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A Delphi Analysis of Cooperative Purchasing in Southern Illinois

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in Southern Illinois

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Robert Edward Bon Durant, Sr.

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A Delphi Analysis of Cooperative
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Robert Edward BonDurant, Sr.

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ABSTRACT

A Delphi Analysis Of Cooperative Purchasing In Southern Illinois

A preliminary study of Cooperative Purchasing, in Southern Illinois school districts, was conducted using the Delphi technique. A group of school personnel with Cooperative Purchasing experience was secured from the prescribed geographical area. These people, the experts, were asked to respond to a three round Delphi survey. The experts were to formulate their opinion from their own experiences and by reviewing the composite results of the previous Delphi round.

The experts reached a consensus of opinion on the Positive Delphi question. Ninety-eight percent of those surveyed stated that "Lower Prices" was the primary concern of a purchasing cooperative. The Negative Delphi question produced different results. No clear consensus of opinion was reached. However, the experts did rank "Need for an Administrator plus other labor" at the top of their Negative Delphi List.

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Chapter I. Introduction

This study deals with a Delphi analysis of 195 school districts in Southern Illinois for the purpose of determining how to best establish a cooperative purchasing arrangement for school districts in Crawford and Lawrence counties. The uniqueness of this preliminary study is the application of the Delphi forecasting technique for planning a comprehensive purchasing plan for the public school system.

Traditionally there have been two methods for business and industry to predict their future. One method was to rely on a single expert advisor. There are many obvious problems with this technique, the foremost being that a company is relying on the opinion of one person. The second method is the committee of experts. Committees, by the nature of their composition, seem to have inherent problems. There seems to be little correlation between success in influencing the group and competence in the problem being discussed. Many negative features of committee work, such as committee noise (irrelevant or redundant material) and the pressures to compromise make normal committee work difficult under the best of conditions.

For years the previously mentioned techniques have been used with varying results. In 1967 a technique for forecasting the future--the Delphi--surfaced. The Delphi is a technique devised by Helmer through the auspices of the Rand Corporation of Santa Monica, California.¹ The

¹Olaf Helmer, "Analysis of the Future: The Delphi Method." Rand Corporation, (1967).

Direction of Helmer's research was to investigate techniques which would allow the user to arrive at a consensus of opinion among experts. The technique was designed as an alternative to the traditional committee approach. The Delphi technique of Helmer, in its simplest form, eliminates committee activity among the experts and replaces it with a carefully designed program of sequential, individual questionnaires based upon feedback from other experts.

It is important to understand the original design of the Delphi. First, is the formulation of the Delphi question. Much care needs to be taken to assure a question which precisely will elicit the type of responses desired by the research. Second, the experts will never come face-to-face in their decision making process, i.e. they are geographically separated. The third step is to submit the Delphi question to the experts. Upon receipt of their feedback, the researcher compiles the results and then, in step four, resubmits the results to each expert along with the responses and comments. This is the first questionnaire. The second and third questionnaires are then resubmitted to the expert, in like form, based upon information from the preceding round results.

In the second and third rounds, the participants receive the data plus a concise summary of the reasons given by the experts for their responses. By completion of the final round of the Delphi, a convergence of opinions is observed which is considered to be a consensus of opinions. The key to the Delphi method is that a committee of experts, geographically separated, can form an opinion based totally on the collective opinions of the committee members.

Chapter II. Review of Literature

History of The Delphi

Helmer made several case study tests of his new technique. He investigated such factors as the number of rounds necessary to reach a consensus of opinion, methods to eliminate polarization around two or more ideas, and interpretations of the term "consensus." With Helmer's new innovative forecasting tool--the Delphi--a new era of increased accuracy in future prediction was begun.

Dalkey, another employee of Rand Corporation, was the second to study the Delphi (1967). Dalkey refined the work of Helmer and put Helmer's idea into a more concise method. According to Dalkey, the Delphi has three distinct characteristics: (1) anonymity of its members, (2) Controlled feedback, and (3) statistical "group responses." Dalkey introduced a new phase to the Delphi based upon these three characteristics. He concluded that there should be no particular attempt at unanimity among respondents, and a spread (statistical) of opinions on the final round is the normal outcome.

In 1969 Pyke and North used the Delphi in the process of forecasting the future in research and development planning. Turnoff (1971) further developed the use of the Delphi. By the end of 1971 Turnoff had revised the Delphi concept again and used it as a tool to evaluate the strengths and weaknesses of information systems relative to developmental planning. Turnoff stated that there are five situations when the Delphi method clearly had an advantage over other alternatives:

1. Where the individuals needed to contribute knowledge to the examination of a complex problem have no history of adequate communication and the communication process must be structured to insure understanding.
2. Where the problem is so broad that more individuals are needed than can meaningfully interact in a face-to-face exchange.
3. Where disagreements among individuals are so severe that the communication process must be referred.
4. Where time is scarce for the individuals involved and/or geographical distances are large, thereby inhibiting frequent group meetings.
5. Where a supplemental group communication process would be conducive to increasing the efficiency of a face-to-face meeting.

Turnoff also states that "a valid use of the Delphi seems to be the deletion of the pros and cons associated with potential decision or policy options" (1971).

By 1973, the use of the Delphi as a forecasting instrument had become popular throughout business and industry. By this time the popularity of the Delphi had also spread to other aspects of society. In 1973, the Wisconsin Governor's Health Task Force used the Delphi as a means to identify problems, set goals, and identify solutions to the state's health problems. Also in 1973, the Delphi was used as a prediction technique in answering such questions as land use policies, population growth, and pollution problems (Kaufman, Gustafson, 1973). It was again in 1973 that the Delphi technique was first reported as used for educational planning. Skutsch and Hall (1973) used the technique in the Chicago public school system. Skutsch and Hall produced several Delphi plans and case studies in which the Delphi was used to resolve the particular needs of the educational planning process. Delberq's book

(1975) gives a complete accounting of the technique, along with examples of its use.

Scigliano (1977) discussed the use of the Delphi in predicting educational needs of community college students and planning for their future curriculum changes based upon her Delphi study. Crawford and Cossitt (1980) further developed the Delphi. A comparison of decision making through the Nominal Group Technique and Delphi Group Process was made. Each process was evaluated and then compared with the other in terms of its ability to facilitate the quantitative and qualitative productivity of a decision making group. Their results unequivocally supported the superiority of the Delphi.

A recent article appeared in Educational Leadership (Hartman, 1981) entitled, "Reaching Consensus Using the Delphi Technique." The article depicted the use of the Delphi in curriculum planning in the Paramus, New Jersey school system.

It can be seen by this brief review of the literature pertaining to the Delphi that its use as a forecasting tool has become quite popular and wide spread throughout the country. Furthermore, the literature review indicates that the Delphi Technique can be used to solve educational problems.

History of Cooperative Purchasing

The researcher found cooperative purchasing literature involving schools dates back to 1917. The first organization which supported the use of cooperative purchasing in the United States, and suggested its use by school systems, was the Cooperative League of The United States. A brief article by Perky (1917) appeared in the Cooperative League Of The United States Annual Report, suggesting that schools should band

together to save purchasing dollars. Other early groups such as the Northern States Cooperative League (1936) suggested that schools involve themselves in cooperative purchasing. In the same year De Young (1936), an educator, devised a plan for cooperative purchasing in his book Budgeting In Public Schools. The School of Business Administration (New York) was formed in 1956. Its first publication presented an article by Linn advocating the use of cooperative purchasing as a means to save budget dollars in schools.

Forsythe and Harden (1969) produced a document entitled "Development of Guidelines for Cooperative Purchasing Agencies and Procedures for Public School District." In this paper, they state the basic premise behind cooperative purchasing as "Whatever can be done to save funds expended for these items (supplies & equipment) should contribute to continued public confidence and support." Forsythe & Harden were referring to the support gained in public education by an obvious effort to save tax dollars through cooperative purchasing.

Hoffer (1971) published an article describing how the District of Columbia School District saved dollars by purchasing cooperatively. Zorn (1973), wrote an article for the American School Board Journal advocating the use of cooperative purchasing in the public schools. In 1974 an article appeared in Updating School Board Policies which discussed the big "IFS" concerned in cooperative purchasing by school districts. An article in School Business Affairs titled, "Cooperative Purchasing - Enriches The Tax Dollar," by Robert McClean (1976) reported on a cooperative purchasing unit which involved ten local government agencies in Washington County, Wisconsin. In November of the same year, O'Shea and Piper (1976) prepared a report entitled "Saving Money

Through Group Bidding, by North Dakota School Districts." The report by O'Shea and Piper reviewed the North Dakota Districts currently involved in cooperative purchasing and the procedures used by those districts.

Holloway and Clark (1977) prepared a state report for Kansas on cooperative purchasing. In their report Holloway and Clark made comparisons of school cooperative prices to those of non-cooperative prices. Their conclusions showed substantial savings through cooperative purchasing. Another article, "Cut 10 Percent From Your Supply Budget," by Harold Danser (1977) appeared in School Business Affairs, advocating a method of cooperative purchasing which he states, will cut 10 percent from the purchasing dollars of the user.

For the purpose of this study cooperative purchasing is defined as the collective purchasing, under the same contract or agreement, of supplies and/or equipment by two or more groups. As the definition applies to schools, it generally refers to two or more school districts which enter into an agreement to purchase cooperatively.

This study deals with the Delphi analysis of 195 school districts in southern Illinois. The study is the first phase of a series of studies leading to a proposal which will be presented for approval to the administrators of the six school districts of Crawford and Lawrence Counties in Illinois.

Chapter III. Methodology

Sample and Data Collection

After choosing the Delphi technique as the method for the research, several problems were addressed. The first problem was the funding for such an undertaking. A grant was applied for and secured. A Title IV, ESEA, Part C funding grant was secured through the Southern Illinois Educational Service Center for Educational Improvement, Marion Illinois.

Upon receipt of the funds, the second problem, the scope of the study was addressed. It was decided to include all school districts, private and parochial, south of Interstate 70 in Illinois. In addition districts, known to have cooperatives, above Interstate 70 were selected. This study included 195 school districts.

The next phase of investigation was to establish a list of persons in Southern Illinois school districts with expertise in cooperative purchasing. The researcher decided that persons included in the study group would need two or more years experience in cooperative purchasing to be considered as an expert.

To prepare the list of experts, letters were sent to all Educational Service Region Superintendents and all Special Education Service Center Directors within the prescribed geographical area (see Appendix, p. 24). The letters asked for information pertaining to persons within their region who, to their knowledge, had experience with cooperative purchasing. Also included in the letter was a request for a directory of employees of their service region.

Upon receipt of the responses, it was discovered that little

knowledge of cooperative purchasing was available through the Special Education Directors, and Regional Superintendents. It should be noted that a 100 percent return was experienced. With this result, an alternative plan was instituted. Using the directories supplied by the Educational Service Regions, a list of all superintendents of local school districts was prepared. Upon completion of the list, letters were sent to each superintendent (see Appendix p. 25). The letters stated the rationale for the study, the technique to be used, and asked the recipient to respond to the enclosed questionnaire (see Appendix, p. 26). The questionnaire asked for name, date, position in education, a brief statement of involvement in cooperative purchasing, and a positive/negative response to the question: "What do you see as the positive and negative aspects of cooperative purchasing?" Respondents were asked to prioritize their responses. This questionnaire was considered in the data as the first round of the Delphi.

One hundred-ninety-five questionnaires were sent and 145 responses were received, which represents a 73 percent return rate. Of these first round responses, seventy-nine persons were found to have two or more years of cooperative purchasing experience. These seventy-nine persons were considered the group of experts. The responses were compiled and numerically ordered by frequency of occurrence. Based upon these seventy-nine responses, it was decided a third round Delphi would conclude the study. The 145 responses were evaluated and a list of positive and negative responses was prepared. "Positive" will refer to those statements considered by the experts as important to the success of a cooperative purchasing program. "Negative" will refer to those statements considered by the experts as factors which could cause

problems or lead to the failure of a cooperative.

These responses were then evaluated and carefully reworded so that the original list of negative statements was reduced from forty-seven responses to eighteen. The positive list of responses was reduced from thirty-nine to fifteen (see Appendix, P. 27). Responses were rated objectively using predetermined criteria by the researcher. Those responses that were worded differently, but with the same intent, were combined. The list was then randomized into positive and negative areas so as not to bias respondents.

After this list of thirty-three statements was prepared, it was subjected to review by several persons to determine clarity of the intent of each statement and of the form used in general. At this time consideration was given to the type of evaluative criteria to be used by the respondents for the final two rounds of the Delphi. It was decided that respondents would have two positive areas and two negative areas of evaluation. The positive areas were "high priority" and "average priority". These were assigned point values of three and two, respectively. The negative areas were "low Priority" and "does not apply." These were assigned the point values of one and zero, respectively.

Upon development of the master list of statements, the second phase of the project was initiated. A letter was sent to the seventy-nine persons previously identified as experts, requesting their further assistance. After two weeks, those not responding were contacted by telephone and their responses requested.

The second round questionnaire, along with the first round results, was then submitted to the Delphi group for examination. The cover letter stated they were viewing the responses of the 145 respondents of

the first questionnaire. It also stated that because of their experience in the field of cooperative purchasing, their assistance would be invaluable in the final round of the Delphi project. To save time, each letter also contained the second round Delphi questionnaire (see Appendix, p. 28,29,30).

Of the seventy-nine experts contacted, forty-eight responded, or 61 percent. Each expert was asked to rank the statements using the previously established scale of three to zero. Each respondent was encouraged to comment on any statement.

The responses were next tabulated and comments examined. The comments did not alter the original questionnaire, so no changes were made in the format. These second round results were then prepared in a statement and mailed to the forty-eight respondents along with a copy of the questionnaire (see Appendix, p. 31,32,30). The participants were requested to complete the last questionnaire using their individual opinions on the topics and the priorities given by their peers in weighting their decisions.

Forty-two responses were received out of the forty-eight letters mailed, representing an 88% return rate. This was the final round of the Delphi. These responses were then numerically ordered into a list of priority responses (see Appendix, p. 33).

Chapter IV Results

The Positive Delphi Question

According to Delbecq (1975), the third round of the Delphi is usually the consensus round. By the third round, the experts should have finalized their ideas regarding the Delphi question and some agreement should have surfaced.

The top five rankings (Based on 126 possible points) presented below indicate high interest by the experts. Question fifteen, "Lower Prices," showed a true consensus, while the remaining four certainly indicated a majority concern. In contrast, question twelve, "supplies jobs for special education student," indicated low concern because they received

TABLE 1

THE FIVE POSITIVE RESPONSES RECEIVING HIGHEST RANKING, THIRD ROUND

Ranking	Question#	Question	Total Points
1	15	Lower prices	121
2	13	Increases bidder interest	99
3	7	Districts have an inventory	94
4	2	Less paperwork for the district	89
5	9	Reduces transportation costs	88

only thirty-six points. The remainder of the third round rankings decreased with a relatively even distribution.²

²See Appendix p. 34 for complete list and p. 35 for raw data.

The Negative Delphi Question

Examining the third round of the Negative Delphi statements one notes a systematic gradual regression in the ranking order.³ Question three, "Administrator plus other labor," received the high point total with ninety-four out of 126. Question five, "Companies don't bid when CO-OP is too large," received a total of 38 out of the possible 126. The top five places (seen below) indicate the gradual regression, with a five point average difference, in decrease between the top five rankings.

TABLE3

THE FIVE NEGATIVE RESPONSES RECEIVING HIGHEST RANKING, THIRD ROUND

Ranking	Question #	Question	Total Points
1	3	Administrator plus other labor	94
2	18	Storage problems	89
3	6	Price reduction only in large quant.	86
4	4	Central distribution problems	84
5	2	Coordination of purchasing calendar	74

Additional Analysis

If the analysis of the data is stopped at this point (in the traditional third round) this researcher feels an error in the interpretation of the opinions of the experts would exist. Taking the analysis one

³See Appendix p. 36 for complete list and p. 37 for raw data.

step further the researcher examined the results obtained relative to the categories used to rank the statements. "High Priority" and "Average Priority" are statements indicating interest by the experts, while "Low Priority" and "Does Not Apply" indicates a lack of interest.

Considering "High Priority" and "Average Priority" collectively and then changing the value to a percentage, will give greater value to those items considered (by the experts) to be important. Applying the formula $N = \frac{i_1 + i_2}{n} \times 100$ to the rankings, an interesting change occurs in the round three results as indicated in Table 3. In Table 3 the percentage column again indicates a gradual regression of statements. However, there appears to be some reordering of the results obtained by round 3.

TABLE 3

TOP FIVE RANKINGS THIRD ROUND OF NEGATIVE STATEMENTS USING THE FORMULA⁴

$$N = \frac{i_1 + i_2}{n} \times 100. \quad (\text{Based on } 126 \text{ pts.} = 100\%)$$

Ranking	Question #	% by Formula	Question
1	3	.68	Administrator + other labor
2	18	.67	Storage problems
3	4	.61	Central distribution problems
4	6	.60	Reduction only at large quantities
5	17	.49	Items ordered limited to those used by several schools.

⁴See Appendix p. 38 for complete list and p. 39 raw data.

Examining Table 4 (Positive Statements) data ordering remains exactly the same as the numerical evaluation indicated (see Table 1, p. 13) except for the fifth place. It should be noted the third round, fifth place Negative Statement, "Reduces transportation costs (qu.9), "is replaced by "Bids Prepared by an expert (qu. 5)."

TABLE 4

TOP FIVE RANKINGS OF POSITIVE STATEMENTS USING THE FORMULA⁵

$$\text{Third Round } N = \frac{i_1 + i_2}{n} \times 100 \text{ (Based on 126 pts. = 100\%)}$$

Ranking	Question #	% by Formula	Question
1	15	.98	Lower prices
2	13	.88	Increases bidder interest
2	7	.88	Districts have inventory
4	2	.82	Less paperwork for district
5	15	.79	Bids prepared by an expert

Analysis by Round

The most realistic analysis of the data appears to be the ranking of each statement by round and the changes in relative placement of the statements. As can be seen the experts did seem to finalize their opinions of what was significantly important for the positive statements. This is indicated by the lack of movement between round three and the analysis using the formula $N = \frac{i_1 + i_2}{n} \times 100$. In the negative analysis there still appears to be some question remaining between round three and the formula analysis. (see Tables 5-6)

⁵Appendix p. 40 for complete list and p. 41 for raw data.

TABLE 5*

TOP FIVE RANKINGS BY ROUND AND FORMULA ANALYSIS POSITIVE STATEMENTS⁶

Place	Qu#	Total pts.	Place Round 1	Place Round 2	Place Round 3	Place Formula
1	15	4	1	1	1	1
2	2	13	3	2	4	4
3	13	14	6	3	2	3
4	7	19	9	5	3	2
5	6	23	4	6	7	6
5	9	23	6	4	5	8

TABLE 6*

TOP FIVE RANKINGS BY ROUND AND FORMULA ANALYSIS NEGATIVE STATEMENTS⁷

Place	Qu#	Total pts.	Place Round 1	Place Round 2	Place Round 3	Place Formula
1	18	8	3	1	3	1
2	3	10	4	3	1	2
2	4	10	1	2	4	3
3	11	18	2	4	7	5
4	6	19	7	5	3	4
5	2	24	6	6	5	7

*The numbers given are the rankings attained in each round plus the formula analysis. Therefore, the lower the total of the horizontal line the higher the place.

⁶See Appendix for the complete rankings p. 42.

⁷See Appendix for the complete rankings p. 43.

Chapter V. SUMMARY, FINDINGS, CONCLUSION, AND RECOMMENDATIONS

Summary

This study covered a time span of one year and involved 195 school districts. Forty-eight persons, considered to be experts on cooperative purchasing, were chosen from the selected districts. These forty-eight experts responded to a modified three round Delphi analysis of Cooperative Purchasing. In addition to the analysis by the experts, this author expanded their responses by refining the Delphi method to demonstrate a more accurate accounting of the experts opinions with regard to Cooperative Purchasing.

Findings

There appears to be a consensus of opinions on only one item in the Delphi survey--"lower prices." Ninety-eight percent of the experts agreed they could save money buy purchasing through a cooperative. The problem observed in the data analysis was a gradual regression in ranking for both the positive and negative statements below "lower prices." If the Delphi analysis is used to determine consensus of expert opinion on a topic, then an arbitrary point of agreement by the experts must be established. If this arbitrary point of consensus cannot be established, as in this case, then the rankings by the experts must be taken at face value of decreasing importance.

Conclusions

The use of the Delphi as an analytical tool has clearly indicated a workable ordering of priorities which is usable by those planning a

cooperative purchasing venture. By using the lists (Positive/Negative) newcomers may avoid the pitfalls experienced by others. Although there appears to be many problems with cooperative purchasing, the Delphi analysis has demonstrated there are equally as many good points. The experts clearly indicated that dollar saving was the prime reason for involvement in a cooperative. The experts indicate, by their lack of consensus on the remainder of topics, there has either been no clear model to follow or problems with cooperative purchasing are different in each school system in which it is used.

Recommendations

Cooperative purchasing, because of its necessary involvement of multiple school districts, should be studied from every aspect before entrance is attempted. A study such as this should be a preliminary tool to any venture involving ideas which are not tested thoroughly such as cooperative purchasing. By using the results of this study, school districts should be able to build a model to follow, accentuating the positive ideas of cooperative purchasing and negating the negative aspects.

As stated previously, too many cooperatives have begun as efforts to save money and have not followed logical patterns of development. There is no doubt that a purchasing cooperative can save dollars for school districts, however, many districts enter an agreement and soon drop out because of problems involved. As indicated by this study there are probably as many negative as positive ideas about cooperative purchasing.

It is the recommendation of this author that the positive and negative ideas of the experts presented in this paper be carefully considered prior to any planning of a purchasing cooperative. It would also be logical that visitations, to both those currently involved in

successful cooperatives as well as those which were failures, be made. It also follows that a workshop on cooperatives be organized to let those presently involved examine current trends and those wishing to enter cooperative purchasing agreements see the positive as well as the negative aspects involved.

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APPENDIX

ROGER LEWIS

2/1

Regional Superintendent of Schools

Crawford - Lawrence Educational Service Region

CRAWFORD COUNTY COURTHOUSE
LAWRENCE COUNTY COURTHOUSE

ROBINSON, ILLINOIS 62454
LAWRENCEVILLE, ILLINOIS 62439

618-544-2719
618-943-3522

J.H. MANUELL
Assistant Superintendent

LYNN LAWTON
Secretary

PEGGY TURNER
Administrative Secretary

Robert E. BonDurant
2000 North Cross
Robinson, IL 62454

February 17, 1981

I am contemplating a proposal for a cooperative purchasing agreement in Educational Service Region #15. The first phase will be to examine the benefits derived and problems encountered from such a project. To accomplish this first goal a "Delphi" technique will be used. Phase one is to identify persons with some expertise in the field of cooperative purchasing.

Would you please identify any persons within your Ed. Service Region whom have had some experience with cooperative purchasing. If, to your knowledge, no such persons exist then a negative reply would be much appreciated. Please include yourself and staff if you have had cooperative purchasing experiences.

Also, if possible, would you include with your reply a list of local school superintendents and private or parochial school administrators.

Thank you for your help and cooperation.

Robert E. BonDurant

Representing Roger Lewis
(Ed Service Region #15)

ROGER LEWIS

Regional Superintendent of Schools

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Crawford - Lawrence Educational Service Region

CRAWFORD COUNTY COURTHOUSE
LAWRENCE COUNTY COURTHOUSE

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J.H. MANUELL
Assistant Superintendent

LYNN LAWTON
Secretary

Robert E. BonDurant
2000 North Cross
Robinson, IL 62454

Subject: Cooperative Purchasing (Multi-district)

You have been identified as a person who might have knowledge or experience with cooperative purchasing. Your help in a brief study would be much appreciated.

I am conducting a feasibility study of cooperative purchasing for Educational Service Region #15 (Crawford-Lawrence Counties). The first phase is to establish a consensus of opinion of the positive and negative aspects of such a program. This consensus will be accomplished by a modified "Delphi" technique. The "Delphi" will be a series of three short questionnaires on cooperative purchasing (the first is included with this letter).

Upon completion of the third questionnaire, I will mail the results of the survey to you. Hopefully we will establish a workable model that we can all use to bolster our sinking budgets.

Thank you for your help and cooperation.

Cordially,

Robert E. BonDurant
representing Roger Lewis
(Ed Service Region #15)

Randomized List of Negative and Positive Responses

Negative

1. Ability of district to pay when items arrive.
2. Coordination of purchasing calendar between districts
3. Need for an administrator plus other labor.
4. Problems with central distribution of supplies.
5. Companies don't bid when co-op is too large.
6. Price reduction occurs only at large quantities.
7. Lack of knowledge on items available.
8. Warranty control problems.
9. Problems with local Merchants.
10. One large bill comes to administrative district.
11. Compromise on specifications.
12. No contact with sales representatives.
13. Loss of local district control.
14. Poor quality of items.
15. Stealing.
16. Insurance on itmes ordered and stored.
17. Items ordered are limited to those used by several schools.
18. Storage problems.

Positive Statements

1. Reduces back orders.
2. Less paperwork for districts.
3. Higher quality products.
4. Good service from sales representative.
5. Bids prepared by expert.
6. Makes budgeting easier.
7. Districts have an inventory to draw from.
8. Reduces need for school storage area.
9. Reduces transportation costs.
10. Less time with sales representatives.
11. Source for idea exchange between districts.
12. Supplies jobs for special ed. students.
13. Increases bidder interest.
14. Supplies arrive at one time.
15. Lower prices.

Crawford - Lawrence Educational Service RegionCRAWFORD COUNTY COURTHOUSE
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618-943-3522**J.H. MANUELL**
Assistant Superintendent**PEGGY TURNER**
Administrative Secretary**LYNN LAWTON**
SecretaryRobert E. Bondurant
R. R. 4
Robinson, IL 62454

April 6, 1981

To:

Thank you for your response to my request for information regarding cooperative purchasing. Listed on the enclosed page are the responses of 115 fellow administrators. Seventy-nine administrators were found to have two or more years of experience with cooperative purchasing. These seventy-nine will be considered the Delphi test group.

I would appreciate two more responses from you. Please take a few moments to complete the form. When this information is compiled I will be able to identify the major positive and negative aspects of cooperative purchasing as viewed by those involved in the process.

Cordially,

Robert E. Bondurant
Representing Roger Lewis
(Ed. Service Region #15)

1st Round Results

Place	Qu.#	Negative Statements
1	4	Problems with central distribution of supplies
2	11	Compromise on specifications
3	18	Storage problems
4	3	Need for an administrator plus other labor
5	13	Loss of local district control
6	2	Coordination of purchasing calendar between districts
6	17	Items ordered are limited to those used by several schools
7	6	Price reduction occurs only at large quantities
8	1	Ability of district to pay when items arrive
8	7	Lack of knowledge on items available
9	10	One large bill comes to administrative district
9	14	Poor quality of items
10	16	Insurance on items ordered and stored
11	8	Warranty control problems
11	12	No contact with sales representatives
12	5	Companies don't bid when co-op is too large
12	15	Stealing
12	9	Problems with local merchants

Place	Qu.#	Positive Statements
1	15	Lower prices
2	11	Source for idea exchange between districts
3	2	Less paperwork for districts
4	6	Makes budgeting easier
5	14	Supplies arrive at one time
6	8	Reduces need for school storage area
6	9	Reduces transportation costs
6	13	Increases bidder interest
7	3	Higher quality products
8	4	Good service from sales representatives
9	1	Reduces back orders
9	5	Bids prepared by an expert
9	7	Districts have an inventory to draw from
9	10	Less time with sales representatives
9	12	Supplies jobs for special ed. students

Below is a random list of **Positive** and **Negative** statements pertaining to cooperative purchasing.

Using the following scale of point values please rate each item.

- 3 – HIGH PRIORITY
- 2 – AVERAGE PRIORITY
- 1 – LOW PRIORITY
- 0 – DOES NOT APPLY

Negative Statements

- _____ Ability of district to pay when items arrive
- _____ Coordination of purchasing calendar between districts
- _____ Need for an administrator plus other labor
- _____ Problems with central distribution of supplies
- _____ Companies don't bid when co-op is too large
- _____ Price reduction occurs only at large quantities
- _____ Lack of knowledge on items available
- _____ Warranty control problems
- _____ Problems with local merchants
- _____ One large bill comes to administrative district
- _____ Compromise on specifications
- _____ No contact with sales representatives
- _____ Loss of local district control
- _____ Poor quality of items
- _____ Stealing
- _____ Insurance on items ordered and stored
- _____ Items ordered are limited to those used by several schools
- _____ Storage problems

Positive Statements

- _____ Reduces back orders
- _____ Less paperwork for districts
- _____ Higher quality products
- _____ Good service from sales representatives
- _____ Bids prepared by an expert
- _____ Makes budgeting easier
- _____ Districts have an inventory to draw from
- _____ Reduces need for school storage area
- _____ Reduces transportation costs
- _____ Less time with sales representatives
- _____ Source for idea exchange between districts
- _____ Supplies jobs for special ed. students
- _____ Increases bidder interest
- _____ Supplies arrive at one time
- _____ Lower prices

Name _____

School District _____

Crawford - Lawrence Educational Service RegionCRAWFORD COUNTY COURTHOUSE
LAWRENCE COUNTY COURTHOUSEROBINSON, ILLINOIS 62454
LAWRENCEVILLE, ILLINOIS 62439618-544-2719
618-943-3522**J.H. MANUELL**
Assistant Superintendent**LYNN LAWTON**
Secretary**PEGGY TURNER**
Administrative SecretaryRobert E. BonDurant
R. R. 4
Robinson, IL 62454

May 4, 1981

To:

Thank you for your response to my last request for information regarding cooperative purchasing. Listed on the enclosed page are the responses of forty-eight fellow administrators.

I would appreciate one more response from you. Please take a few moments to complete the form. When this information is compiled I will be able to identify the major positive and negative aspects of cooperative purchasing as viewed by those involved in the process.

Cordially,

Robert E. BonDurant
Representing Roger Lewis
(Ed. Service Region #15)

2nd Round Results

Place	Qu.#	Negative Statements
1	18	Storage problems
2	4	Problems with central distribution of supplies
3	3	Need for an administrator plus other labor
4	11	Compromise on specifications
5	6	Price reduction occurs only at large quantities
6	2	Coordination of purchasing calendar between districts
7	7	Lack of knowledge on items available
8	13	Loss of local district control
8	17	Items ordered are limited to those used by several schools
9	9	Problems with local merchants
10	12	No contact with sales representatives
11	14	Poor quality of items
12	1	Ability of district to pay when items arrive
12	15	Stealing
12	16	Insurance on items ordered and stored
13	10	One large bill comes to administrative district
14	5	Companies don't bid when co-op is too large
14	8	Warranty control problems

Place	Qu.#	Positive Statements
1	15	Lower prices
2	2	Less paperwork for districts
3	13	Increases bidder interest
4	9	Reduces transportation costs
5	7	Districts have an inventory to draw from
6	6	Makes budgeting easier
7	11	Source for idea exchange between districts
8	14	Supplies arrive at one time
9	3	Higher quality products
9	4	Good service from sales representatives
10	5	Bids prepared by an expert
10	8	Reduces need for school storage area
11	10	Less time with sales representatives.
12	1	Reduces back orders
13	12	Supplies jobs for special ed. students

3rd Round Results

Place	Qu.#	Negative Statements
1	3	Need for an administrator plus other labor
2	18	Storage problems
3	6	Price reduction occurs only at large quantities
4	4	Problems with central distribution of supplies
5	2	Coordination of purchasing calendar between districts
6	17	Items ordered are limited to those used by several schools
7	11	Compromise on specifications
8	14	Poor quality of items
9	10	One large bill comes to administrative district
10	7	Lack of knowledge on items available
11	8	Warranty control problems
11	9	Problems with local merchants
12	13	Loss of local district control
13	1	Ability of district to pay when items arrive
13	16	Insurance on items ordered and stored
14	12	No contact with sales representative
14	15	Stealing
15	5	Companies don't bid when CO-OP is too large

Place	Qu.#	Positive Statements
1	15	Lower prices
2	13	Increases bidder interest
3	7	Districts have an inventory to draw from
4	2	Less paperwork for districts
5	9	Reduces transportation costs
6	5	Bids prepared by an expert
7	3	Higher quality products
7	6	Makes budgeting easier
7	10	Less time with sales representatives
8	14	Supplies arrive at one time
9	1	Reduces back orders
10	11	Source for idea exchange between districts
11	4	Good service from sales representatives
12	8	Reduces need for school storage area
13	12	Supplies jobs for special ed. students

3rd Round Results

Place	Qu.#	Positive Statements	Points
1	15	Lower prices	121
2	13	Increases bidder interest	99
3	7	Districts have an inventory to draw from	94
4	2	Less paperwork for districts	89
5	9	Reduces transportation costs	88
6	5	Bids prepared by an expert	87
7	3	Higher quality products	86
7	6	Makes budgeting easier	86
7	10	Less time with sales representatives	86
8	14	Supplies arrive at one time	82
9	1	Reduces back orders	81
10	11	Source for idea exchange between districts	74
11	4	Good service from sales representatives	73
12	8	Reduces need for school storage area	68
13	12	Supplies jobs for special ed. student	32

TABLE

Third Round Positive Responses By Raw Number and Percentage

Qu. #	# of 3's	% of 3's	# of 2's	% of 2's	Total % 3+2 42	# of 1's	% of 1's	# of 0's	% of 0's	Total % 1+0	Ranking of % 3+2 42
1	11	26.19	20	47.62	73.81	8	19.05	3	7.14	26.19	6
2	16	38.91	18	42.86	81.77	5	11.90	3	7.14	19.04	3
3	15	35.71	15	35.71	71.42	11	26.19	1	2.38	28.57	7
4	12	28.57	14	33.33	69.90	9	21.43	7	16.67	38.10	8
5	17	40.48	16	38.91	79.39	4	9.52	5	11.90	21.42	4
6	15	35.71	17	40.48	76.19	7	16.67	3	7.14	23.81	5
7	19	45.24	18	42.88	88.10	1	2.38	4	9.52	11.90	2
8	11	46.19	12	28.57	54.76	11	26.19	8	19.05	45.24	10
9	17	40.48	14	33.33	73.81	9	21.43	2	4.76	26.19	6
10	18	42.86	12	28.57	71.48	8	19.05	4	9.52	28.57	7
11	11	26.19	14	33.33	59.52	13	30.95	4	9.52	40.47	9
12	2	4.76	8	19.05	23.81	10	23.81	22	52.38	76.19	11
13	22	52.38	15	35.71	88.09	3	7.14	2	2.38	9.52	2
14	13	30.95	17	40.48	71.43	9	21.43	3	7.14	28.57	7
15	38	90.48	3	7.14	97.62	1	3.38	0	0.00	2.38	1

3rd Round Results

Place	Qu.#	Negative Statements	Points
1	3	Need for an administrator plus other labor	94
2	18	Storage problems	89
3	6	Price reduction occurs only at large quantities	86
4	4	Problems with central distribution of supplies	84
5	2	Coordination of purchasing calendar between districts	74
6	17	Items limited to those used by several schools	73
7	11	Compromise on specifications	69
8	14	Poor quality of items	65
9	10	One large bill comes to administrative district	60
10	7	Lack of knowledge on items available	63
11	8	Warranty control problems	55
11	9	Problems with local merchants	55
12	13	Loss of local district control	54
13	1	Ability of district to pay when items arrive	53
13	16	Insurance on items ordered and stored	53
14	12	No contact with sales representatives	40
14	15	Stealing	40
15	5	Companies don't bid when CO-OP is too large	38

TABLE

Third Round Negative Responses By Raw Number and Percentage

Qu. #	# of 3's	% of 3's	# of 2's	% of 2's	Total % 3+2	# of 1's	% of 1's	# of 0's	% of 0's	Total % 1+0	Ranking by <u>% 3+2</u> 42
1	5	11.90	12	28.57	40.47	14	33.33	11	26.19	59.52	10
2	10	23.81	14	33.33	57.14	16	38.91	2	4.76	43.67	6
3	22	52.38	10	23.81	76.19	8	19.05	2	4.76	23.81	2
4	15	35.71	16	38.10	73.81	7	16.67	4	9.52	26.19	3
5	4	9.52	5	11.90	21.42	16	38.10	17	40.48	78.58	15
6	14	33.33	17	40.48	73.81	10	23.81	1	2.38	26.19	3
7	3	7.14	16	38.10	45.24	19	45.24	4	9.52	54.76	9
8	6	14.29	8	19.05	33.33	21	50.00	7	16.67	66.67	13
9	6	14.29	10	23.81	38.10	17	40.48	9	21.43	61.91	11
10	10	23.81	11	26.19	50.00	11	26.19	10	23.81	50.00	7
11	5	11.90	21	50.00	61.90	12	28.57	4	9.52	38.09	4
12	1	2.38	5	11.90	14.28	27	64.29	9	21.43	85.72	16
13	4	9.52	11	26.19	35.71	20	47.62	7	16.67	64.29	12
14	11	26.19	9	21.43	47.62	14	33.33	8	19.05	52.38	8
15	3	7.14	9	21.43	28.57	13	30.95	17	40.48	71.43	14
16	5	11.90	9	21.43	33.33	20	47.62	8	19.05	66.67	13
17	9	21.43	16	38.10	59.53	14	33.33	3	7.14	40.47	5
18	18	42.87	15	35.71	78.58	5	11.90	4	9.52	21.52	1

Priority Rankings (Negative Statements)

Based on The Formula $N = \frac{i_1 + i_2}{n} \times 100^*$

Place	Qu.#	Statment
1	3	Need for an administrator plus other labor
2	18	Storage problems
3	4	Problems with central distribution of supplies
4	6	Price reduction occurs only at large quantities
5	17	Items ordered are limited to those used by several schools
6	2	Coordination of purchasing calendar between districts
7	11	Compromise on specifications
8	10	One large bill comes to administrative district
9	14	Poor quality of items
10	7	Lack of Knowledge on items available
11	1	Ability of district to pay when items arrive
12	9	Problems with local merchants
13	8	Warranty control problems
13	13	Loss of local district control
14	16	Insurance on items ordered and stored
15	15	Stealing
16	5	Companies don't bid when CO-OP is too large
17	12	No contact with sales representatives

* n - 126 possible points based on a statement receiving all 3 responses.

Raw Data. Priority Rankings (Negative Statements)

Based on The Formula $N = \frac{i_1 + i_2}{n} \times 100^*$

Place	Qu.#	# of 3's	X3	# of 2's	X2	Total #3+2	$\div 126$	X100
1	3	22	66	10	20	86	.68	68%
2	18	18	54	15	30	84	.67	67%
3	4	15	45	16	32	77	.61	61%
4	6	14	42	17	34	76	.60	60%
5	17	9	27	16	32	59	.49	49%
6	2	10	30	14	28	58	.46	46%
7	11	5	15	21	42	57	.45	45%
8	10	10	30	11	22	52	.41	41%
9	14	11	33	9	18	51	.40	40%
10	7	3	9	16	32	41	.33	33%
11	1	5	15	12	24	39	.31	31%
12	9	6	18	10	20	38	.30	30%
13	8	6	18	8	16	34	.27	27%
13	13	4	12	11	22	34	.27	27%
14	16	5	15	9	18	33	.26	26%
15	15	3	9	9	18	27	.17	17%
16	5	4	12	5	10	22	.17	17%
17	12	1	3	5	10	13	.10	10%

*n + 126 possible points based on a statement receiving all 3 responses.

Priority Rankings (Positive Statement)

Based on The formula $N = \frac{i_1 + i_2}{n} \times 100^*$

Place	Qu.#	Statement
1	15	Lower Prices
2	13	Increases bidder interest
3	7	Districts have an inventory to draw from
4	2	Less paperwork for districts
5	5	Bids prepared by an expert
6	6	Makes budgeting easier
6	9	Reduces transportation costs
7	10	Less time with sales representatives
8	3	Higher quality products
9	1	Reduces back orders
9	14	Supplies arrive at one time
10	4	Good service from sales representatives
11	11	Sources for idea exchange between districts
12	8	Reduces need for school storage area
13	12	Supplies jobs for special ed. students

*n = 126 possible points based on a statement receiving all 3 responses.

Raw Data. Priority Rankings (Positive Statements)

$$\text{Based on The Formula } N = \frac{i_1 + i_2}{n} \times 100^*$$

Place	Qu.#	# of 3's	X 3	# of 2's	X 2	Total #3+2	$\div 126$	X 100
1	15	38	114	3	9	123	.98	98%
2	13	22	66	15	30	96	.77	77%
3	7	19	57	18	36	93	.74	74%
4	2	16	48	18	36	84	.67	67%
5	5	17	51	16	32	83	.66	66%
6	6	15	45	17	34	79	.63	63%
6	9	17	51	14	28	79	.63	63%
7	10	18	54	12	24	78	.62	62%
8	3	15	45	15	30	75	.60	60%
9	1	11	33	20	40	73	.58	58%
9	14	13	39	17	34	73	.58	58%
10	4	12	36	14	28	64	.51	51%
11	11	11	33	14	28	61	.48	48%
12	8	11	33	12	24	57	.45	45%
13	12	2	6	8	16	22	.17	17%

*n = 126 possible points based on a statement receiving all 3 responses.

Overall Rankings (Positive Statements)

By Round Plus Formula*

Place	Qu. #	Total Pts.	Place Round 1	Place Round 2	Place Round 3	Place Formula
1	15	4	1	1	1	1
2	2	13	3	2	4	4
3	13	14	6	3	2	3
4	7	19	9	5	3	2
5	6	23	4	6	7	6
5	9	23	6	4	5	8
6	4	30	8	9	11	12
6	5	30	9	10	6	5
7	3	32	7	9	7	9
7	11	32	2	7	10	13
7	14	32	5	8	8	11
8	1	37	9	12	9	7
8	10	37	9	11	7	10
9	8	42	6	10	12	14
10	12	49	9	13	12	15

*The numbers given are the rankings attained in each round plus formula. Therefore, the lower the total of the horizontal line the higher the place.

Top Five Rankings by Round and Formula

Analysis. (Negative Statement).*

Place	Qu. #	Total Pts.	Place Round 1	Place Round 2	Place Round 3	Place Formula
1	18	8	3	1	3	1
2	3	10	4	3	1	2
2	4	10	1	2	4	3
3	11	18	2	4	7	5
4	6	19	7	5	3	4
5	2	24	6	6	5	7
6	17	26	6	8	6	6
7	7	35	8	7	10	10
8	14	37	9	11	8	9
9	13	38	5	8	12	13
10	10	39	9	13	9	8
11	1	44	8	12	13	11
11	9	44	12	9	11	12
12	8	50	11	14	11	14
12	16	50	10	12	13	15
13	12	53	11	10	14	18
14	15	54	12	12	14	16
15	5	58	12	14	15	17

* The numbers given are the rankings attained in each round plus the formula analysis. Therefore, the lower the total of the horizontal line the higher the place.