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ABSTRACT
        This paper discusses the concept of the critical
incidents technique, traces its early development in the training of
airplane pilots during World War II, sketches the requirements of the
typical steps, notes the few studies in communication using this
technique, provides an evaluation, and briefly describes a study
concerning department chairmen. The critical incidents technique is a
way of obtaining miniature cases which can then be inductively
categorized to find the behavioral dimensions of the general aim of
organizational aim educational communication. The purpose of applying
the technique in a communication audit of department chairmen is to
provide an example of its use in an educational setting, to study its
strengths and weaknesses, and to determine its adaptability to
education. (RB)

The Application of Critical Incident Procedures

for an Initial Audit of Organizational Communication

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The Application of Critical Incident Procedures

for an Initial Audit of Organizational Communication

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This paper is to orient the reader to the concept of the critical incident technique, trace its early development, sketch the requirements of the typical steps, note the few studies in communication, provide an evaluation, and briefly describe a study concerning department chairmen. The questions to be answered are: What is it? Why use it? What are the conditions required? Where is it strong and weak? What is an example of its use in a communication audit?

Introduction to the Concept of the
Critical Incident Technique

An audit may perpetuate error by using constructs which include

shibboleths. Terms of high abstraction may be little better. It has impressed the writer that many of the theoretical functions of administration have elements of communication in them--planning, organization, motivation, and control. It seemed that the touchstone which enabled transfer of executives as interchangeable parts between industrial, military, and educational positions might be communication in its human relations and conceptual aspects.[1] Baffled in attempts to apply the abstractions of classical and modern theories of administration, the writer turned to a direct initial analysis of organizational communication related to department chairmen and searched for an appropriate procedure.

A procedure was sought which would yield requirements specific to a position-situation relationship, stated in behavioral terms, and adequately comprehensive. The critical incident technique seemed to meet these criteria. Corbally, having used the technique in a dissertation, claimed that it went further by providing "recommendations which can be utilized immediately by practitioners in the field".[2] The technique is suitable for busy persons who have varied backgrounds.

Originating in Army Air Force testing, the critical incident technique has been adapted to the analysis of dimensions of professional positions. It has been used to determine the requirements for research personnel, dentists, life insurance agency heads, general psychology instructors, and school administrators. However, it has had very limited use in communication studies and none upon communication in higher education prior to this writer's dissertation.

The critical incident procedure seemed suitable as a counterpart to open-ended questions which elicit attitudes that are too often stereotypes. Critical incident procedure would define the communication related to department chairmen in specific, behavioral terms.

A progression of steps has been refined by experience since World War II. The design of the interview, especially the statement of the general aim, is to be carefully planned. Those interviewed should have been in a position to observe the behavior they report. Elements are abstracted from the incidents by the researcher or by those interviewed. The elements are categorized, either with trial headings or by clustering the elements as they are related. Consistency is checked by other persons who are instructed concerning the pattern of categories. The frequency of elements in categories is taken as indicative of those most often observed in comparable situations.

Characterizing the technique as a "promising refinement of job analysis," Furst provided a statement of the basic assumption of the technique.

> The technique assumes that a job consists of two
> types of tasks, or behaviors: critical and non-
> critical. Critical behaviors are defined as those
> that make the difference between success and
> failure in carrying out important parts of the job.
> Hence, they represent either very effective or
> very ineffective on-the-job behaviors, as judged
> by a qualified observer. Noncritical behaviors,
> on the other hand, derive from two sorts of tasks:
> (1) those having so little relation to success on
> the job that the way in which they are performed
> is of little consequence; (2) those done well by

most workers, so that they are not a source of
judgments on individual effectiveness. As one
would expect, the technique focuses on the
critical behaviors and ignores the noncritical.[3]

Obviously then, the technique does not produce descriptions of the

ideal or average. It is not normative. It is a method for analysis

of that which has actually occurred and that which is considered

critical at the time of the interview.

An over-view of the technique is given by the man most responsible

for its development, John C. Flanagan.

> The critical incident technique consists essentially
> in the collection of reports of behaviors which
> were critical in the sense that they made the
> difference between success and failure in the ob-
> served work situation. The individual observing
> and reporting the behavior is most typically a
> supervisor or an associate of the person involved
> in the incident. The incident is acceptable as a
> critical one only if in the observer's judgment it
> relates to an important aspect of the work and
> includes behavior which is outstandingly effective
> or is ineffective with respect to the specific
> situation. The critical incident is principally
> characterized by its reference to actual behavior
> in a defined situation rather than consisting of
> assumed traits and other inferences made by the
> observer.[4]

In summary, the critical incident technique is a way of obtaining

miniature cases which can then be inductively categorized so as to

find the behavioral dimensions of the general aim.

Early Development of the Technique

Eighteen volumes chronicle the testing of the Army Air Forces

Aviation Psychology Program. The search for job analysis led to the

development of an analytical procedure for the critical requirements.

This procedure was refined and termed the critical incident technique

in the post-war years.

As stated by John Flanagan, Director of the Aviation Psychology

Program:

> Many studies were carried out by personnel of the
> Aviation Psychology Program in an effort to gain
> more information regarding combat requirements.
> Of special importance are those requirements which
> are critical in the sense that a significant
> number of missions have succeeded or failed because
> of the presence or absence of this element or
> quality.[5]

Flanagan believed that most of the defects in the programs were not

in inefficient training but in having individuals learn the wrong

things instead of the combat requirements of their assignments.[6]

In the summer of 1941, a study of the reasons for failure in

pilot training was begun. An analysis of the proceedings of elimination

boards for pilots revealed a mixture of citation of events and such

generalizations as "poor judgment", or "insufficient progress."[7] The

critical events were more useful.

An early form of the critical incident technique is reported by

Crannell and Mollenkopf as having occurred in July, 1944.[8] At a

redistribution center men had reported 490 cases illustrating qualities

of leadership. Two hundred and thirty of these cases were processed by

one man underlining traits and abilities that characterized the

successful and unsuccessful leaders. He then classified the successful

statements into 23 categories. Three other investigators, using the

23 original categories as a starting point, independently classified

the statements. In a group meeting, the four resolved disagreements.

The same procedure was followed for the statements regarding unsuccess-

ful leaders. Under the one category, for example, "Sharing of

information with subordinates," they placed the statement "Explained

everything that he knew to his men so that they knew what to expect."[9]

In the second study, the researchers asked for actual incidents in which leadership was displayed. Thus, they received fewer stereotypes and habitual actions. The behavior was limited to that of subordinates. In this study, some cases were placed under a number of categories. Here is one incident to illustrate.

> On our last raid over s   ern Germany we had been
> hit rather heavily leav , only our No. 4 engine
> left, and to make matters worse it would not draw
> full power. No. 2 engine was not feathered but its
> cylinder head temp. was over 300 degrees centigrade
> and there was bad detenot on. At this time our
> engineer, a technical sergeant who had been helping
> the pilot (as our main fuel and oil lines had been
> shot out) went back to the waist of the ship and
> directed, as well as helped, in the jettisoning of
> all possible material and assigning positions to the
> enlisted crew members both for their safety and the
> plane's. He demonstrated coolness, efficiency, and
> common sense.[10]

The preceding incident was assigned to these categories:

1. Assumed special responsibility in combat emergency.

2. Organized and directed the activities of others under hazardous circumstances.

3. Remained cool and alert in emergency.

4. Demonstrated thorough knowledge of the job and equipment.
. . . .
13. Organized the work by pitching in himself and not by merely giving orders.[11]

Such assignment was felt to be an arduous task for the five judges used in the study. It should be noted here that many of the categories of early studies in critical incident procedure were accomplished through a group of men. Also to be noted is the emergency nature of the incidents collected. In such crises, the success or failure of action is more directly observable than in realms away from war and machines such as communication in education.

After the war, a group of men who had been involved in the Army Air Force research formed a non-profit organization, American Institute for Research, with John Flanagan at its head. This organizetion gave the name to the technique and further developed it. The group continued serving aviation through job analysis for airlines and did post-war efficiency studies in industry. Examples of their research were those of developing criteria for selection of commercial airline pilots and criteria for selection of research personnel in physical sciences.[12,13]

Under the direction of Flanagan, a number of dissertations was completed at the University of Pittsburgh. Wagner's dissertation was adapted to establish selection tests for the Pittsburgh School of Dentistry.[14] Weislogel organized critical requirements for life insurance agency heads.[15] Smit developed critical requirements for instructors of general psychology courses.[16]

Burns reported that the first use of critical incident procedure in education was by Domas.[17] Within New England, Domas collected about a thousand incidents from 198 teachers, principals, supervisors and superintendents. This study was conducted under the joint sponsorship of the Educational Research Corporation and the Harvard University Graduate School of Education.[18] Domas did not succeed in completing the categorization of the incidents.[19]

Dimensions and functions of teachers were more successfully analyzed within a state.[20] On a national basis, the ethical standards for the American Psychological Association were summarized from incidents.[21]

Designing and preliminary testing

Immediately, attention should be called to the fact that the framing of the interview is important.

Flanagan noted the importance of the aim or purpose.

> The essence of the technique is that only simple types of judgments are required of the observer, reports from only qualified observers are included, and all observations are evaluated by the observer in terms of an agreed upon statement of the purpose of the activity.[28]

Purpose or general aim of the activity must be set in a way acceptable to the users of the analysis. The general aim should be stated in general terms to achieve maximum acceptance. The criteria of success or effectiveness must, in brief form, be agreed upon.

Situations called for should be limited to those relevant to the attainment of the general aim. The extent of the effect should be a significant contribution, either positively or negatively, to the general aim of the activity.

To encourage response of an exacting nature and to avoid bias, considerable effort should be spent upon focusing of the interview as to definitions, aim, and structured format.

Selecting the observer group

The contribution of incidents is determined by the value system and experiences of the contributors. Therefore, the contributors must be competent by virtue of holding appropriate positions. They must have directly observed or experienced the incidents which they report.[29]

Certain competency of expression and interest may help. Robert L. Thorndike, as editor of one of the report volumes, complained about the fliers who were men of deeds and not articulate nor motivated to provide insights.[30]

The critical incident technique seems especially popular in the analysis of areas of responsibility for administrators in education. Schwei and Sternloff studied the responsibilities of school administrators in Wisconsin.[22,23] Burns reported that four studies were completed as part of a coordinated sequence using the technique under a three-year grant to the College of Education at the University of Georgia.[24] The technique was also used in studies of administration at Stanford and Wyoming.[25,26]

From the above, it is possible to see the evolving of a technique for determining dimensions of success on behavioral terms from an area in which alternative criteria are rather obvious, as for example, flying; to areas with less discernible and more delayed outcomes, such as education.

Typical Steps in Using the Critical
Incident Technique

Certain conditions are required. Probably these can be understood most easily by consideration of them within the steps in the procedure:[27]

1. Designing and preliminary testing.

2. Selecting the observer group.

3. Collecting an adequate and representative sample of critical incidents.

4. Examining all incidents and rejecting those not meeting specified criteria.

5. Isolating the critical elements contained in the critical incidents.

6. Placing elements into categories of a developing taxonomy.

7. Having independent analysts make consistency checks by categorizing random samples of incidents.

8. Assessing proportions of elements in categories.

The eight steps are elaborated in sequence.

Flanagan went farther in analysis.

> In many instances _participants_ knew very little
> about the critical requirements of a particular
> activity. They have very little information as
> to whether the difficulties which they have are
> typical of those which others have and are apt to
> dismiss individual differences in proficiency with
> comments regarding motivation and generalities. They
> have never found it necessary to make a systematic
> analysis of requirements for the activity and their
> judgments are usually in vague terms and likely to
> represent 'stereotypes' which have been suggested
> to them in conversation.[31]

Flanagan's warning is especially appropriate in avoiding analysis by

the respondents. However, with articular and educated persons, the

indication of elements has been profitable after presentation of the

sequential facts of the events.

Collecting adequate and representative incidents

Recall data may be used. The quality of the data is usually

evidenced within incidents:

> If full and precise details are given, it can usually
> be assumed that this information is accurate. Vague
> reports suggest that the incident is not well
> remembered and that some of the data may be incorrect.[32]

So incidents, to be acceptable, should be precise, complete, and

consistent.

Three principal ways of obtaining the recall data are mailed

questionnaire, group interviews, and individual interviews. A mailed

questionnaire cannot directly deal with need for further explanation

or a lack of motivation to respond. This problem is especially

troublesome in the critical incident technique since the format is

alien to most respondents and they may fear such material might get

into the wrong hands. Also, considerable thought and writing are

required.

Time and travel expense usually limit an individual interview approach to 100 respondents as in the Kessel and Kosy studies.[33,34] However, this writer felt that the complexity of communication is such that a larger number of respondents were needed.

The number of incidents gained from each respondent varies from about two to six in the various studies. Enough incidents must be obtained to provide an adequate number of critical behaviors. "Critical behaviors" or "critical elements" are those aspects of the incidents which are considered to be crucial to the quality of the incident. Enough incidents are required to assure achievement of most of the categories. Tacey and Jensen reported that 400 incidents gave them most of their categories.[35,36] The complexity of the task affects the number of incidents required.

Tape recording of the interviews may be done. In a personal interview at the American Institutes for Research, Dr. Dysinger warned of the need for editing such transcripts.[37] Kohl reported that the 502 incidents of 70 interviews resulted in 972 double spaced pages.[38] He was forced to do much auditing of tapes and correcting of typescript for the typist not acquainted with the terminology. His typists required 176 hours, almost six times the amount of time required for the recording of incidents.

Couch recorded two interviews and compared typescript with notes, finding no need for recording.[39]

As indicated by Flanagan, there are certain conditions to be provided for the interview.[40]

1. The purpose and role of the interviewer should be made clear.

2. Why the interviewee was selected should be answered without delay.

3. Anonymity of the data is to be assured.

4. Objective, uniformly presented questions should be pretested to avoid bias.

5. Conversation should be neutral and permissive, accepting the observer as the expert.

Rejection of incidents not meeting criteria

The incidents should meet certain criteria. Frequent criteria are these.[41] The incidents should be:

1. Relevant to the general aim.

2. Specific as to action. Behavior centered, not generalized traits.

3. Reported by person in position to observe the behavior.

4. Actually observed or participated in by the reporter.

5. Recent enough to not be brought to memory as a bizarre case.

6. Internally consistent.

7. Clear, not vague or ambiguous.

8. Complete.

There should be a certain directness and crispness to the report.

Isolating the critical elements

Given enough details and the results, the isolation of elements is fairly straight forward. On occasion, there may be some question as to when to separate as elements or retain as one elemental act.

To illustrate, here is an ineffective incident provided by Sternloff. The result, clear enough, gives validity to the element. This was chosen because it is in the area of communication. The critical element was underlined by Sternloff.

> It was learned that an administrator had contacted a young man and offered him a teaching position.

> The teacher who held the position for two years
> was not notified of his pending dismissal by the
> administrator but learned of it from friends in a
> neighboring school. The administrator lost the
> confidence of his own staff and made them insecure
> and uncertain. Fellow administrators in the area
> felt that he had let the profession down.[42]

The underlined element can be lifted off and placed upon a card for

sorting.

Corbally provided the following incident and a somewhat different

procedure in a coding which used statement of elements by the analyst.

> In this case, a school superintendent was the observer
> and he was observing his board of education as they
> performed their varying tasks. He was observing them
> with particular emphasis on the manner in which their
> behavior influenced school-community relations. He
> observed, for example, one incident in which an
> irate citizen appeared before the board demanding
> to know why his social club was denied permission
> to use the school gymnasium for a bazaar. The board
> members were courteous and tactful as they carefully
> explained their written and long-established policy
> regarding community use of school buildings. The
> citizen was completely satisfied, thanked the board
> for its time, and complimented the board members on
> the clarity of their policy.[43]

These elements were isolated by Corbally:

1. The board adopts written policy to give consistency
   to its actions.

2. The board adheres to its written policy.

3. Board members are courteous and tactful with
   visitors at board meetings.[44]

This writer would demur slightly in noting that there seems to

be an assumption as to reasoning by the board in the first element.

The narrative does not state that they had said that.

The tone of the incident may be retained better by using the

words of the one who experienced that incident. However, the

respondent is not to provide evaluations or interpretations. As

Wagner stated it: "No interpretations of the individual's psychological characteristics, such as abilities, aptitudes, motivations, and attitudes, which might be responsible for the behavior is desired."[45] However, in some interview studies, the respondent is asked which part of the behaviors already reported he considers to be critical elements.

Placing elements into categories
of a developing taxonomy

Usually, the initial sorting is facilitated by tentative use of a frame of reference from earlier work in the field. The frame of reference is tested and often either rejected or changed because of the nature of the data.

Instead of deductive classification from a tentative frame of reference, a classification system may be generated inductively. Thus, inductively, the first elements create almost individual categories. Following elements fall into the categories provided by earlier elements or create need for new categories. The categories grow until examination reveals that the categories can be logically assigned to sub-areas. Later examination reveals possible grouping into areas. Thus, grouping proceeds from categories to sub-areas and to areas.

As written by Flanagan, "The aim is that of increasing usefulness of the data while sacrificing as little as possible of the comprehensiveness, specificity, and validity."[46]

The descriptive titles grow as the categories are developed. The categories are in constant evolution as in the Flanagan study of

Critical Requirements for Research Workers.[47] Barnhard, Weislogel, and
Herzberg also used such an inductive approach.[48,49,50]

Each shift of a sub-point requires a restudy of the whole.
Examination enables combination of sparsely supported headings and the
new heading is carefully written at a higher level of generalization,
seeking to maintain a practical level. As indicated in the Preston
study, there seems to be a great gathering together at the end in a final
revision toward the final statement of requirements.[51]

Having analysts make a consistency check .

This occurs at different times in the studies: when the major
areas have been used with a few hundred elements, later with an outline
which gives titles of areas and sub-areas, or still later with full
statement of titles. Early use encourages further use of the headings.
Later use probably gives a better basis for final revision.

The range of disparity between the check coder and the investigator
in ten dissertations was from 4 per cent to 31 per cent.[52] Sub-areas
were more difficult than the main areas. Also, Heckman showed a
greater disparity for ineffective elements.[53]

After the consistency check, there is usually some discussion and
revision to clear up misunderstandings or headings which are not clear.

Assessing proportions of elements in categories

The frequencies of behaviors grouped in the categories may be
taken as an index of those behaviors most frequently observed as
responsible for success or failure. Corbally warned of a misunder-
standing here. "Some elements may occur more often in the course of a
job than will others, but this frequency of occurrence in no way

denotes a degree of criticalness."[54] Here, Corbally was thinking of the seriousness of the consequences.

A statement as to weighting is given in industrial terms by Good and Scate:

> The number of instances that fall in one or another of the categories is not necessarily an indication of the importance of that category for the job, but it's an index of the importance of that category in terms of number of acts likely to be observed which make a supervisor feel an employee is superior or inferior.[55]

Probably, the criticalness of any one behavior over another is not to be asserted for any one situation.

The determination of the less frequent, but more serious incident is dependent upon the application of the appropriate background of an analyst. Such a determination should be subject to review of the basic data.

Critical Incidents in Communication

In a dissertation upon the role of academic department heads, Aldmon studies the incidents reported from department heads and members of departments at the University of Tennessee, the University of the South, and Western Carolina College.[56] A summary of the effective behaviors evidenced by chairmen and related to communication follows: (1) Displays emotional stability, (2) Shows consideration of others, (3) Provides for cooperative planning, (4) Seeks solutions to problems through scientific procedures of problem solving, and (5) Communicates freely with others. These five behaviors out of a total of eight in the list are communication related.

Three dissertations are completely within the communication area. Wilson collected incidents from the superintendents and principals of the Ohio city school districts, excluding the largest six cities.[57] The size of the district was not important, but age of the reporting person was. Those over the age of forty gave significantly more elements in the operational (more mechanical) as compared with the organizational dimension (establish and maintain structure). Seventy-two per cent of the total incidents were in the operational dimension.

Gropper wrote one of the more useful dissertations.[58] Twenty-five business leaders were asked for the primary purpose of business conferences. A summary statement was made and checked against published ideas. Behaviors especially effective and ineffective in conference behavior were collected from persons in business, government, and military organizations. University night classes furnished much of the data concerning acts, results, and frequencies. Lists of functions were·compiled for participants and leaders.

Tacey used interview, questionnaire, and diary to collect his incidents of effective and ineffective oral communication of foremen in steel plants of the Pittsburgh area.[59] Although it was revealing concerning communication of foremen, many of the incidents are not transferable into higher education.

The preceding four dissertations demonstrate the suitability of the critical incident technique for administrators in different environments of communication. Their results reveal that certain environmental conditions are to be respected. A college, a school, or a factory will not produce results which can be directly transposed to one of the other two environments.

Evaluation of the Critical Incident Procedure

An evaluation was given by Sternloff which was extracted from its illustrations and applications by Goldin.[60,61] Here, the list is further shortened and highlighted by underscoring. Goldin's list included the first three disadvantages. Other writers, as cited with text, have extended the disadvantages beyond the three taken from Goldin.

Advantages of the Critical Incident Technique

1. Genuinely important situations for that position are sought out, those responsible for success or failure in the eyes of the reporter.

2. Specific requirements for the position are produced through statement in terms of the situations which characterize the position.

3. Requirements are precise statements rather than generalizations.

4. Report is comprehensive through a large number of observers' in varied circumstances freely reporting events.

5. It is relevant through freedom of choice and use of actual experience. Distortion by limited personal viewpoint, conversational stereotypes, or predetermined lists is avoided.

6. Relative weighting is provided through indication of those factors probably most frequently observed as responsible for success or failure.

7. Not requiring personal participation or long periods of observation, it is economical. Persons well acquainted with the activity are utilized as reporters of behavior they have observed.

8. Anonymity is assured by a melding of the elements into statements of requirements.

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Disadvantages of the Critical Incident Technique

1. Wasted effort may be experienced through reporters who through habit make <u>evaluative</u> rather than descriptive remarks.

2. Respondents may have difficulty in establishing criteria for selecting incidents. The degree of <u>criticalness</u> to use is difficult for them to assess.

3. The technique came from the situations of men with machines. More <u>complex</u> situations may yield false conclusions.

4. Corbally assessed weakness in terms of <u>delayed</u> results and <u>unrecognizable</u> results.

   The method assumes that observers can report incidents in which outcomes in terms of the aims of the undertaking are clearly recognizable. This leads to two distinct problems. Outcomes in education are often either deferred, unrecognizable, or both. Aims are often unformed, controversial, misunderstood, capable of many interpretations, or any combination of these and other factors.[58]

5. The objective, external events are stressed, not the <u>internal,</u> motivational aspects. Burns noted that the technique has difficulty in dealing with attitudinal affect.[59]

6. Burns also noted that the procedure tends to exclude the necessary, but insufficient conditions.[60] Probably, the cumulative effects of small <u>habits</u> are not dealt with adequately. One author reported that they appear as the recent, but perhaps to the coder, rather insignificant incidents.[61]

7. The technique contains many <u>subjective</u> elements which are to be viewed as limitations of the conclusions. There is an indication of this in the high percentage of disagreement in the consistency check.

A major advantage of the procedure is that it enables definition of work requirements with freedom from preconceived lists through the use of actual events. The opportunity to discover dimensions of organizational communication justified the risk of difficulties with habits, attitudes, and the complexity of communication processes. In this freedom to discover from unusual events, the critical incident procedure complements reports of usual communication practices.

Brief Description of Critical Incident Procedures in
a Study of Communication Related to Chairmen[62]

Procedure

For the critical incident procedure, definition and general aims

of communication related to chairmen were determined by two questionnaire

forms returned by thirty-two chairmen of departments in private colleges

and universities in the northeastern states. Communication was defined

as "written and spoken exchange of ideas and feelings, either in

person-to-person or person-to-group situations." The three general

aims of communication were climate, decision, and action.

Chairmen were to report critical events related to the position

of chairmanship which they had directly observed or experienced during

the two years prior to the interview. On the campuses of 22 state-

supported institutions, 269 chairmen described 585 incidents during

personal interviews.

The incidents were distributed into categories of areas of

responsibility and directions within the network. The areas of

responsibility were initially derived from previous studies of chair-

men and further expanded.

In communication network analysis, incidents of communication

were analyzed according to organizational dimensions. Incidents were

also analyzed as to specific directions of communication.

The chairmen had identified 706 elements in the incidents.

Inductively, with no frame of reference, the elements were ordered

into a taxonomy of critical communication processes. Since most of

the divisions had been formed before the last hundred elements were

classified, it was believed that the classification of probable

categories was fairly exhaustive.

A consistency check was done by a university planning administrator, an administrative assistant of a university physics department, and a hospital administrator. The agreement of the coders was high enough to indicate satisfactory coding for practical use.

There had been difficulty in the categorization of communication processes. Six weeks had been required for this work.

Difficulties were produced by closely related sub-categories. There were problems of choice between the action and the intent. These problems were especially difficult with the ineffective incidents which require that classifier translate ineffective incidents into a positive statement of requirement. When the decision was balanced between means or objective, the objective was used. However, the objective was declared by the chairman, not induced by the classifier.

Each chairman had a somewhat different frame of reference in the use of the term "communication." These frames of reference were more dominant in this study because the chairmen were asked to single out the elements which were used.

Work was slowed by not using an initial category pattern. Very few critical incident studies do not start the classification with a frame of reference borrowed from prior work in the field, such as categories of administrative responsibilities.

The retention on the card of the complete statement of the incident required constant re-reading of more material than only an element card would have required. However, it was felt that a complex process required consideration of the whole incident at the time of classification.

"Communication" has processes which are difficult to classify. A situation, an action, immediate result, and delayed result may be complicated by attitudinal aspects of situation and results. The chairman may be able to report the effect of communication upon his own attitudes, but attitudinal consequences in others should be supported by observable behavior. The observable aspects of situation or condition may be elements when presented in enough detail and not adequate when left in a general statement. Delayed effects or generality of impression are frequent in communication.

Some Results

Within the areas of responsibility of chairmen, "Faculty business" and "Curriculum" were areas in which effective incidents were emphasized. The "Acquisition and maintenance of property" was weighted with ineffective incidents. "Student relations" did not receive much attention in the incidents.

Network analysis revealed that ineffective incidents were dominantly failures to communicate, primarily from chairman to members of the department. Within effective incidents, the dominant direction was also from chairman to individuals of the department.

The taxonomy of critical incident processes showed more than a third of the elements to be under the major area of "Maintaining the organization". "Initiating and maintaining an authority structure" was heavily weighted with ineffective elements. In contrast, "Taking charge as one in authority" was heavily weighted with effective incidents. The critical processes of communication were primarily in two major dimensions of leadership—organizational and social-emotional.

Size of departments was so small, over-communication was so little, and structures were so simple that to transfer frames of reference from the realms of business or the military seemed to be an error. There was a complexity of directions of communication which had not been found in a preliminary analysis of the industrial foreman-worker situation. In the sharing of responsibilities, complex directions of communication and effects of personalities were created. Different frames may be needed for the collegial situations.

Conclusion

Critical incident technique may have utility for an initial audit. However, the technique must be considered in relation to its origin--evaluation of "ineffective" landings by pilot trainees. In contrast, communication does not function as an event which would have general agreement as to aims, start, finish, and success or failure. Communication is a process which is complicated by prior events, attitudes, and varied aims.

The technique does reveal problem areas of communication as to subject and direction. It is an antidote to the open-ended question which often elicits the reciting of shibboleths. Results provide a pattern of critical communication behaviors.

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