

Evaluating Short Health Training Courses Through Content Analysis

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THE ADDITION of content analysis to the armamentarium of the health educator provides a valuable tool for evaluating such programs as workshops, institutes, buzz sessions, and seminars. Content analysis can be applied to situations in which the participants freely express their critical opinions of the program without resorting to the use of a detailed evaluation form. The increasing popularity of short programs opens the way for content analysis which more easily measures opinions, attitudes, and feelings that are expressed spontaneously in a written comment. A content analysis reveals information not ordinarily determined by highly structured testing and opinion research methods.

Content analysis has been defined as “. . . a research technique for the objective, systematic, and quantitative description of the manifest content of communication” (1).

A study conducted by the bureau of public health education, New York City Department of Health, is, we believe, a unique example of

the application of content analysis to an inservice training program for dental hygienists. This report demonstrates how the method is applied and evaluates its use in this type of program. No attempt was made to gain evidence of changes in attitudes or behavior. The analysis was made to determine reactions to the training program.

The Dental Hygienist Training Program

An inservice training program for dental hygienists was planned by the bureau of public health education in consultation with the bureau of public health dentistry. The director of the bureau of public health dentistry requested that the training program have a direct relationship to the work of the dental hygienists and that each hygienist be given a feeling of active participation in the program.

Accordingly, as soon as preliminary outlines for the program were completed, a questionnaire requesting preferences as to subject was sent to all the dental hygienists. The questionnaire was developed by a health educator who had been a dental hygienist and who had knowledge of the group's problems.

One hundred four question sheets out of a possible 138 were returned. The subjects to be included in the group and in the panel discussions were decided on the basis of the returned questionnaires.

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Three days were allocated to the inservice program held at a conveniently located health center. At the first session the chairman explained the objectives of the program. The choice of discussion groups in which members might participate on the second day of the institute was explained. Each hygienist was asked to write her first three choices of subject for each session. No one was put into a group not listed as one of her choices. This met the needs of the individual hygienist and provided a feeling of participation.

The afternoon session of the first day consisted of a panel discussion by various professionals of the many factors of a public health dental program. Time was allotted for a question and answer period.

The second day of the program was concerned with work problems. The morning was devoted to a "how-to-do-it" session and the afternoon, to a "talking-it-over" session. How-to-do-it sessions were concerned with teaching skills needed to perform job activities. In these groups, the leaders did some direct teaching, but many opportunities were allowed for the hygienist to participate, share experiences and problems, and find solutions.

Talking-it-over sessions were entirely of a group participation nature. The moderator served as a guide while the participants presented problems and reached solutions.

Each how-to-do-it session was serviced by a combination moderator-resource person, an observer, and a recorder. Each talking-it-over group had a moderator, a resource person, an observer, and a recorder. The recorders were dental hygienists from the groups. The others were public health educators, dentists, nurses, nutritionists, teachers, and social workers.

The "feed-back" sessions on the third day were devoted to discussing the written reports of the recorders. These reports were read aloud for the benefit of the entire group.

The inservice training program for dental hygienists was designed to:

1. Provide the latest professional information for the staff of dental hygienists.
2. Maintain the high professional standards of the staff.
3. Assist the dental hygienists to acquire the educational and professional knowledge and

skill to help them promote, organize, and operate better dental health education programs.

4. Help the dental hygienists acquire an insight into problems arising from interpersonal relationships between lay and professional persons encountered in the course of daily routine.

5. Stimulate discussion, participation, and resolution of problems by the dental hygienists through the group process in the inservice training program itself.

The first two objectives were the only original goals set up by the planning committee and were considered to be long range and continuing. The evaluation committee concluded that the implied aims of the two objectives should be included in a statement of objectives of the program. Therefore, the others were added to the two long-range goals before any evaluation was attempted.

The Method of Analysis

To evaluate the inservice training program, it was not feasible to employ questionnaires for determining preprogram and postprogram skills and attitudes. Nor were statistical methods involving control groups applicable. From the nature of the materials available, it appeared useful to attempt the content analysis technique.

The written reactions of the dental hygienists to each of the 10 group discussions constituted material to be subjected to content analysis. These anonymous comments presented an important opportunity for the evaluation of the degree to which the objectives of the program were attained. Reports of recorders and observers were also used in the evaluation.

Because of the large number of statements, a technique was required to organize the comments according to their relationships to the objectives of the program. Therefore, the immediate aims of the program were reviewed, and categories were determined for each of the goals. These categories represented separate pigeonholes into which each of the statements of the hygienists would be cast for qualitative and numerical examination.

To avoid bias in the analysis, all statements must have a category wherein they may rest easily. Four categories were set up with each

category representing one of the objectives (table 1).

To maintain the objectivity of the analysis and to minimize personal bias, several methods were used. First, indicators were agreed upon for each category. The indicators served as guides to determine the category for each reaction (table 2).

As a second method of maintaining objectivity, every reaction of the dental hygienists was placed in a category separately by each researcher and then recoded at a conference of all three researchers. Thus, 350 statements were categorized, with each of the 10 sessions' reactions kept separate. In some instances there was only one statement on a card to be coded. In other cases there were many statements on the reaction card.

Table 1. Relations between objectives and content analysis categories

Objective	Category
Implementation of classroom skills and knowledge.	Statements referring to educational and professional knowledge and skills.
Improvement of group leader methods.	
Discussion of interpersonal relations and participation in the group process.	
	Statements referring to group participation and feeling.

NOTE: A fourth category was drawn up to encompass statements of a nonspecific critical nature.

By comparing the quality and quantity of statements relating to a particular objective, one has an easily manageable and more significant evaluative measure than would be possible with any other technique which must handle many freely expressed comments.

Analysis

In analyzing the comments of the 166 hygienists given during the 10 sessions (table 3), every effort was made not to change actual quotations of participants in assigning statements to the appropriate category.

Comments presented during two sessions, "how to speak at an assembly meeting" and "clinic dentist," are given in detail. The num-

Table 2. Categories and indicators

Category	Indicator
Educational and professional.	{ Specific items of technique and of knowledge. { Authoritarianism, permissiveness, teaching aids, and techniques.
Group leader methods.	
Group participation and feeling.	{ Group consensus, sense of identification and participation.
Critical statements.	{ Items of a nonspecific and specific critical nature.

bers in parentheses after statements indicate how many times the statement was repeated.

How To Speak at an Assembly Meeting

Knowledge and skills. There were five statements noting the recognition of general knowledge and skills as signified by the statement, "many new ideas." In addition, there were six separate statements referring to specific knowledge or a skill, such as, "motivate children."

Typical comments were: many new ideas on speaking to group (5); ideas on school cooperation (1); know your objective (2); know your audience (2); and motivate children (1).

Group leadership methods. There were three statements recognizing the positive contributions of the leader to the discussion. In opposition were two statements which reflected unfavorably upon the leader's ability.

Observers' statements which supported the favorable reactions were: At no time did the moderator allow time to be consumed by irrelevant remarks; the group never went off on tangents; and the moderator handled the group very skillfully in order to include all members in the discussion.

Reactions were: leader's instruction especially valuable (2); problem area fully covered (1); not enough time to go over mechanics of speaking (1); and problem led us afield of how to do it (1).

Group participation and feeling. All dental hygienist reactions showed cognizance of the group process, including active participation of members, recognition and solution of problems, and the benefits of interpersonal relationships. The group tone was favorable.

Supporting the favorable comments on group tone, the observer noted: The group as a whole

Table 3. Number of dental hygienists and frequency distribution of their comments according to category by session

Session	Number in group	Categories						Total comments	
		Knowledge and skills	Group leadership methods		Group participation and feeling		Critical statements		
			Favorable	Unfavorable	Favorable	Unfavorable	Favorable		Unfavorable
Classroom discussion.....	16	5	5	1	5	0	4	0	20
Assembly meeting.....	12	11	3	2	6	0	14	0	36
Parents meeting.....	15	10	0	8	6	1	6	3	34
Audiovisual.....	21	16	3	2	6	2	18	0	47
Tooth brushing.....	15	14	4	0	11	0	16	13	58
How-to-do-it total.....	79	56	15	13	34	3	58	16	195
			28		37		74		
Child in clinic.....	14	4	0	1	5	0	3	1	14
Parent interview.....	20	2	1	0	18	0	20	0	41
Home visit.....	23	7	0	0	1	0	6	6	20
Clinic dentist.....	15	11	1	1	9	2	14	6	44
Nursing staff.....	15	8	0	9	5	4	5	5	36
Talking-it-over total.....	87	32	2	11	38	6	48	18	155
			13		44		66		
Grand total.....	166	88	41		81		140		350

and the members individually showed amazing enthusiasm and interest.

The comments were: many good suggestions and ideas brought to surface (2); served as catharsis—getting it off chest (1); group has covered problems and solutions quite well (1); benefited from experiences of group (1); and discussion very stimulating (1).

Critical statements. There are 14 subjective statements reflecting general approval of the session, the workshop process, and the personal benefits gained.

Observer commented that the group felt reasonably adequate solutions were arrived at but that there was not enough time for full discussion.

The hygienists said: enjoyed discussion very much (3); learned great deal from it (3); thought it was profitable. (2); workshop idea excellent (3); gotten many good ideas and answers to questions troubling me (2); and it was fine and hope I can follow through (1).

Clinic Dentist

The coded comments of the hygienists participating in a talk-it-over session, "clinic dentist,"

are given for comparison with the above comments from the how-to-do-it session.

Knowledge and skills. Eight statements acknowledged the importance of developing good interpersonal relationships among clinic personnel and the necessity for critical examination of attitudes. Three other statements commented on general and specific techniques of cooperation.

The observer's report reinforced and elaborated the hygienists' statements expanding on the knowledge and skills that were discussed.

Hygienists commented: a matter of personalities and learning to get along (2); relationship between dentist and hygienist should be based on mutual understanding (2); cooperation makes more harmonious relations in clinic (2); develop a closer feeling toward work and co-workers (1); share duties (1); have no specific duties (1); gained information which will help to keep clinic (1); and able to learn from other's problems (1).

Group leader methods. Two comments of a contradictory nature were present: one favorable in a general sense, the other critical, showing a specific fault.

Observer noted that the moderator was skillful in resolving initial resistance. Further, the observer commented that the moderator kept the group on the subject.

Remarks were: too much straying from subject and moderator helpful.

Group participation and feeling. Nine statements mirrored feeling on the value of exchange of ideas, the sense of working together to resolve problems, the opportunities to share experiences, and the value of group discussion. Two dissenting comments noted that the topic was not suitable for group discussion and that the group should have been more homogeneous.

Observer noted that no one was prevented from introducing pertinent subject matter. The observer also noted that participation may have been restricted because of the presence of two dentists and a resource person.

The stated reactions were: problems common to most (2); opportunities for airing personal likes and dislikes (2); discussion group a fine way of learning (1); nice to get together to discuss problems (1); group discussion improves feeling toward work (1); exchanged solutions to personal problems (1); makes us feel we are working together (1); accomplish more with smaller group (1); and topic should not be discussed in groups (1).

Critical statements. The expressions affirmed the value of this type of session. Two further statements continued this theme by requesting more sessions of this type. Six comments of a negative nature regarded the session as having no value. Four of these felt it was the fault of the type of session and two felt the discussion was not useful personally. Two statements echoed the suggestion that clinic dentists should be present to air opinions.

Observer commented that the session had definite value even though solutions were difficult to achieve. The observer also remarked upon the anxiety of the group to continue similar discussions.

The comments were: dentists should be there to air opinion (2); discussion helpful (2); interesting and informative (7); sessions valuable to work (1); should have more sessions (2); can hardly solve problems (4); and not valuable to me personally (2).

The remainder of the groups were treated in the manner previously explained and illus-

trated. Following is a summation of the results of the overall sessions.

Summary

This summation is based on the method of content analysis as applied not only to individual sessions, but also to the program as a whole. Each category summarization represents a compilation of all comments from all 10 sessions in that category.

Knowledge and Skills

Eighty-eight comments were elicited from all sessions covering specific items of knowledge and skill with a low of 2 for the "parent interview" and a high of 16 for "audiovisual aids."

In this category of knowledge and skills, the effectiveness of imparting the information has to be judged on two bases: the quality and quantity of the dental hygienists' comments and the supporting comments in this category by the observer and recorder. Quality refers to the degree of specificity of the comment. Those comments which referred to knowledge and skills in a nonspecific way were put in the category of critical statements. Content analysis alone did not seem to be sufficient for judging knowledge and skills acquired in this program.

Content analysis, however, does prove of benefit in numerically ascertaining comparisons of types of responses. More responses in knowledge and skills were made in the how-to-do-it session than in the talking-it-over session. This would seem to reflect the nature of the sessions.

Group Leader Methods

Content analysis proved most valuable in showing which staff members needed further training in group leadership. For example, in the session of "parent's meeting" there were eight unfavorable comments and none favorable. The nature of the comments indicated that this particular group leader probably needed training in motivational techniques and lesson planning.

The talking-it-over session produced a few comments on group leader methods. This is as it should be, since the session was designed to mute the leader's role and to encourage

democratic group participation. One session, produced nine unfavorable comments in this category. In reviewing the critical statements of this group, they showed that the leader lost direction of the group and did not fulfill the role of moderator. This leader should receive special training in group guidance.

Content analysis will help in the organization of future programs by determining which staff member should participate and which skills should be emphasized in their orientation training.

Group Participation and Feeling

Examination of the data for this category reveals a preponderance of favorable remarks relating to the group process. Significantly, even though group participation was new to many of the participants and therefore not many remarks could be anticipated in this category, the 81 comments showed that the dental hygienists recognized and commented on many aspects of the group process. These comments noted the various phases of group interaction, such as exchange of ideas, recognition of problems, solution of problems through discussion methods, and the good interpersonal relationships developed through this medium.

Content analysis would seem to be an effective tool for determining the intangibles of the group process which would be difficult if not impossible to ascertain using objective measuring devices.

Critical Statements

Statements in this category freely expressed the feelings of the hygienists on the value of the sessions. The majority of comments were favorable and they indicated that solutions were reached and the time spent was worth while. These general statements were inter-related to the other categories and served to reinforce opinion expressed more specifically elsewhere.

Suggestions

For those desiring to use content analysis for evaluative purposes, the following suggestions may be helpful:

1. All reaction forms should be drawn up explicitly to meet the objectives of the program while still giving opportunity for freely expressed narrative statements.

2. There must be a separate category for each objective of the program so that analysis may reveal the degree to which the program has succeeded in its attainment of each objective.

3. Objectivity in the analysis should be maintained through standardization of indicators and through cross checking by various members of the research staff in order to maintain reliability.

Conclusions

It has been demonstrated that the dental hygienists acquired an insight into problems of interpersonal relationships. Further, the dental hygienists appreciated and benefited from the discussion, participation, and resolution of problems through the group process. Content analysis did not show adequately the acquisition of professional knowledge and skills by the dental hygienists. The analysis was not able to measure the objectives of providing latest professional information and maintaining high professional standards, probably because these were long-range intangibles and this method does not readily lend itself to the evaluation of such factors. Generally, the evaluation showed that the program was a success and that the hygienists wanted to continue this type of inservice training.

REFERENCE

- (1) Berelson, B.: Content analysis in communication research. Glencoe, Ill., The Free Press, 1952, p. 18.