activities linked to the solution-orientated approach correspond approximately to the categories: Information and Sharing. Those linked to the process-orientated approach correspond roughly to the categories: Planning and Performing. The development-orientated approach relates to activities that conform to a very large extent with the categories: Assessing and Status Reporting. These categories are naturally assumed in each of the different approaches. Thus a devel-

Figure 4 Examples of interventions related to the objectives in the three different levels

Objectives / Levels	Information	Sharing	Planning	Performing	Evaluating
Orientation	Making a suggestion that will lead to good communications based on literature for circulation	Instigating, with others, forms of consultation in order to bring forward ideas on team building	Small-group discussion of how best to give the team feedback on profiles of concern	Telling the team members to reflect on what they mean by team building	Diagnosing the stages of concern of members of a working party in the proces of being set up
Organization	Giving the widest possible circulation to school communications in consultation with the working party that produced them	Taking part in a discussion aimed at clarifying the principal's point of view on joint responsibility for particular tasks	Preparing a team meeting in order to assess difficulties experienced by the working parties	Advising a working party whose members feel overtaxed	Taking part in a group discussion with three team members to find out what is obstructing their work as a team
Integration	Informing the team about the methods followed by other schools in the project	Intensifying contact with the Inspectorate with a view to the sharing of experiences with other schools	Making an appointment with a team leader from another school to visit each others' schools and let the team see other approaches to renewal	Attending the meetings of the steering group seen as project leader in order to expedite progress	Carrying on discussions with all the team members with a view to stimulatin their concern in the project

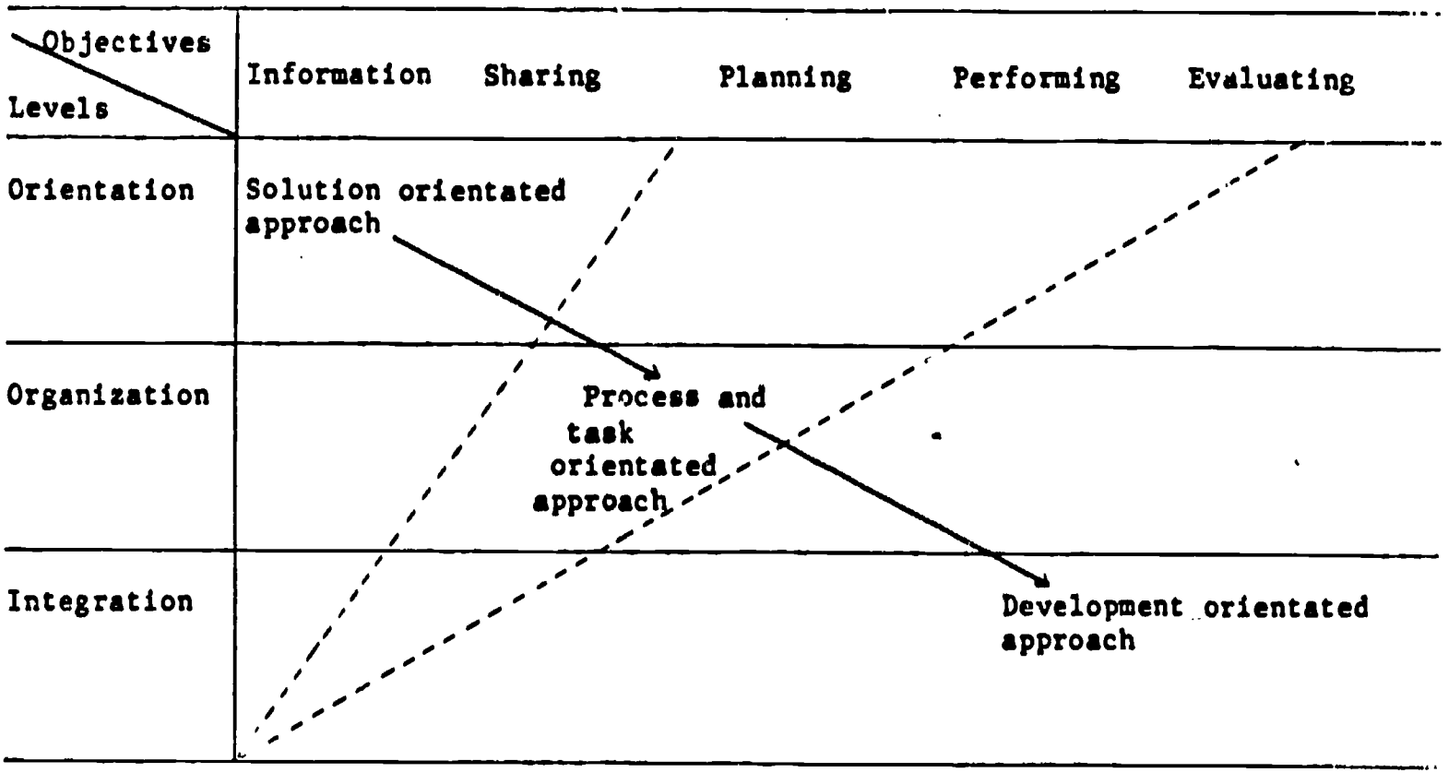
opment-orientated approach will include activities like giving information and exchanging particulars. However, these activities are here in an entirely different perspective than that of the solution-orientated approach.

Our selection of these three methods of approach was recently supported by the results of a research into principals' interventions carried out by Hall, Rutherford and Griffin (1982). Their findings were confirmed by a research of the MAVO project (Kwantes & Rohde, 1982). This distinguishes three types of change agents. The first is engaged in short-term activities like preparing meetings and answering all kinds of questions. These activities are analogous to our level of orientation with emphasis on the objectives Information and Sharing. The second type of change agent is distinctly task-orientated and his activities are of a routine, regularly recurring nature. This is analogous to our level of organization with emphasis on the objectives Planning and Performing. Finally there are the change agents who have the vision to direct their activities to long-term developments and whom Kwantes and Rohde call school organization developers. Their activities embrace things like: making up a long-term plan of action, coordinating the development of different sections of a plan and evaluating project activities. This is comparable to our level of integration with emphasis on the objectives Performing and Evaluating. We have given a diagram of these assumptions in Figure 5. We thought it would be useful to describe and analyze the interventions of principals by putting them into the appropriate cells of this intervention matrix. This gives us an insight into the options available to principals in their work as change agents. Figure 5 shows a shift from solution orientated categories to development orientated categories.

By using the intervention matrix in this way we hope to find out how the different principals' interventions will develop in the course of the project. Do they develop systematically e.g. according to the assumptions described? Is there any particular connection between successive interventions? Did the various workshops that we organized turn out to be breaking points? Have there been important changes in the development of the interventions? And to what extent are the in-

terventions, both individually and with each other, designed with a view to the actual difficulties and problems that teachers have to face? These questions will be dealt with in the research section of this project. The data collected with the use of the CBAM instruments will be analyzed in relation to the nature and number of the interventions.

Figure 5 The intervention matrix linked to three aspects of assistance



4 EVALUATION OF PRINCIPAL's INTERVENTIONS

4.1 Procedure and questions for consideration

It was our intention to see how the CBAM instruments could be used in the project to plan and analyze interventions concerning organization development. Could these instruments be of any valuable assistance to principals in designing interventions aimed at both the individual teacher and at the team as a whole? An added difficulty was the large-scale character of this innovation both in respect of content and nature but also of its purpose and the way it was implemented.
We define the CBAM instruments as:

- the questionnaire 'Stages of concern' and the interview for determining levels of use;
- the procedures for determining the configurations;
- the procedures for determining the interventions.

The following questions formed the framework for the various evaluatory activities:

Research section A:

- What are the feelings, needs and expectations of these schools (individual teachers and teams) with regard to team building at the beginning and at the end of this course and to the support provided?
- What levels of team building (levels of use) were reached at the beginning and end of this course and what support was given?

Research section B:

- What configurations and developments in respect of team building can be identified in each development project?
- How can these configurations be validated?

Research section C:

- What interventions are developed and described by principals with regard to team building after data feed back using the diagnosis information?
- How did these interventions develop during the course and with the support given?

Were the interventions well-chosen in respect of the concerns shown by team members and the levels and also in the light of the configurations?

In the following paragraphs we shall confine ourselves to the third research section. We are particularly interested in possible differences between the various development projects and the relationship between the interventions and the concerns shown by team members. In this framework only a few data can be presented and very briefly discussed. The procedure used was as follows. We have already defined the intervention matrix as a means whereby school principals can describe their interventions. We wanted to use the same matrix for a systematic analysis of these interventions and it was important that this analysis should be reliable and valid. How, then, must the interventions be inserted in the matrix? In the first place this was done according to the definition of the levels and the categories or objectives (see par.3.1). However, these definitions were not exhaustive enough for the procedure to be regarded as valid. Secondly, we turned to the definitions of the categories in the original chart 'Levels of use of innovation'. This we found more useful, especially for the category Performing. In principle, this chart provided us with 48 definitions spread over the eight levels of use. This did not include the category of Knowledge which was not considered suitable for developing and describing the interventions. Lastly, the results of the analytic procedure were discussed and evaluated by the principals who had developed and described the interventions. Here we were deliberately introducing the 'member checks' method. Guba (1981) regards this method as a way to increase the validity of the research. It must, however, be applied before the definite report is made.

4.2 Some provisional results of the analysis

4.2.1 The total group

Table 1 gives the interventions for the total group in percentages.

Table 1

Interventions for the total group in percentages (n=236)

	Information	Sharing	Planning	Performing	Evaluating	N%
Orientation	2		1	1		4
Organization	3	19	16	10	8	56
Integration	3	1	7	8	21	40
N%	8	20	24	19	29	100

The first thing that this table shows is that few interventions were developed by principals on the level of orientation (4%). No doubt this has to do with the idea held by principals that the schools have already, in previous years, become orientated to the subject of team building.

Next, the table shows that more than half of the interventions are on the level of organization (56%). Further analysis reveals that this number is mostly a reflection of three of the five development projects.

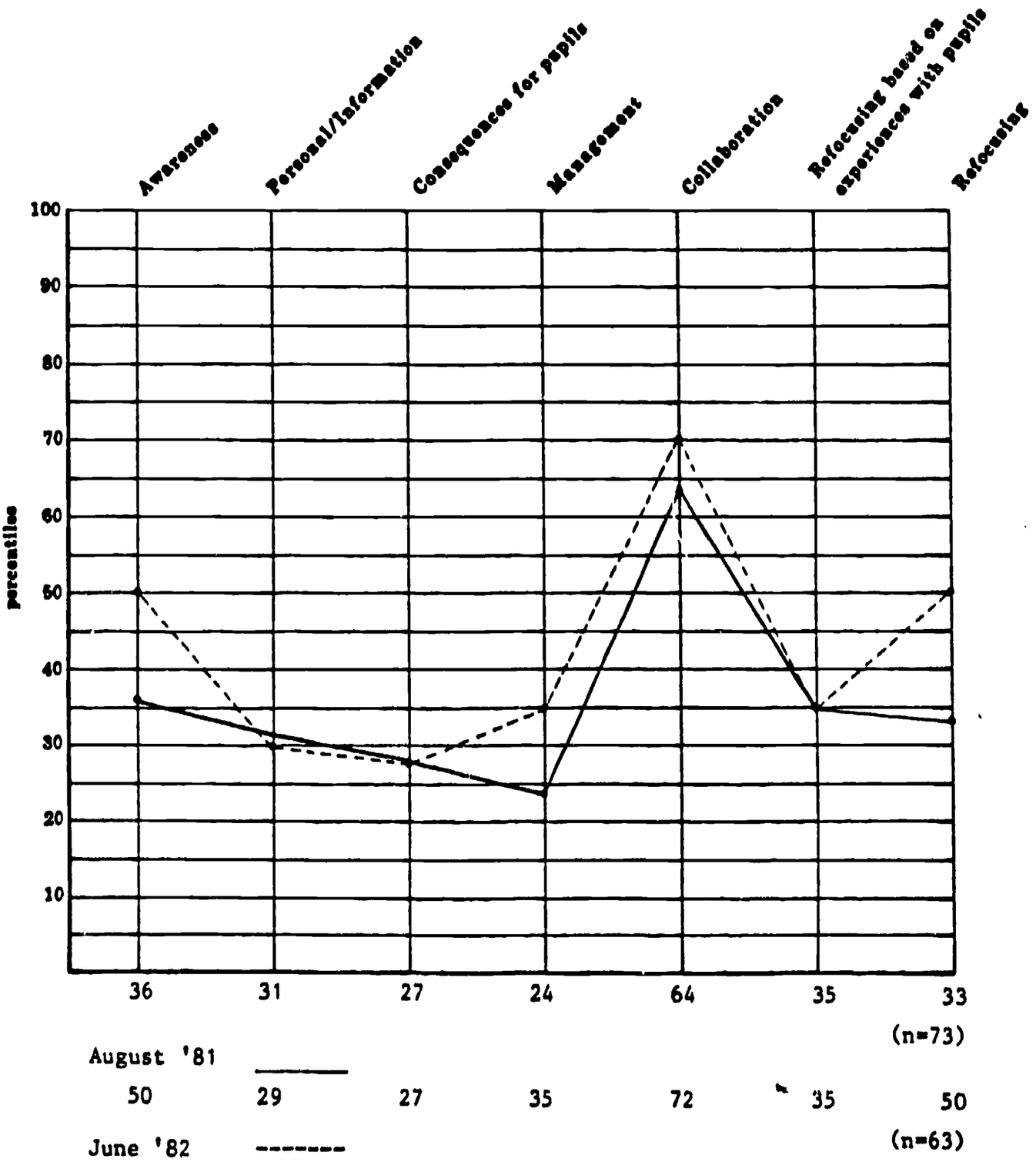
The largest number of interventions was aimed at the objectives of Evaluating (29%) and Planning (24%); very few of them at Information.

If we compare this table of interventions with the stages of concern for the whole group of teachers (see fig.6) we note the following. Without going too deeply into the two profiles in figure 6 we notice at once differences on the stages of Awareness and of Refocusing. Both stages showed a substantially higher score at the second time. Analysis of other data shows that the group as a whole applied itself more deliberately to aspects of team building. Through

team meetings and regular discussions the subject gradually began to acquire more significance. People started to think about their own responsibilities, possible repercussions on their own particular task etc. Furthermore, pressure of work, complexity of the changes and new job allocations, especially at the end of the school year which was when the second count was taken, had a quite significant effect.

A comparison of the two profiles in fig.6 with the interventions of the whole group of principals shows that, in spite of an increase in Awareness and Refocusing, nearly half of the interventions (40%) were on the level of integration. This led us to question the aptness of the interventions with regard to the teachers' situations as expressed in the profiles. Thus there is a large number of evaluation interventions on the level of integration (21%). We analyzed this point further in our interpretation of the data on the separate development projects.

Figure 6 Stages of Concern Profiles for the whole group of teachers over one year



4.2.2 Some results from two development projects

a) The 'Vuurdoorn' development project (fictitious names were used for the sake of confidentiality)

A survey of interventions by principals in this project is given in table 2.

Table 2

Interventions for the 'Vuurdoorn' primary school in percentages (n=84)

	Information	Sharing	Planning	Performing	Evaluating	N%
Orientation	2,5			1		3,5
Organization	4	35	8	13	13	73
Integration	8	2,5	1	11	1	23,5
N%	14,5	37,5	9	25	14	100

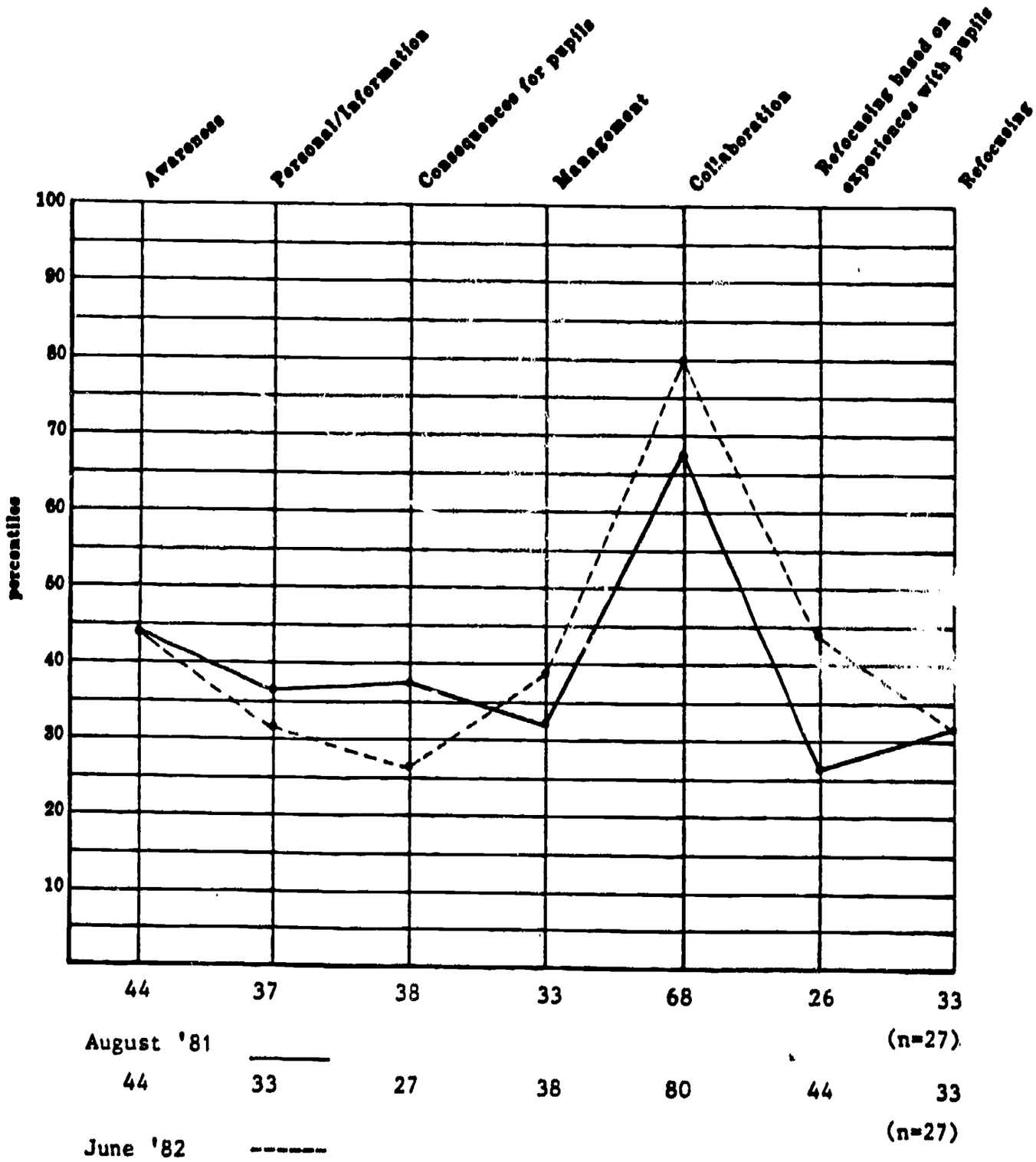
It appears that few interventions were developed and described by principals on the level of orientation (3,5%). Most of them were on the level of organization (73%). Most of the interventions on this level were aimed at the objective of Sharing (35%). The objective of Evaluation was also strongly represented on this level (13%).

Figure 7 gives the stages of concern for teachers in this development project as shown by the first and second count. It is noticeable that in this school there is no increase in the stages of Awareness and of Refocusing - this in contrast to the profile of the whole group. The members of the team are gradually beginning to care more

and more about their colleagues and pupils (the so-called concern for others). There are significant differences (5%-level) in the stages of Collaboration and Refocusing based on experiences with pupils. There is a striking increase in the score for Refocusing based on experiences with pupils, especially in the lower grades as is shown by other data. This we take to indicate a growing realization on the part of the team of the necessity to take account of experiences with, and reactions from, pupils in the process of team building. The following development project gives us quite a different picture.

The fact that these are users' profiles is, in our opinion, due to the concentration and even distribution of the interventions on the level of organization. Further analysis shows that, even at users' level, there is a regular return to the level of organization. This is indicated by an analysis of the order in which principals submitted their interventions.

Figure 7 Stages of Concern Profiles for the 'Vuurdoorn' primary school over one year



b) The 'Korhoen' development project

The interventions in this development project are given in table 3.

Table 3
Interventions for the 'Korhoen' primary school in percentages
(n=40)

	Information Sharing	Planning	Performing	Evaluating	N%
Orientation					
Organization	27,5	2,5	7,5	2,5	40
Integration			10	50	60
N%	27,5	2,5	17,5	52,5	100

Again, in this project, we see that there were no interventions on the level of orientation. Most of the interventions were on the level of integration (60%) and a great many concerned the objective of Evaluation on the level of integration (50%). The content analysis shows that these interventions were mainly to do with mutual personal concern as an aspect of team building (the interest people have for one another). Many interventions were towards one particular team member. There were no interventions in sharing and in planning on the level of integration.

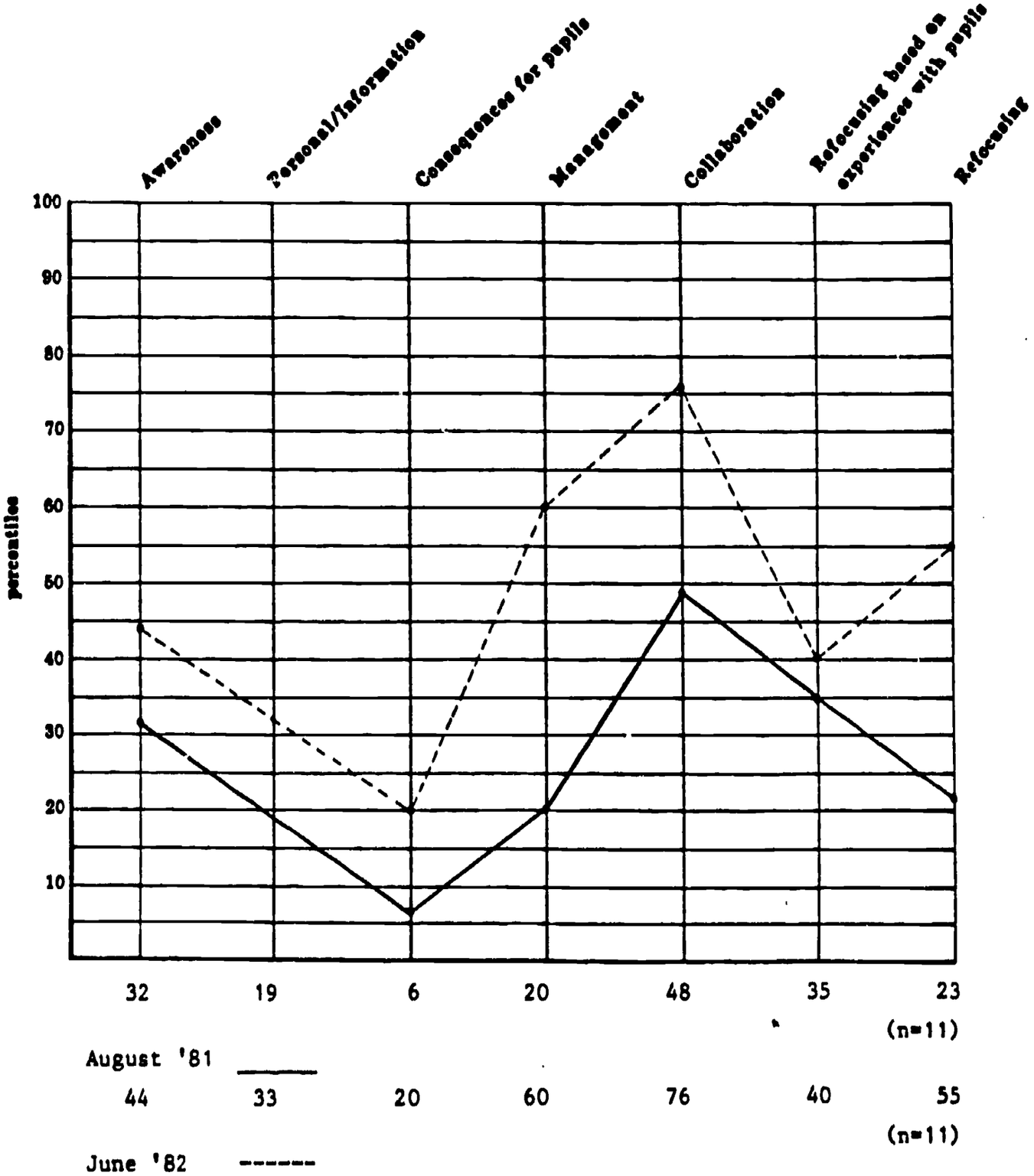
The large number of interventions aimed at Evaluation on the level of integration and with the aspect of mutual personal concern might well indicate a special kind of guidance on the part of the principals. They were aimed at one specific problem which arose at a particular moment. There was obviously a desire to be emotionally in-

volved with team building and they might be regarded as "situation determined" interventions.

Figure 8 gives the two profiles of the teachers involved in this development project, first and second time. These show a big increase in the second count in difficulties concerning tasks. This is reflected by a much bigger score at the Management stage. There were also relatively high scores in Collaboration and Refocusing. An examination of the differences between the first and second count shows that the difference at the Consequences for pupils stage was significant at 5% level, those at the Management and Refocusing stages significant at 1% and that at the Collaboration stage significant at 10%.

If we compare these profiles with the survey of interventions we might wonder whether the interventions were sufficiently in accordance with the needs of the team. People were obviously looking for a solution to the problems confronting them in their daily practice (see e.g. the high score in the second time at the Management stage). However, the guidance was quite definitely aimed at evaluation of individual problems. Problems connected with team building were treated by the principals in an emotive way and were often discussed individually. This, in our opinion, could give rise to tensions and difficulties that might hinder solution of the task problems and lead to further requests for revision.

Figure 8 Stages of Concern Profiles for the "Korhoen' primary school over one year



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Conclusion

It is obvious that the aims of the interventions in these two development projects were quite different. By relating these interventions (e.g.) to the stages of concern of the different teams, we could see the extent to which they accorded with the needs and worries of these teams. This must not lead us to conclude that the interventions of one project were better than those of the other project. They are of a different nature but must be interpreted in relation to the other research data. In the foregoing observations we have restricted ourselves to the stages of concern and have not dealt with the rest of our findings such as the levels of use and the configurations.

In a further more extensive report we hope to deal more thoroughly with the role of school principals in large-scale innovations. We shall be able to show more clearly how the different aspects of the concerns-based adoption model can be applied to processes in the development of school organization and to team building in particular. In the same report we can also give a more detailed description of the connection that exists between the concerns of school teams and the interventions of school principals. We hope that all this information will eventually form the basis of a contribution to the creation of a practical theory of educational renewal with particular reference to the part played by school principals.

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