The Secondary Education Department of the College of Education, University of Arizona conducted research, using a modified Delphi technique, to seek clarification of the behavioral goals for its teacher education program. The technique was designed to develop a consensus among experts through successive questionnaires which permit the individual to rate the importance of variables until a consensus is reached. This specific research consisted of three questionnaires: a) an open-ended questionnaire, b) a summary of opinions obtained which the participant would rate according to their importance, and c) a questionnaire involving group ratings indicating areas of consensus. Respondents to the questionnaires included administrators, cooperating teachers, student teachers, college of education faculty, students, and college supervisors. (Details of specific questionnaire items and outcomes of the research are given in the conclusion.) (JB)
INTRODUCTION

"If you don't know where you are going, how do you know when you get there?" is as applicable to education as it is to many aspects of life itself. It is a "given" in the public school setting that the examination of the appropriateness of goals and objectives as measured against the needs of the clientele must precede program evaluation and change.

The Secondary Education Department of the College of Education, University of Arizona, has conducted a modified Delphi Technique research in order to seek clarification of the behavioral goals for its teacher education program. The Delphi Technique was developed by Olaf Helmer and his colleagues at the Rand Corporation. This technique is designed to develop a consensus of expert opinion through successive questionnaires which permit the individual to rate the importance of variables until a consensus appears to be reached.

At the beginning of the study, the research design was to utilize three questionnaires. The first was to consist of an open-ended questionnaire on which the participant was asked to "list from one to five items which they felt should receive major emphasis in the undergraduate teacher preparation program in secondary education at the University of Arizona." The second questionnaire would contain a summary of the opinions obtained, and the participant would be asked to rate or evaluate each item according to its importance. The third

questionnaire was to include the group ratings, indicating the areas of consensus, and permit each participant either to revise his original ratings or to indicate the reasons he did not agree with the consensus. (Actually only the first two questionnaires were used because of the high degree of consensus obtained on the second questionnaire.)

The next step was to identify individuals who would be in a position to be familiar with, and hence in a position to make valid judgements concerning, essential elements of the teacher preparation program. In this study all groups having a significant role in the teacher preparation programs were sampled to obtain the individuals who were to be sent questionnaires. The following groups were included: building principals of secondary schools having student teachers from the department; cooperating teachers currently having a student teacher assigned to them; student teachers; College of Education faculty including all members of the Secondary Education Department along with a sampling from other departments involved in teacher preparation; undergraduate students currently enrolled in the general methods courses but not yet enrolled in student teaching; and college supervisors who supervise student teachers and who come from many subject matter disciplines on the University campus. In all, 260 individuals were selected.

FIRST QUESTIONNAIRE

The population identified was sent the first questionnaire along with a letter explaining that the department was undertaking a serious study and evaluation of its teacher preparation program. The design of the study was presented and each individual was asked to provide his expert opinion as concisely as possible as to items he felt should receive major emphasis in the undergraduate secondary education teacher preparation program. The per cent of responses to the first questionnaire is shown in Table I.
TABLE I
NUMBER OF FIRST QUESTIONNAIRES SENT AND RETURNED

<table>
<thead>
<tr>
<th>Category</th>
<th>Number Sent</th>
<th>Number Returned</th>
<th>Per cent Returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrators</td>
<td>53</td>
<td>35</td>
<td>66%</td>
</tr>
<tr>
<td>Cooperating Teachers</td>
<td>41</td>
<td>23</td>
<td>56%</td>
</tr>
<tr>
<td>Student Teachers</td>
<td>41</td>
<td>14</td>
<td>34%</td>
</tr>
<tr>
<td>College of Ed. Faculty</td>
<td>38</td>
<td>26</td>
<td>68%</td>
</tr>
<tr>
<td>Students</td>
<td>37</td>
<td>25</td>
<td>68%</td>
</tr>
<tr>
<td>College Supervisors</td>
<td>41</td>
<td>20</td>
<td>49%</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>251</strong></td>
<td><strong>143</strong></td>
<td><strong>57%</strong></td>
</tr>
</tbody>
</table>

Virtually all respondents listed five items and there were over 700 separate suggestions for matters which should receive major attention in the undergraduate program. A committee of faculty members from the Secondary Education Department met to categorize and combine into generic statements these 700 separate suggestions. There was much repetition of ideas and it was possible to combine the total number into a listing of 71 statements. All ideas submitted by two or more persons were included in this listing which became the basis of the second questionnaire.

SECOND QUESTIONNAIRE

Each participant in the study was sent a second questionnaire along with instructions to indicate their opinion of the relative importance of each of the 71 items as a goal for the secondary teacher education program by circling the appropriate number. The scale of importance was as follows:

1 - not needed, lowest priority, should receive little or no attention

2 - not significant but desirable, may receive limited attention, of minimal importance, below average priority

3 - needed, somewhat significant, relatively important, should receive some attention, average priority

4 - endorsee, significant, very important, should receive better than average emphasis
5 - strongly endorse, highly significant, essential, should receive major emphasis, highest priority

The rate of returns on the second questionnaire is shown in Table II.

TABLE II
NUMBER OF SECOND QUESTIONNAIRES SENT AND RETURNED

<table>
<thead>
<tr>
<th>Category</th>
<th>Number Sent</th>
<th>Number Returned</th>
<th>Per cent Returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrators</td>
<td>53</td>
<td>41</td>
<td>77 %</td>
</tr>
<tr>
<td>Cooperating Teachers</td>
<td>44</td>
<td>32</td>
<td>73 %</td>
</tr>
<tr>
<td>Student Teachers</td>
<td>41</td>
<td>23</td>
<td>56 %</td>
</tr>
<tr>
<td>College of Ed. Faculty</td>
<td>39</td>
<td>29</td>
<td>74 %</td>
</tr>
<tr>
<td>Students</td>
<td>42</td>
<td>36</td>
<td>86 %</td>
</tr>
<tr>
<td>College Supervisors</td>
<td>41</td>
<td>30</td>
<td>73 %</td>
</tr>
<tr>
<td>TOTALS</td>
<td>260</td>
<td>191</td>
<td>74 %</td>
</tr>
</tbody>
</table>

The results were tabulated separately for each category of respondents as well as being combined into a composite rating. One rather significant result was the high degree of similarity among the ratings given the various suggestions by each of the groups. This high degree of agreement was not anticipated, but since it did occur it was decided not to send out the proposed third questionnaire. This decision was made since the primary role of this research was to locate areas of consensus for the purpose of clarifying the behavioral goals sought by the department. This decision made it no longer possible to make an analysis of clearly reasoned minority opinion.

ITEMS RECEIVING THE HIGHEST PRIORITY

Sixteen of the 71 items received a modal rating of 5 in the composite ratings indicating that the respondents place highest priority on them. The sixteen are listed below. The mean values of the ratings by the 191 respondents are included in parentheses so that one can see the relative rating of each item. The first seven of these represent skills rated as highly significant in
graduates while the other nine refer to organizational matters in the Secondary Education Department.

**Student Directed**

1. Developing a genuine concern for students. (4.61)
2. Developing skills in getting along with people. (4.44)
3. Learning varieties of teaching techniques. (4.42)
4. Planning curriculum to meet the needs of pupils. (4.39)
5. Developing competency in speech skills. (4.29)
6. Developing skills in classroom control. (4.06)
7. Recognizing need for continuing professional growth. (4.01)

**Departmentally Directed**

8. Providing early exposure to actual teaching situations as a basis for career selection. (4.45)
9. Providing observation in a variety of schools and situations. (4.25)
10. Beginning classroom observation early in college career. (4.19)
11. Organizing education courses on a practical rather than a theoretical basis. (4.11)
12. Developing awareness of present day schools on part of professors. (4.10)
13. Providing guidelines for cooperating teachers. (4.03)
14. Screening student teacher candidates carefully. (3.94)
15. Taking at least one methods course in the major subject matter areas. (3.92)
16. Establishing a one-semester full-day building assignment including student teaching and methods. (3.70)

The first seven items were examined carefully by members of the faculty teaching undergraduate courses to ascertain if the needs were being adequately met. The entire department examined the latter portion of the list to determine if any organizational changes were called for.
Each of these sixteen items received modal ratings of four or five by all categories of participants with only five exceptions. Item 5, developing competency in speech skills, and item 7, recognizing need for continuing professional growth, received modal ratings of 3 by undergraduate students. Item 14, screening student teacher candidates carefully, and item 16, establishing a one-semester full-day building assignment including student teaching and methods, received modal ratings of 3 and 2 respectively by student teachers. Item 18, providing guidelines for cooperating teachers, received a modal rating of 3 by cooperating teachers. With these few exceptions there is distinct agreement in highest endorsement of these sixteen items by each group in the sample population.

ITEMS RECEIVING HIGH PRIORITY

There were an additional 34 items which received a modal rating of 4 from the 191 individuals responding to the second questionnaire. This would indicate they were felt to be significant, very important, and should receive better than average emphasis. Again, these will be categorized into those directed towards students and those directed toward organizational matters in the Secondary Education Department:

**Student Directed**

1. Learning motivational techniques. (4.21)
2. Conducting classroom discussions. (4.12)
3. Developing teacher self-evaluation skills. (4.03)
4. Knowing the range of materials within a subject matter discipline. (4.00)
5. Demonstrating originality and creativity. (3.98)
6. Developing techniques of evaluating student performance. (3.97)
7. Devising appropriate teaching strategies. (3.96)
(8) Learning the professional and ethical responsibilities of teachers. (3.95)

(9) Stressing in-depth knowledge of the subject matter. (3.91)

(10) Studying learning theory. (3.89)

(11) Developing knowledge and understanding of the culturally and ethnically diverse. (3.87)

(12) Studying normal adolescent behavior. (3.87)

(13) Planning individualized instruction. (3.85)

(14) Developing questioning techniques. (3.84)

(15) Developing competence in counseling students. (3.82)

(16) Participating in group processes. (3.71)

(17) Conducting group processes. (3.68)

(18) Developing competency in writing ability. (3.67)

(19) Understanding the non-instructional responsibilities of the teacher. (3.64)

(20) Developing knowledge and understanding of local, state, and national problems. (3.60)

(21) Constructing teaching units and lesson plans. (3.49)

**Departmentally Directed**

(22) Exposing the student teacher to a variety of cultural influences in several different school settings. (3.95)

(23) Establishing close relationships between the college supervisor and cooperating teacher. (3.92)

(24) Orienting the student teacher to his role. (3.88)

(25) Requiring students to display maturity in attitude and actions. (3.87)

(26) Stressing observation experiences. (3.85)

(27) Developing lines of communication between schools and college. (3.82)

(28) Apprising students of job trends in education. (3.81)

(29) Observing model teaching presentations within a subject matter discipline. (3.73)
(30) Observing model teaching situations. (3.68)

(31) Demonstrating practical applications of educational theory in methods classes. (3.67)

(32) Apprising students of new teaching areas. (3.64)

(33) Developing teaching majors which reflect the content of the courses taught in secondary schools. (3.61)

(34) Limiting admission to students who demonstrate an interest in and ability to relate to young people. (3.49)

Each of the 34 items listed above received modal ratings of 3, 4, or 5 by each group of respondents with the exception of two items. Item 21, constructing teaching units and lesson plans, received a rating of 2 by the student teachers. Item 34, limiting admission to students who demonstrate an interest in and ability to relate to young people, received a rating of 1 by the student teachers. In spite of the fact that the rest of the groups seem to feel this might be desirable, the student teachers as a group felt that it was not needed and should receive little or no attention.

The 34 items identified in the above grouping were carefully analyzed by the Secondary Education Department to ascertain if any of these suggestions were not being properly met in the present program.

**ITEMS RECEIVING AVERAGE PRIORITY**

Additionally, 19 of these items received overall modal ratings of 3 indicating that they are somewhat significant, should receive some attention, and were of average priority. As in the other lists, these will be divided into two categories, one directed toward students and the other toward the Secondary Education Department.

**Student Directed**

(1) Understanding the nature of the major disciplines taught in the secondary schools. (3.39)

(2) Developing competence in dealing in school with drug abuse problems. (3.38)
(3) Acquiring competence in audio-visual techniques. (3.38)
(4) Showing a willingness to conform to values and policies of the community and school. (3.28)
(5) Writing behavioral objectives. (3.18)
(6) Recognizing the ethical responsibility to take stands on controversial issues. (3.12)
(7) Understanding and participating in sensitivity groups. (2.43)

Departmentally Directed
(8) Synchronizing school and college calendars for student teachers. (3.46)
(9) Having the subject matter department responsible for certifying the candidate's subject matter competency. (3.27)
(10) Taking (requiring) a methods course in the teaching minor. (3.13)
(11) Completing the teaching major before student teaching. (3.13)
(12) Developing knowledge of school finance, law, and community structure. (3.07)
(13) Studying the philosophical foundations of education. (3.03)
(14) Requiring the students to meet school and professional standards for personal appearance. (2.98)
(15) Lengthening the time period of student teaching to a full academic year. (2.94)
(16) Screening prospective teachers on the basis of attitudinal tests. (2.87)
(17) Requiring student teaching in both the major and minor subject areas. (2.85)
(18) Screening students on the basis of their grade point averages. (2.54)
(19) Studying the history of education. (2.37)

The 19 items in this list generally received modal ratings of 2, 3, or 4 by each category of participants with ratings of 3 or 4 predominating. However, there were more cases of divergence of opinion among the various groups of respondents than were found in those items receiving higher ratings.
In several instances, one or more of the groups ranked items in this category as being of highest priority. Student teachers awarded a ranking of 5 to item 2, developing competence in dealing in school with drug abuse problems. Item 6, recognizing the ethical responsibility to take stands on controversial issues, received a rating of 5 by college supervisors. With regard to item 8, synchronizing school and college calendars for student teachers, cooperating teachers, student teachers and College of Education faculty all gave it a modal rating of 5. College supervisors also gave 5 ratings to item 9, having the subject matter department responsible for certifying the candidate's subject matter competency, and to item 10, taking a methods course in the teaching minor.

Several of the items were found to have received extremely low ratings by one or more of the categories of respondents. Item 7, understanding and participating in sensitivity groups, was rated 1 by both College of Education faculty and college supervisors. Item 12, developing knowledge of school finance, law, and community structure, received 1 ratings by cooperating teachers, student teachers, and college supervisors. College supervisors also gave the lowest rating of 1 to item 17, requiring student teaching in both the major and minor subject areas. Item 19, studying the history of education, was awarded ratings of 1 by both cooperating teachers and student teachers.

The items in this category received modal ratings of 3 by the total group of respondents indicating that these things are somewhat significant and should receive some attention. In several cases the mean values were below 3.00 indicating that one and two ratings outnumbered four or five ratings. While these nineteen items do not carry the priority ratings of those items receiving ratings of 4 and 5, they were evaluated to ascertain their significance in the teacher education program.
ITEMS RECEIVING LOWEST PRIORITY

No items on the questionnaire received modal ratings of 2 while two items received modal ratings of 1, indicating a general negative attitude toward their significance in the secondary education teacher preparation program. These two items were:

(1) Limiting admission to College of Education according to availability of teaching positions for graduates. (2.23)

(2) Developing conversational fluency in a foreign language. (2.21)

Although these were suggested on questionnaire one by two or more persons as items which should receive major emphasis in the undergraduate teacher education program, the respondents in this survey rejected these concepts. Since they were the only two receiving such low ratings, special attention was paid to them. The second item seems to cast considerable doubt as to the value of the present foreign language requirement so far as our respondents were concerned. This item received a 1 or 2 rating by each group surveyed with the exception of undergraduate students who gave it a 3 rating.

CONCLUSION

The research techniques utilized in this study proved to be an effective way to identify essential elements in a teacher education program. A high degree of consensus was shown on the second questionnaire by each group of respondents: administrators, cooperating teachers, student teachers, College of Education faculty, students, and college supervisors. This agreement was particularly close on items receiving over-all favorable ratings.

When the secondary education faculty analyzed the results of the study a number of the items receiving modal ratings of 4 or 5 were judged as being satisfactorily handled in the existing program. The other items receiving high ratings were carefully evaluated to determine which ones could and should be put into operation. For example, the need to provide early exposure to
classroom observation was judged to be a valid objective not presently being met. Elective observational experiences were made available for freshman and sophomore students. The department also felt that valuable early exposure to actual teaching situations could be supplemented vicariously through the media of videotape. A videotape library of actual teaching experiences was developed.

In addition the department revised its stated objectives in more behavioral terms using the results of this study as a point of de...e. Once the statement was formalized it could then be used as a basis for evaluating the teacher education program. This evaluation is an on-going, continuous process.