

This question is part of a comprehensive study into the curriculum conference method, in which curriculum conference activities are evaluated.

This question on curriculum deliberation consists of a content and a process component, for there is a difference between the *what* (the reasons) on which curriculum content decisions are based, and the *how* (the process) by which these decisions are reached. Both components are elaborated in this chapter.

### Research Design

The case study research design is appropriate in our study. This design allows us to choose a mixture of quantitative and qualitative research methods. Yin (1989) states that case studies are particularly appropriate in situations in which the researcher has no control over behavioral events, and the focus is on contemporary events. Although there was some control over the way in which curriculum conferences were planned, there was no control over the curriculum content justification behavior of stakeholding parties and participants. And the focus was clearly on contemporary events, as the results of the curriculum projects were embedded in curriculum reality. Yin (1989, 23) defines a case study as:

- an empirical inquiry that:
  - investigates a contemporary phenomenon within its real-life context; when
  - the boundaries between phenomenon and context are not clearly evident; and
  - multiple sources of evidence are used.

All elements of this definition are appropriate in our situation. Our study is empirical in the sense that quantitative and qualitative data are collected in reality, and it is aimed at analyzing problems in actual curriculum work. The boundaries between information, context, and consensus, on the one hand, and the curriculum field, the institutional context, and personal characteristics from those involved in the case studies on the other hand, are diffuse. And multiple information sources are used during the different stages of the curriculum conferences.

Case studies do have their own logic. As is obvious, the findings of one case study are hard to generalize to other situations, because the very nature of a case study is that it is situation specific, and that it deals with the particular rather than the general. Hence a whole other approach than the traditional sampling logic, or the

statistical generalization logic, is needed—replication logic for multiple-case studies (Yin, 1989). Several projects were carried out, and in some of these projects curriculum conferences were organized according to the adapted model described earlier in this chapter. This series of projects lends itself to the multiple-case study design, in so far as the cases were aimed at establishing consensus on curriculum content by a front-end analysis of the situation in the curriculum field, documenting the resulting information, intensive preparation for the curriculum conference, deliberation during the curriculum conference, and approval and coding content items for the curriculum.

*Replication logic* means that the findings on the research questions in the first case are used to compare with findings on similar research questions in the next case to find similar patterns. In our situation this means that (a) achieving consensus on curriculum content, (b) finding that information and deliberation are important components of the curriculum conference method for establishing consensus, (c) finding evidence of stability of convergence of curriculum content preferences, and (d) correspondence on approval of the curriculum content between curriculum conference participants and other members of the population of stake-holders, in the first case, may be confirmed in the second. This type of generalization may be referred to as cross-case study generalization.

Cases can be selected to allow generalization within the broad field of (postsecondary) vocational education, and to a wide range of curriculum domains in these fields. Or cases can be selected according to strict criteria, thus maximizing confirmability of the theoretical expectations, but limiting the generalization space. The same is true for variation in the "treatment," the curriculum conference approach itself. Variation is possible with respect to front-end analysis strategies, the curriculum conference length, and group composition. Our option is to follow the general approach, which accounts for variation with respect to the variables just mentioned.

### Case Selection

During the past ten years several curriculum conferences have been organized: this set of curriculum conferences may be seen as the population of projects from which cases can be selected for the purpose of this study. Curriculum conferences were organized, among others, in Germany, Switzerland, and the Netherlands. However, there was access to a subset of Dutch cases only, because of the documentation that is available of these cases. The four cases considered here are:

- basic skills in vocational education: BME and BOS cases (Nijhof and Mulder, 1986);
- office automation BEV case (Mulder and Van Lent, 1988);
- production technology: PRA case (Mulder, 1988).

Curriculum conferences can be organized for whatever kind of subsystem in education and training, and there are no restrictions as to the subjects for which curriculum content is justified. The context in which the curriculum conference method is used of course calls for accommodation in the front-end analysis. In general education programs little or no attention is paid to job oriented information, whereas this information is crucial in vocational education or training programs. In employment training programs special attention will be paid to employment opportunities for the training program. Furthermore in industrial and employment training programs the school pedagogical component is lacking.

Variation across the cases was allowed with respect to curriculum domain, educational sector, curriculum conference length, number of curriculum conference participants, and front-end analysis components. The variation with respect to these variables across these projects is listed in Table 7.1.

Different approaches may be followed in the front-end analyses that preceded the curriculum conferences to reveal controversial issues that would have consequences for curriculum content justification. Extensive analyses of the literature, and data from representatives of stakeholding groups, such as service agencies, associations, schools, and business and industry can be carried out in this respect. Each case has its own conditions to adopt front-end analysis strategies, and the adoption and implementation of these strategies may vary, as long as the results show the differing opinions in the curriculum field in question.

The BME, BOS, BEV, and PRA cases can be divided in two sets: the first set of the BME and BOS case studies, in which curriculum conferences were organized in 1985, and the second set of the BEV and PRA cases with curriculum conferences in 1987. So there are two sets of two cases, of which the cases within both sets were parallel. The first two cases were planned according to the adapted version of the curriculum conference method described earlier in this chapter. Realization of the curriculum conferences in these cases was evaluated within and across these cases. The second two cases were planned after the evaluation of the realization of the first two cases. This longitudinal approach enabled us to specify the heuristics of the adapted curriculum conference method if that appeared to be necessary.

TABLE 7.1  
Characteristics of Cases Studies

Commissioner of projects	Curriculum domain	Educational sector	Dates	Acronym	CC length (in days)	Group size (in persons)	Front-end analysis strategies*
SVO	Mechanical Engineering	Secondary vocational education (senior level)	Sept. 12-13, 1985	BME	2	14	1, 2, 3
SVO	Office and sales practice	Secondary vocational education (junior level)	Sept. 17-20, 1985	BOS	2	12	1, 3, 4, 5
STEVA	Office technology	Post-secondary senior vocational training	Jan. 7-9, 1987	BEV	3	14	4, 5, 7
SVO	Production technology	Senior secondary vocational education	March 19-20, 1987	PRA	2	15	1, 2, 3, 4, 5, 6, 7

\*Meaning of codes for front-end analysis strategies

1 = interviews with representatives of business and industry

2 = survey in educational institutions (teachers)

3 = curriculum analysis

4 = interviews with representatives of educational or training institutes

5 = graduates' research

6 = job analysis

7 = literature analysis (desk research)

8 = interviews with experts on employment policy

9 = advertisement analysis



The context of the cases was comparable. Commissioners of the projects wanted to know the desired curriculum content for a given curriculum, they wanted to consult diverse stakeholding parties, and they wanted to create a platform of acceptance.

**Tasks by Cases**

The main tasks that were planned in the cases were aimed at performing front-end analysis (F) that resulted in information documents that were used to prepare the curriculum conferences, the curriculum conference (C) itself, the evaluation of the curriculum conferences (E), and the writing of case reports (R).

Front-end analyses were planned to last 7 to 9 months. The exact dates on which the curriculum conferences were planned were for BME September 12 and 13, 1985; for BOS September 19 and 20, 1985; for BEV January 16, 1987; and for PRA March 19 and 20, 1987. Evaluations were planned to take about 3 months, and writing (and publishing) the case reports were planned to take 5 to 8 months.

**Recapitulation**

Finally the structure of the design of this study is recapitulated, as a variant of the general cases study design (see Figure 7.2).

According to Yin (1989) there are three main stages in the case study method: the design stage, the single-case data collection and analysis, and the cross case analysis. All stages are performed in this study, and they are depicted in Figure 7.2.

**Instrumentation**

Earlier in this chapter a distinction was made between the content and process component of curriculum deliberation. For reasons of clarity, both components are treated separately in the study. We understand, however, that both components are related to each other and perhaps even interact.

With respect to deliberation content analysis, Walker (1975) developed a "System for Analyzing Curriculum Deliberations," a three-tiered system of analysis categories. The three tiers are:

- the *macroscopic* analysis: this consists of determining deliberative episodes in the transcripts; Walker distinguishes issues, explicitations, reports, and brainstorming;
- the *microscopic* analysis: this consists of determining deliberative moves in the transcripts; Walker distinguishes pro-

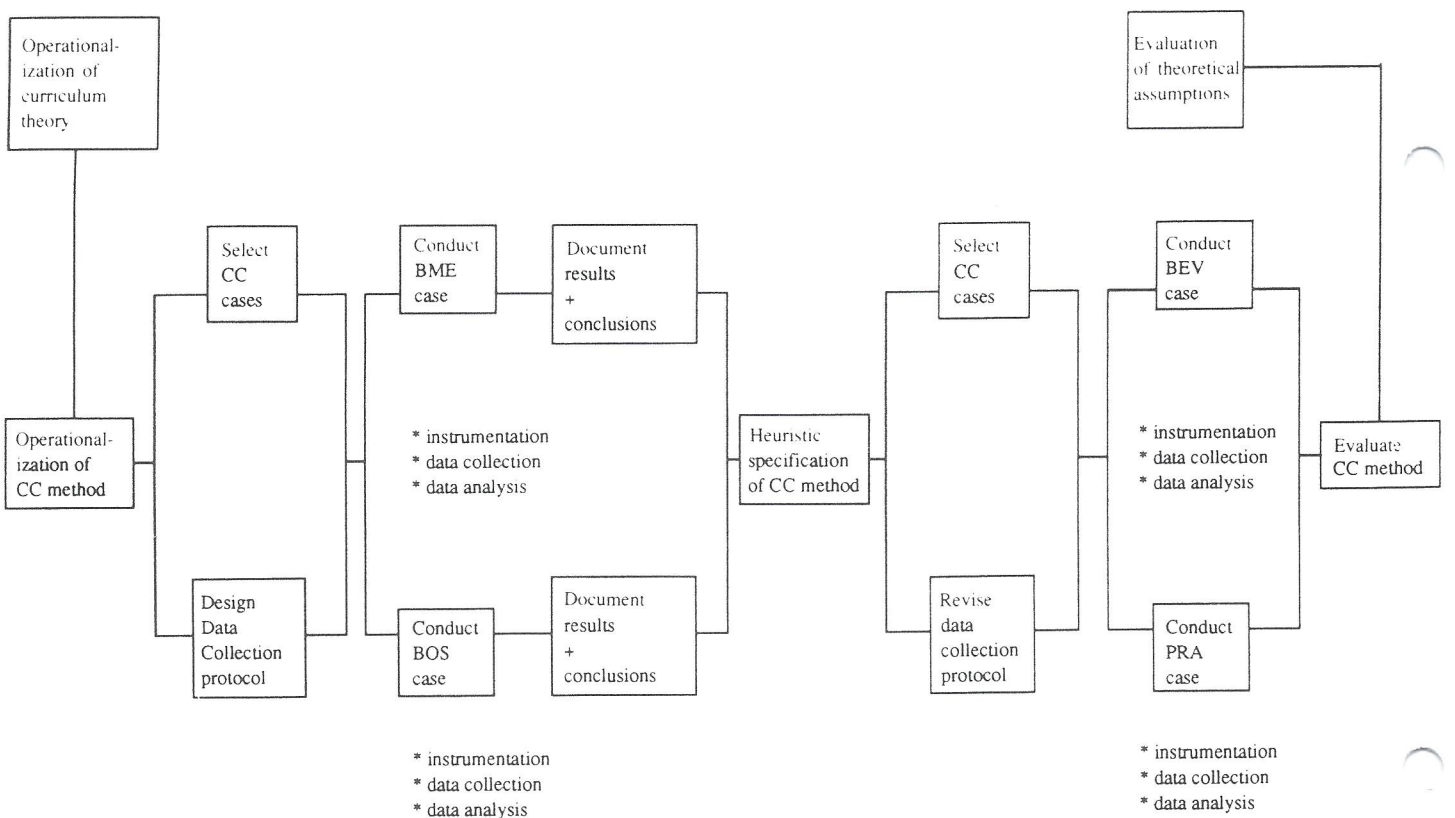


FIGURE 7.2 Schematic representation of the design of this study (after Yin, 1989).

posals, arguments for, arguments against, clarifications, instances, and other deliberative moves:

- the *category* systems: this consists of two further analyses of the deliberative moves that are identified in tier 2:
  - a. what are the data sources: are the data observational or judgmental, first-hand or reported, external or internal, purposeful or incidental?
  - b. what are the subjects of data: are they internal matters, such as staff members, curriculum strategies, curriculum material, objectives, conceptual framework, resources; or external matters, such as students, teachers, schools, society, subject matter, resources?

The analysis categories in the first two tiers are partially useful in our study: the analysis categories in the third tier are less appropriate in our situation, as these are aimed at challenging the scientific-rational approach of "curriculum development. As the objective is to analyze the way in which consensus is established on curriculum content, some different categories are needed in which the focus is on decision making. One important additional category that emerges from the conceptual framework is "conclusions."

Using Walker's approach for the analysis at the first tier, the content component of curriculum deliberation transcripts are first of all divided into episodes. Next these sections of transcripts are analyzed at two subsequent levels. The unit of analysis is the line in the transcript. For each line analysis will determine the person who is talking, the person's position in the curriculum conference, the deliberate move, and if the deliberate move is an argument, the argument type, and if the deliberate move is a conclusion, the conclusion type. In schematic form:

- *person talking*
- *person's position*:
  1. chair
  2. supervisor
  3. subject matter expert
  4. researcher
  5. representative from business and industry
  6. representative from education
- *deliberative move*:
  1. problem: opening of an issue
  2. proposal: "I suggest . . ." propositions

3. opinion: "I think . . ." propositions
4. argument: "Because . . ." propositions
5. conclusion: "So . . ." propositions
6. other

- *argument type*:

1. students: "Students of this curriculum . . ."
2. teachers: "Teachers of this curriculum . . ."
3. subject matter: the subject at stake
4. society: e.g., performance requirements
5. educational policy (national)
6. resources: budget, equipment, lesson hours
7. other

- *conclusion type*

1. based on arguments
2. based on opinions
3. based on proposal
4. based on problem
5. basis unclear

At the first level of analysis, first of all the person who is talking is identified, as well as the position of this person, as different people play a different role in curriculum conferences. Next the deliberative moves are identified. Within this category first of all *problems* are distinguished. This is the category with which deliberation on curriculum content begins. Participants may have questions about the information document, or questions about the curriculum content, and raise these questions. The same person or others may come up with one or more *proposals* for the solution of the problem. Different *opinions* may be brought forward on the proposals, and these opinions may be based on *arguments* for or against the proposal. Finally the group reaches a *conclusion* on the problem stated.

Good deliberation is characterized by profound and balanced argumentation and conclusion drawing. Therefore the argument and conclusion types are categorized to identify whether the curriculum conferences meet this requirement.

For the analysis of the process component, the existing data set of earlier evaluations of the curriculum conferences was analyzed. A selection was made of the data that pertain to the following variables:

- *satisfaction with the deliberation process*: this was measured with a 5-point Likert-type scale consisting of the fol-



- *role performance by persons involved*: the chairperson (attaining the objectives of the curriculum conference, stimulating the discussion, realizing decision making, realizing an informal and comfortable atmosphere, stimulating interest, summarizing, time control, clarifying concepts, stimulating opinions and reasons, and formulating conclusions), the experts (relevance, usefulness, and information), and the project team members (relevance, usefulness, and information): the value on all these items is determined with 4-point Likert-type scales (1 = positive; 4 = negative);
- *appreciation of curriculum conference program components* of information document analysis, and discussions (the directness, understandability and motivation of opinions, and the absence of manipulation), determined with 4-point Likert-type scale questions;
- *sharing opinions*, determined with a Likert-scale-type question;
- *participation in decision making*, also determined with a Likert-scale-type question.

#### Data Collection

Content analysis of the deliberation has to be performed on only a sample of the transcripts, because analysis of all material is not feasible. The transcripts of the four cases together exceed 800 pages of text, amounting to 32,600 lines of text, equaling about 2,200 minutes of verbal interaction during the curriculum conference sessions. A sample of 160 minutes of transcripts would suffice for the purpose of the deliberation analysis. Random sampling of lines of transcripts is of course not meaningful, because the meaning of the deliberation would get lost, and hence the interpretation of the deliberation would become impossible. Therefore whole episodes should be selected. Random sampling of episodes would create the chance that irrelevant episodes would be sampled, such as the project introduction, the introduction of participants, or the evaluation of the curriculum conference. The relevant episodes of the transcripts are those in which the information document is discussed and decisions are being made with respect to the curriculum content items. So there are two relevant strata in the curriculum conference transcripts: discussion sessions, and decision-making sessions. Random sampling of episodes within

these strata would again cause selection bias. So it seems that the middle stages of the sessions are most appropriate to analyze. For instance, the beginning and closing of decision-making sessions differ across cases, but the middle sections are the same: decisions are made about the importance and taxonomic classification of curriculum content items.

A sample of about 160 minutes would imply sample sections of 20 minutes each for each curriculum conference by discussion and decision making. Taking the middle of the discussion and decision-making section as the reference point, eight sample sections were drawn. Two independent analysis coded the lines in the sample sections of the transcripts. For the process component an existing dataset of evaluations of curriculum conferences was used. These evaluations are based on a questionnaire completed by the participants within two weeks after the curriculum conference.

#### Data Analysis

Frequency distributions of the lines in the transcripts by deliberative move, argument type, and conclusion type were analyzed. The data on deliberative moves, argument types, and conclusion types were analyzed by curriculum conference, sample section type (discussion and decision making), person, and person's position. Aggregation of the data on the content component of the deliberation analysis to evaluate this model component was performed by determining the reasoning ratio (RR). This is the ratio of conclusions that are based on arguments pro or contra the given opinions, to all conclusions that were approved during issues in the sample sections of the transcript. Deliberation is expected to be of good quality if the RR equals to or is greater than .50.

The data on the process component were analyzed by variable, and a cross-curriculum conference comparison was performed. Furthermore a process profile was determined by curriculum conference. This profile is made up of the scores on (a) psychosocial satisfaction with the deliberation process, (b) perceived role performance of the persons involved, (c) appreciation of major program components, (d) sharing of opinions, and (e) opportunity to participate in decision making. The values of these variables are translated into factors with a positive, neutral, and negative value; the curriculum deliberation process is regarded to be positive if four out of five of the different factors are positive.

The following two major sections of this chapter report the analysis of these deliberations, first for their *content*, then for their *process*.



### THE CONTENT OF DELIBERATION

In this section the results of the content component of the deliberation analysis will be presented, but first the analysis procedure and the reliability of the data will be described.

#### Training of Analysts

Two students of the Department of Education were trained for the deliberation analysis. This training took one day. It began with an explanation of all the basic terminology of the curriculum conference components (curriculum conference, information document, sample section, issue, technology in mechanical engineering, production technology, office automation), the curriculum conference code list, and the participants' code list (with the different categories of participants). The information document of the BME was provided to show an example of the curriculum conference program, the information that was available for the participants of a curriculum conference, and the curriculum content list.

Subsequently, the analysts were asked to transcribe 5 minutes of a curriculum conference. The objective of this assignment was to increase the sensitivity of the analysts to the complexity of the verbal interaction, and to explain the nature of the transcriptions. Problems that the analysts encountered are:

- some parts of the section were difficult to understand;
- some parts of the recording were too low in volume;
- in normal speech many sentences are not finished;
- in some parts of the discussion the structure is lacking;
- some people are talking simultaneously, but participants (as well as the speakers) seem to understand what both speakers say;
- some speakers think aloud.

Both analysts learned that transcribing the material together provided the opportunity to correct misinterpretations of each other.

Next the meaning of the deliberation analysis protocol, the analysis categories, the coding form, and the taxonomic scoring procedure were explained. With these instructions, the analysts were asked to analyze five illustrative sections of transcripts, about seven pages altogether. The training material was taken from the curriculum conference transcriptions, but did not overlap the sample sections for the final analysis. This analysis was evaluated, and the following was found:

- the difference between an opinion and an argument, the argument types, as well as the conclusion types, appeared to be difficult;
- there are more categories of conclusions: there are people who draw intermediate conclusions on their own propositions that are not related to the problem stated earlier;
- when a problem is stated, speakers send messages that fall into all kinds of categories;
- a proposal can be about the order of the discussion;
- the difference between a proposal and a conclusion is sometimes difficult;
- due to lack of context and subject matter information, the interpretation of the example sections appeared to be difficult.

These findings made additional specifications for the deliberation and further training necessary. The arrangements made are:

- intermediate conclusions on one's own propositions, which are not related to the problem stated earlier, are meant to underline the speaker's message; therefore these "conclusions" are coded as the previous message;
- when a problem is stated, and speakers send messages that fall into all kinds of categories, these messages are meant to explain the issue and are therefore all coded as a problem;
- if a proposal is about the order of the discussion, it is coded as "other," as its content is not related to the issue;
- if a proposal can be formulated as a tentative conclusion and be stated in a question, and no further discussion is following this proposal, it is coded as a conclusion;
- lack of context and subject matter information was compensated by explanations by the researcher.

Next, four sample sections of six pages were analyzed. The scoring was less problematic, and more correspondence between the analysts resulted. The precise amount of correspondence was not noted, however, because ongoing intensive discussions took place about the interpretation of the material that had to be coded, and the coding that was appropriate according to both analysts. During the discussions it was found that consensus about the coding was possible, which strengthened the faith in the coding categories. It was agreed that the coding of the real sample sections of the transcripts would follow the following format: (a) individual scoring, (b)



discussion about the interpretations, (c) corrections on the individual scoring, and (d) registration of "problems." Problems were those lines in the transcripts that appeared to be difficult to interpret even after discussion about the interpretations.

Furthermore, the explanation of the categories was further specified. The major change was that the category "information" was added, as many of the messages appeared to be of this type. The analysis received the following explanation (which was used for final analysis of the sample sections):

#### *Deliberative Moves*

- 1 *Problem* = opening of an issue, a question, a dilemma and additional question
- 2 *Information* = asking, giving information
- 3 *Proposal* = asking, giving a suggestion to solve the problem, to follow a course of action, etc. (I suggest . . . ; May I suggest . . . ; Perhaps can . . . ; perhaps . . . should)
- 4 *Opinion* = asking, giving a statement in which speakers express their stance towards information, a proposal, an argument, a conclusion (Note that claims in argumentative discourse can be distinguished as opinions and conclusions. Their distinction depends on the sequence of expressions. If the claim precedes the evidence, it is an opinion. If it follows from the evidence it is a conclusion.) A normative component is included in opinion-statements (I think . . . ; in my opinion . . . ; has to)
- 5 *Argument* = asking, giving a reason pro or contra a proposal or an opinion (as . . . ; so)
- 6 *Conclusion* = asking, putting the agreed consequence of one or more propositions with respect to the whole issue (so . . . )
- 7 *Miscellaneous*

#### *Argument type*

##### *Curriculum content matters*

- 1 *Students* = practice, work experience, practicals, internships, behavior, preferences, opinions, learning results, flow to higher education, further education of students
- 2 *Teachers* = teaching experience, experience in business and industry, behavior, preferences, opinions, background, qualifications, competence of teachers on new technology

- 3 *Subject matter* = content of the subject or discipline at stake: mechanical engineering, production technology, office automation, process control, computer numeric control (CNC), programmable logic control (PLC), Boolean algebra
- 4 *Society* = job orientation, job profile that is appropriate, performance requirements in society and not-job-related roles, technological development, actual job and task performance, required performance level in business and industry, small and medium sized companies, employment, labor market, trends, developments

##### *Other matters*

- 5 *Educational policy* = messages related to policy development, or regulations that come from the authorities, the Ministry of Education: organization and structure of vocational education,
- 6 *Resources* = budget, equipment and facilities
- 7 *Other* = miscellaneous.

##### *Conclusion type*

- 1 based on arguments
- 2 based on opinions
- 3 based on proposal
- 4 based on information
- 5 basis unclear

Furthermore, the following additional coding rules were agreed:

1. In lines participants express themselves verbally. This verbal interaction can be divided into different categories. Each line can contain one or more categories of verbal interactions. In case a line contains messages from two or more different categories, the longest message within that line is taken as the unit of analysis.
2. If an argument is given pro or contra information, an opinion, an argument or a conclusion, and this argument consists of two or more lines, and it is one argument only, all lines of that argument get the same code. If two or more arguments are formulated, in two or more lines, these arguments are coded separately.
3. If a conclusion is based on more deliberative moves, the highest applicable category is coded.

4. In some cases conclusions are drawn by a speaker that relate to his or her previous statement, and that are not related to the issue that is discussed. Such (associative) conclusions are intended to support the prior statement, and have no implications for the issue. Therefore, these (associative) 'conclusions' are coded the same as the previous statement of the speaker.

The training was finalized by planning the actual analysis activities by day. The analysis activities took 4.5 days.

The analyses were carried out as planned. First the sample section was coded individually, and then the coding was discussed. Corrections were made during this discussion. These corrections were made recognizable. Problems were marked, and reviewed with the researcher. Through further interpretation and discussion of these problems, they could be coded, too.

### Reliability of Coding

The 20-minute sample sections of the transcripts were determined, as described earlier, by case and deliberation category (discussion and decision making). To create comparable sections of the transcripts, the prepared sample sections for the additional days for decision making in the BOS case (on Office Practice and Sales Practice) were divided into two parts of 10 minutes each, and the first parts of these sample sections were taken together into one sample section for the decision making section of the BOS case. This resulted in eight sample sections of 20 minutes of 3,021 lines altogether (about 80 pages of text), with a mean number of lines per case of 378.

Reliability of the coding is determined with correspondence ratios between scores of the two analysts on the analysis categories (deliberative move, argument type, and conclusion type) in the sample sections of the transcripts of the curriculum conferences. This was done before and after comparison and correction, according to the analysis procedure described earlier in this chapter (comparison and correction was necessary to adjust the data for misinterpretations of the material). The overall correspondence ratio between the analysts before comparison and correction of the data was .76 (s = .07), and after comparison and correction .94 (s = .03). The before comparison and correction correspondence ratio is satisfying, as in the study of Walker (1975): a comparable ratio was .71.

Analysis and correction of the individual coding of the sample sections had a significant effect on the cooperative coding. This

effect was tested with a paired samples t-test. The mean difference between the correspondence ratios before and after comparison and correction is .18 ( $t = 7.73$ ;  $df = 7$ ;  $p = .000$ ). Therefore it can be concluded that as the material is difficult to interpret, *one individual coding stage is not sufficient*. It is important to interpret the material appropriately, and for that purpose it is useful to have a discussion with a second analyst. Both can compare and weigh their interpretations. This results in data that are more reliable than those from one single analysis stage.

To check the test-retest reliability of the coding, an additional recoding of six sample section pages was performed by the analysts. The mean interanalyst correspondence ratio of coding of these pages before correction is .80 (s = .13); of recoding, it is .84 (s = .84). The correspondence ratios of coding before correction range from .61 to .94, and for recoding, from .61 to .94. The correlation between (1) and (2) is significant ( $r = .93$ ;  $p = .006$ ; 2-tailed significance), which confirms that *interpretation of the material*, and not the application of the coding categories, is the main difficulty in the deliberation analysis.

In the next sections the results of the deliberation content analysis will now be presented. First the main results regarding the deliberative moves, the argument types, and the conclusion types are presented. In that section the magnitude of the reasoning ratio is determined. The reasoning ratio serves as the test of the deliberation content part of this study. Next the results on the deliberative moves will be broken down into the two categories of sample sections.

### Deliberative Moves, Argument Type and Conclusion Type

The results on the frequency of deliberative scores, argument and conclusion type are summarized in Table 7.2. Introduction of issues accounted for 5.4% of all sample section lines. Asking and giving information accounted for 47.3% of all lines. Proposals for solution of the problem occurred in only 1.4% of the lines. Opinions on issues were expressed in 22.7% of the lines. Arguments pro or contra were given (and asked for in some instances) in 14.9% of the lines. Conclusions were drawn in 3.4% of the lines. Other deliberative moves, which could not be interpreted, were occurring in 4.9% of the lines.

Society-oriented arguments are used most frequently: 66.9% of the lines were society based. This includes arguments based on job profiles, technological developments in business and industry, and



TABLE 7.2  
Frequencies of Deliberative Moves, Argument Type,  
and Conclusion Type in Sample Sections  
of Transcripts of Curriculum Conferences

	%
Deliberative moves (n = 3021)	100
issue introduction	5.4
information	47.3
proposal	1.4
opinion	22.7
argument	14.9
conclusion	3.4
other	4.9
Arguments (n = 432)	100
Students	7.9
teachers	5.3
subject matter	3.5
society	66.9
resources	1.9
other	14.6
Conclusion type (n = 98)	100
arguments based	70.4
opinion based	12.2
proposal based	2.0
unlear basis	1.0
information basis	14.3

performance requirements that result from that. All other argument categories, students (7.9%), teachers (5.3%), subject matter (3.5%), and resources (1.9%), were used far less. Educational policy was also distinguished as an argument category, but no one of the speakers used this type of argument.

A considerable number (14.6%) of the lines were coded in as "other." It appeared to be difficult to interpret these arguments, although it was clear that the intention of the speakers of these lines was to use them as arguments.

Arguments based on conclusions are occurring most frequently: the Reasoning Ratio (the ratio of lines that are based on arguments, to the total number of conclusion lines) is 70.4, which is considerably above the standard that was set of .50. This means that the four curriculum conferences that were studied, on average, satisfy the deliberation content standard.

Partial deliberation (conclusions based on opinions) was the case in 12.2% of the lines, quasideliberation (conclusions based on proposals) in 2.0%.

As was stated, training of the analysts resulted in an additional category of deliberative moves: information. It was also added as a

TABLE 7.3  
Deliberative Move (in %) by Type of Session

Move	Session			Row Total
	Discussion	Decision making		
Issue introduction	48.2	51.8	5.4	47.3
Information	62.1	37.9	1.4	22.7
Proposal	39.5	60.5	1.4	14.9
Opinion	43.1	56.9	3.4	48.6
Argument	42.0	58.0	4.9	52.1
Conclusion	30.4	69.6	3.4	47.9
Other	51.4	48.6	4.9	100
Column Total	52.1	47.9	100	
N	3021			

conclusions type category, and this appeared to be a sensible addition, as 14.3% of the conclusions were coded as information based. Giving information apparently was enough to draw a conclusion on the issue. Further analysis of the issue, exchanging differences of opinions, and arguments pro and contra these opinions appeared not to be necessary in these instances. Therefore it can be concluded that, when curriculum problems at macro or at content level are introduced, information exchange may also result in homogeneous preferences.

#### Deliberative Move by Session Type

The sample section categories are discussion and decision making. Table 7.3 shows the breakdown of the deliberative moves by sample section category. Information is the relatively most frequent deliberative move in discussion sections. All other deliberative move categories are used more in decision making sections. In order of relative frequency, these deliberative move categories are: conclusion (69.6%), proposal (60.5%), argument (58.0%), opinion (56.9%), and issue introduction (51.8%). This is as expected, as the emphasis in the discussion section is on analysis of the information document (on the macrocurriculum level), whereas in the decision-making sections the emphasis is on the defining and taxonomic classifying of the curriculum content.

#### THE PROCESS OF DELIBERATION

For the analysis of the process component the existing data set of earlier evaluations of the curriculum conferences was analyzed. The selection of data that pertain to the following variables is made:

satisfaction with the deliberation process, role performance by persons involved, appreciation of curriculum conference components, sharing opinions, participation in decision making, and overall participation in the process. In this section the results on these variables will be presented, starting with the last-listed variable, overall participation.

### Participation in the Process

Appropriate curriculum deliberation implies that all participants are involved in the discussion and decision making. It is expected that the verbal interaction be distributed over participants. Content analysis data can be used to examine the variation of verbal interaction by participants. The 3,021 lines that are analyzed in the study were also coded for speaker and speaker's position in the curriculum conference.

The frequency of lines spoken is highest in the category of representatives from business and industry (31.8%), followed by those from education (29.5%) and the chair (27.3%). All the others spoke relatively less—subject matter experts (8.7%), supervisors (1.6%), and researchers (1.1%). Those who are involved in the organization of the curriculum conference—all participants save those from business and education—account for 38.7% of the verbal interaction, which is quite considerable, as the sample sections on which these data are based are discussion and decision making sections.

Frequencies by speaker by category vary considerably. The chair spoke 818 lines. The two supervisors spoke 19 and 29 lines, respectively. The lines spoken by experts vary from 10 to 34; those from researchers vary from 9 to 24. In the group representatives from business and industry the number of lines vary from 6 to 139, and in the group representatives from education from 1 to 133.

On the basis of these results it can be concluded that those who are professionally engaged in the curriculum conferences (chair, supervisors, researchers, subject matter experts) do use a considerable amount of verbal interaction time. This leaves relatively little time for participants individually to actively engage in the deliberation process. Furthermore the variation among the participants from business and industry and education in also quite considerable. Some of them do not speak at all in the sample sections, and others speak more than 130 lines.

### Satisfaction with the Deliberation Process

The satisfaction with the deliberation process is measured in the BME and BOS cases on the following 13 items: relaxation, product-

tivity, influence, concentration, understanding, independence, activity, trust, group involvement, acceptance, interest, responsibility, and calm. These items were listed in a questionnaire as five-point Likert items, with opposed concepts at the extremes of the scale. These extremes were randomly reversed, so that some items had their positive meaning on the left hand of the scale, and others on the right hand. For data analysis purposes the 'negative' items were reversed. For all items category 1 was the positive extreme of the scale, and 5 the negative extreme. The results on this question are listed in Table 7.4.

If the scale is divided into a positive part ranging from 1 to 2.5, a neutral part ranging from 2.5 to 3.5, and a negative part ranging from 3.5 to 5, the results in Table 7.4 show that all but one ("influence") of the means fall in the positive range. A one-way test of differences between means of the two cases on these variables did not show any significant results. Thus it can be concluded that, across these cases, the participants evaluate the deliberation process as being positive.

### Role Performance

The curriculum conferences are facilitated by a chair, experts, and researchers. In the cases in this study the chair was a member of the project team. The number of experts varied by case, with one or two of them present at each session.

TABLE 7.4  
Satisfaction with Deliberation Process  
in BME and BOS Cases  
(Positive Range 1.00–2.50; Respondent N = 23)

Factor	Mean	Std Dev
interest	1.43	.79
concentration	.59	.96
acceptance	1.68	.65
calm	1.68	.72
relaxation	1.70	.76
independence	1.78	.80
group orientation	1.91	.90
activity	2.00	.74
responsibility	2.09	1.12
understanding	2.13	.92
productivity	2.30	.88
influence	2.86	.71



The facilitative role of the *chair* was evaluated with eight items in the questionnaire: achieving the goals of the curriculum conference, stimulating and managing the discussions, realizing decision making, realizing an informal and warm atmosphere, gaining interest, summarizing, time control, and clarification of concepts. In the BEV and PRA case two items were added: stimulating reasoning and formulating conclusions. All items had four alternatives (1 = excellent; 2 = good; 3 = moderate; 4 = poor). The results on these items are listed in Table 7.5. If the range is divided between 1 and 4 into a positive domain between 1 and 2.5, and a negative domain between 2.5 and 4, all means across the cases fall in the positive domain. A one-way test of differences of means between the cases showed only one significant difference for stimulating and managing the discussion ( $F$  Prob. = .0492). Therefore it can be concluded that across the cases most participants were rather positive about the role of the chair.

The role of the *experts* was evaluated in the BME and BOS cases by asking the participants to rate the relevance, the usefulness and the informativeness of the experts on a four-point scale (1 = very; 2 = somewhat; 3 = hardly; 4 = not). The results of these items are also listed in Table 7.5. The overall means for the evaluation of the experts show a difference of 1.03 on the scale, but if the scale is divided in a positive and negative section, with 1 to 2.5 as the positive range, all experts are evaluated positively. The data do not support the relatively negative evaluation of the experts' information provision described earlier in this chapter. The information provided by the experts is evaluated positively according to these data.

The role of the *researchers* was evaluated in a different way across the cases. In the BME and BOS cases the criteria were relevance, usefulness, and information, the same criteria on which the experts were evaluated. In the BEV case the criteria were reporting the information document, presentation of information during the curriculum conference sessions, and answering questions on the texts in the information document. In the PRA project only the latter criterion of the BEV case was evaluated. In all cases four alternatives were distinguished, but the alternatives were different. In the BME and BOS cases, 1 = very, 2 = somewhat, 3 = hardly, and 4 = not; in the BEV and PRA cases, 1 = excellent, 2 = good, 3 = moderate, and 4 = poor. The results are listed in Table 5, too.

The positive range of means in the BEV case is defined as 1 to 1.5, whereas in the BEV and PRA cases this range is 1 to 2.5. The results show that, when these ranges are taken, all project team members are evaluated in the positive domain.

TABLE 7.5  
Evaluation of Role Performance by Chair, Subject  
Matter Experts and Researchers by Participants  
(Positive Range 1.00-2.50)

Factors	Mean	Std Dev
<i>Chair</i>		
achieving inform atmos	1.50	.59
stimulating discuss	1.64	.48
summarizing	1.69	.67
realizing decision mak	1.76	.48
formal conclusions	1.79	.51
stimul interest	1.86	.51
controlling time	1.87	.59
attaining objectives	1.88	.45
clarification concepts	1.93	.69
stim of opin and argum	2.00	.51
<i>Subject matter experts</i>		
Expert 1		
mean	1.82	.82
relevance	1.83	.86
usefulness	1.94	.87
information	1.75	.85
Expert 2		
mean	1.93	.83
relevance	1.78	.88
usefulness	1.90	.79
information	1.89	.81
Expert 3		
mean	2.10	.71
relevance	2.13	.83
usefulness	2.25	.71
information	2.22	.67
Expert 4		
mean	1.07	.14
relevance	1.25	.62
usefulness	1.20	.42
information	1.00	.00
<i>Researchers</i>		
BME BOS		
usefulness	1.42	.51
relevance	1.44	.51
information	1.47	.51
BEV PRA		
answering questions	2.00	.47
content of ID	2.09	.30
method of ID	2.09	.70

### Appreciation of Components

The appreciation of curriculum conference program components is evaluated by distinguishing between the discussion of the information document and the deliberation process. Both components are evaluated by participants of all cases with four-point scale items. The positive range of the scale is 1-2.5. Discussion of the information document in the BME-BOS cases shows a mean satisfaction of 1.65 ( $s = .57$ ), and the BEV-PRA cases 1.46 ( $s = .72$ ).

On the appreciation of the deliberation process four questions were asked of the participants. These questions deal with the directness of the deliberation, the perceived understandability of each other's messages, motivating of opinions, and manipulation. Participants were asked to rate these questions on a four-point scale. The positive range of this scale is 1-2.5. The variable on manipulation is recoded during data processing so that code 1 means no manipulation. The results are that directness is rated highest (mean = 1.63;  $s = .61$ ), followed by understanding (mean = 1.70;  $s = .51$ ), motivation (mean 1.77;  $s = .56$ ), and absence of manipulation (mean = 1.89;  $sd = .64$ ).

This implies that, on average, the participants evaluated the curriculum conference program components, consisting of the discussion of the information document, and the deliberation process, as being positive.

### Sharing Opinions and Participation in Decision Making

Another question in all cases was whether the participants thought that they could bring forward their opinions. In the BME and BOS cases there were four answering choices (1 = yes, 2 = somewhat, 3 = hardly, 4 = not), and in the BEV and PRA cases three (1 = yes, 2 = somewhat, 3 = no). The results show that 39 out of 47 responding participants across the cases thought that they could bring forward their opinions, whereas the remaining eight respondents chose the second alternative. Mean evaluation scores are 1.09 in the BME-BOS case ( $s = .29$ ), and 1.25 in the BEV-PRA cases ( $s = .44$ ).

The question of the opportunity to participate in the decision making had four alternatives in the BME and BOS cases (1 = more than sufficient, 2 = sufficient, 3 = insufficient, 4 = very insufficient), and in the BEV and PRA cases three (1 = yes, 2 = somewhat, 3 = no). The results were that 20 out of 21 responding participants in the BME and BOS cases said that they could (very) sufficiently

participate in the decision making, whereas only one respondent thought that was not the case. In the BEV and PRA cases, 20 out of 24 responding participants thought they could participate in the decision making, whereas three participants chose the second alternative, and one the third. The mean perceived opportunity to participate in the decision making in the BME-BOS cases is 1.81 ( $s = .51$ ), and in the BEV-PRA cases 1.21 ( $s = .51$ ). This means that nearly all participants stated that they could participate in the decision making.

### CONCLUSIONS

On the basis of the results of this study the following conclusions can be drawn:

1. The cases that are studied show a large proportion of real curriculum deliberation: About 70% of the conclusion lines in the sample sections of the transcripts of the curriculum conferences were based on arguments that were given for and against certain opinions. Restricted and quasi-deliberation were represented far less. In the last two cases argument and conclusion lines were represented more than in the first two cases, although the differences are small.
2. Of the arguments given, two-thirds are based on facts, principles, procedures, developments, and so on in business and industry. Job profile components, task performance, selection, and staffing requirements were frequently used sources of arguments to resolve issues. In the second two cases, however, the variation of arguments was wider than in the first two cases.
3. Information given during the curriculum deliberation accounts for nearly half of the lines of the transcripts. On many issues participants gave explanations of what they meant by certain concepts, opinions, or arguments.
4. In nearly a quarter of the lines in the sample, opinions were expressed, which means that, in many instances, participants took a stance on the issues that were at stake.

This allows a general conclusion that the curriculum conferences that were studied enabled good curriculum deliberation: it is predicted that, in other projects that are planned and realized according to the accommodated version of the method, consensus on



curriculum content will be established, and it is assumed that this is caused by the deliberative decision-making process.

Conclusions that pertain to the process component are the following:

5. Participants are satisfied with the deliberation process as it was realized during the curriculum conferences.
6. The roles of the chair, the researchers, and the subject matter experts were evaluated as being positive.

This allows the general conclusion that the deliberation process component of the curriculum conference method is perceived as being positive, which is conceived of as being promising for further applications of the method for comparable projects.

Participation of the different parties in the verbal interaction shows a rather varied profile. The chair speaks about one-quarter of the time, and all persons who are professionally involved in the curriculum conferences taken together speak nearly 40% of the lines. The rest of the verbal interaction is rather equally divided over the representatives from business and industry and those from education. Within these groups the variation of active participation, however, is very diverse.

#### REFERENCES

- Aregger, K., & Frey, K. (1972). Anlage von Bezugssystemen für den Curriculumprozess. In K. Aregger & U. Isenegger (Hrsg.), *Curriculumprozess: Beiträge zur Curriculumkonstruktion und -implementierung* (EBAC-Projekt, Bericht 8/9). Universität Freiburg: Pädagogisches Institut.
- Cohn, R. C. (1976). *Von der Psychoanalyse zur themenzentrierten Interaktion. Von der Behandlung einzelner zu einer Pädagogik für alle*. Stuttgart: Ernst Klett Verlag.
- Frey, K. (1981). *Curriculum-Konferenz: Gebiet Mikroprozessor*. Kiel: Institut für die Pädagogik der Naturwissenschaften and der Universität Kiel.
- Frey, K. (1982). *Curriculum-conference: An approach for curriculum development in groups*. Kiel: Institute for Science Education.
- Frey, K. (1983). *Die curriculare Legitimation*. Kiel: Institut für die Pädagogik der Naturwissenschaften and der Universität Kiel.
- Frey, K., & Aregger, K. (1975). Ein Modell zur Integration von Theorie und Praxis in Curriculumprojekten: Das Generative Leitssystem. In J. Haff & U. Hameyer (Eds.), *Curriculumplanung: Theorie und Praxis* (pp. 133-156). Munich: Kösel Verlag.
- Frey, K., Freil, A., & Langeheine, R. (1989). Do curriculum development models really influence the curriculum? *Journal of Curriculum Studies*, 21, 553-59.
- Frey, K., Malliou, K., Langeheine, R., & Horton-Krüger, G. (1988). *Studies of the quality of the curricular process in the curriculum conference*. Zürich/Kiel: Institut für Verhaltenswissenschaften/Institut für Pädagogik der Naturwissenschaften an der Universität Kiel.
- Habermas, J. (1971). Vorbereitende Bemerkungen zu einer Theorie der kommunikativen Kompetenz. In J. Habermas & N. Luhmann (Eds.), *Theorie der Gesellschaft oder Sozialtechnologie* (pp. 101-142). Frankfurt am Main: Suhrkamp Verlag.
- Mulder, M. (1988). *De Curriculumconferentie in het PRABO-project*. Enschede: Universiteit Twente, Faculteit der Toegepaste Onderwijskunde.
- Mulder, M. (1991). Deliberation in curriculum conferences. *Journal of Curriculum and Supervision*, 6, 325-39.
- Mulder, M. (1992). *The Curriculum Conference*. Dissertation. Enschede: University of Twente, Department of Educational Science and Technology.
- Mulder, M., & Brake, J. te (1990). Reliability testing of two analysis instruments for decision making in curriculum conferences. *Studies in Educational Evaluation*, 16, 529-50.
- Mulder, M., & Lent, J. van (1988). *Kantoorautomatisering: Een onderzoek naar leerplanningstekening*. Amsterdam: Swets & Zeitlinger.
- Mulder, M., & Thijsen, A. (1990). Decision making in curriculum conferences: A study on convergence of opinions. *Journal of Curriculum Studies*, 22, 343-60.
- Nijhof, W. J., & Mulder, M. (1986). *Basisevraagdigheden in het beroepsopderwijs*. 's-Gravenhage: Stichting voor Onderzoek van het Onderwijs.
- Nolan, J. F., & Short, E. C. (1985). Combining qualitative and quantitative modes of inquiry to inform curriculum deliberation: A proposed framework. *Curriculum Perspectives*, 5, 15-23.
- Reid, W. A. (1978). *Thinking about the curriculum: The nature and treatment of curriculum problems*. London: Routledge and Kegan Paul.
- Schwab, J. J. (1978). The practical: A language for curriculum. I. Westbury & N. J. Wilkhof (Eds.), *Science, Curriculum and Liberal Education* (pp. 287-321). Chicago: University of Chicago Press.
- Walker, D. F. (1975). Curriculum development in an art project. In W. A. Reid & D. F. Walker (Eds.), *Case studies in curriculum change: Great Britain and the United States* (pp. 91-136). London and Boston: Routledge & Kegan Paul.
- Walker, D. F. (1990). *Fundamentals of curriculum*. San Diego: Harcourt Brace Jovanovich.
- Walker, D. F. (1992). Methodological issues in curriculum research. P. W. Jackson (Ed.), *Handbook of Research on Curriculum*. New York: Macmillan, 90-110.
- Yin, R. K. (1989). *Case Study Research, Design and Methods*. Newbury Park: Sage.