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ABSTRACT

This study assessed whether the Academic Misconduct Survey (AMS) can distinguish groups of teacher education students relative to their propensity toward various forms of misconduct. Focus was on identifying clusters of persons within each school who had a propensity toward the various academic misconduct constructs. The AMS includes 41 Likert-type items that measure academic misconduct across 5 constructs. In the spring of 1991, the AMS was administered to 90 undergraduate teacher education students enrolled in foundations of education classes in 1 large urban state university, 1 small rural state university, and 1 small private religious college in the southern United States. Data from 15 students in each school were used in the analyses, for a total sample of 45 students. Separate Q-technique factor analytic procedures were conducted for each sample. Several identifiable person factors emerged across these various analyses. Similarities in results across the three samples suggest that the results are due to systematic differences in people rather than spurious correlations attributable to sample bias. Students across the three schools give higher ratings to items pertaining to quasi-misconduct, cheating on tests and assignments, and use of illegal resources. There were fewer occurrences of use of illegal resources. Individuals across schools gave lower ratings to items related to subtle manipulation and bold manipulation. Six tables and an appendix listing AMS items are included. (Author/RLC)

# ASSESSING TEACHER EDUCATION STUDENTS' PROPENSITY TOWARD ACADEMIC MISCONDUCT



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## ABSTRACT

Researchers have often noted the desirability of investigating the incidence of academic misconduct of college students who will be in employment fields requiring a high level of competence and/or demanding a high level of personal integrity (e.g., elementary and secondary teachers). The author describes a study to determine whether the Academic Misconduct Survey (AMS) can be useful in distinguishing groups of teacher education students relative to their propensity toward various forms of misconduct. The AMS was administered to teacher education students in three different institutions. Separate Q-technique factor analytic procedures were conducted for each sample. Several identifiable person factors emerged across these various analyses.

Assessing Teacher Education Students'

Propensity Toward Academic Misconduct

Haines, Diekhoff, LaBeff, and Clark (1986, p. 342) have noted that "it is unlikely that those associated with academia for any length of time would deny the presence of student cheating." Similarly, Michaels and Miethe (1989, p. 870) acknowledged that "cheating is considered a significant problem because of its frequency, and because it interferes with conventional learning and evaluation processes." According to Michaels and Miethe, "academic cheating is viewed by students as part of the larger game of beating the system" (p. 883). Moreover, these authors believe that academic dishonesty may generalize to other organizational settings and that those who cheat in college may rely on similar adaptations in carrying out their responsibilities in their careers. Hence, Fass (1986) suggested that academic dishonesty should not be ignored or tolerated, and that academic and professional ethics must be promoted if an institution of higher learning ". . . is to be regarded as a community in which it is legitimate to hold students to the highest standards of behavior in their academic work" (p. 35).

Professional Ethics Among Educators

Professional ethics has been defined as "all issues involving ethics and values in the roles of the professions and the conduct of the professions in society" (Rich, 1985, p. 21). It has been noted by several researchers (e.g., Goodlad, Soder, & Sirotnik, 1990; Rich, 1984; Strike & Soltis, 1985; Tom, 1984) that students should learn to respect and adopt the intellectual ethics of their colleges or universities if they are expected to exhibit respect for

the ethics in their professional communities or personal relationships. For instance, the student-teacher relationship has been described by Tom (1984, p. 76) as "inherently moral" because the teacher is expected to assume moral responsibility for the student. Teachers are also obligated to protect honest students and to uphold institutional regulations (Rich, 1984). Hence, the fact that teachers function as "moral educators" cannot be avoided (Howe, 1986, p. 5).

Furthermore, Rich (1985) noted that without high standards of professional ethics, teaching will never be regarded as an "authentic" profession nor will parents want to entrust their children to teachers. Rich implied that the development of a generally accepted code of professional ethics will promote teaching as a "true" profession.

If a higher standard of ethical behavior within teaching is to emerge, individuals training to become teachers must resist engaging in academic misconduct since academic misconduct threatens the personal and professional integrity of the persons entering teaching (Rich, 1984). As future professionals, it is necessary for graduating teacher education students to bring to their career their own personal standards of integrity (Daniel, Blount, & Ferrell, 1991). As Daniel et al. have noted:

> College faculty would be wary of placing in the classroom a recent graduate who had purchased a pre-written term paper for a foundations of education course or who had plagiarized the teaching unit developed in the methods of teaching social studies class. Obviously, the knowledge base and skill levels of such individuals would be held suspect. (p. 107)

Moreover, Ellis, Cogan, and Howey (1991) recognized that "There is something implicit in the role of a teacher that calls for high moral character and positive social values. . . .[A] true professional aspires to conduct of the highest ethical standards, shunning even the hint of impropriety" (pp. 35-37).

Soltis (1986) also acknowledged the need for beginning teachers to possess a general sense of moral etiquette:

> When a person becomes a member of a profession, he or she joins a historical community of practice with a telos, a general purpose, that one must be committed to in order to be a professional. . . .[I]n the tradition of a practice like teaching, certain standards of conduct and of manner develop in support of the telos and become recognized as a desirable part of the moral climate of the practice. In the treatment of students, of subject matter, and of colleagues, honesty, truth, and justice become central virtues of the practice. (p. 2--emphasis added)

## Purpose

Since the future of the teaching profession seems to depend on the personal integrity of teachers, a concern for the academic behavior of teacher education students is warranted. Therefore, the purpose of the present study was to identify different orientations of teacher education students relative to academic misconduct. Specifically, Q methodology was used to determine whether a set of attitudinal items could be used to identify prototypic clusters of these students as regards their propensity toward engaging in academic misconduct. The analyses presented herein are part of a larger work which was purposed to develop and apply instrumentation relative to the academic misconduct construct (Ferrell, 1992).

## Methodology

### Sample Selection

The sample consisted of 90 undergraduate teacher education students enrolled in foundations of education classes in two universities and a private religious college in the southern United States. The School I cohort was enrolled in a small comprehensive state university located in a rural setting ($n = 27$). Respondents in School II were from a small private religious college ($n = 31$). School III subjects attended a large comprehensive state university in an urban setting ($n = 32$).

### Instrumentation

An instrument called the Academic Misconduct Survey (AMS) (Ferrell, 1992) was used to measure the self-reported cheating behaviors of the respondents. The AMS consists of 41 Likert-type items which measure academic misconduct across five constructs. Factor I items dealt with cheating on tests and assignments both inside and outside the classroom. Hence, this factor was called "cheating on tests and assignments." In general, most of the items in Factor II involved behaviors related to lying about the source of information or stealing information or materials. Hence, this factor was named "use of illegal resources." Factor III consisted of behaviors identified in previous research as not necessarily deviant or else considered as only minor breaches of student integrity. Consequently, it was labeled "quasi-misconduct." Most of the behaviors in Factor IV could be classified as subtle attempts to influence the professor. Therefore, Factor IV was called "subtle manipulation." Finally, the items in Factor V were also manipulative behaviors but were more aggressive than those behaviors addressed in Factor IV. Thus, this factor was called "bold

manipulation." Items included in the survey are presented in the Appendix. Results of procedures to establish the reliability and construct validity of the AMS are reported by Ferrell (1992).

Data Collection and Analysis

In the spring of 1991, data were collected during regular class sessions from undergraduate teacher education students at the selected institutions. Students were informed of their option to participate in the study and complete anonymity of responses was assured. These data were analyzed using Q methodology, a family of factor analytic procedures for clustering persons across a given set of items. A description of the data collection procedures is presented, following a brief discussion of Q methodology. An excellent introductory treatment of Q-technique factor analysis is provided by Carr (1992).

In his seminal work, The Study of Behavior: Q-Technique and Its Methodology, Stephenson (1953) noted that in certain research situations, it may be more important to examine the relationships among people than among variables, and he suggested that Q methodology can be applied to almost any problem area in the social sciences (e.g., theories of personality, studies of attitudes and beliefs, psychoanalysis). Q-technique is useful in identifying clusters or types of individuals according to the commonality of their responses on items in a given data set (Stephenson, 1953). This method is employed to intercorrelate and factor analyze the responses of persons on an instrument using an "inverse" raw data matrix in which persons define the columns and variables define the rows. Kerlinger (1979) refers to the resulting factors as "persons' factors" (p. 200). These persons' factors, or person-prototypes (Lorr, 1983), are the groups of subjects who respond differently from

other subjects on a given set of items. The main focus of Q methodology is on these correlations among individuals (Kerlinger, 1979). Several researchers (e.g., Edwards, 1957; McCollum & Thompson, 1980; Thompson, 1980) have noted that Q-technique is especially helpful when subjects' responses are prone to be biased by "social desirability," as was potentially the case in the present study since academic misconduct is usually considered to be deviant.

Generally, Q methodology data are collected by having subjects sort an array of stimuli (e.g., individual items each printed on a series of cards) into hierarchically arranged piles. In the present study, by contrast, responses were recorded on a printed instrument using an "unnumbered graphic scale" (Thompson, 1981) as indicated in Figure 1. This

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Figure 1
Illustration of Response Format

Sample Item:

SINCE ENTERING COLLEGE, HAVE YOU. . .

shared answers with someone during a test?

Never---------- | ---Very Frequently

This response indicates a rather frequent occurrence of this behavior

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procedure allows for greater variability in scores (Carr, 1989; Daniel, 1989a; Thompson, 1981) and ratings can be easily converted to item rankings in order to conduct a Q-technique analysis. In addition, this data collection technique has been shown "to yield fewer, more reliable, and more interpretable person factors" (Daniel, 1989b, p. 195).

Therefore, in the present study, respondents were instructed to draw a vertical line through the scale at the point between "Never" and "Very Frequently" that best represented their perception of their degree of involvement in each behavior. Respondents' ratings of the items were converted to ranked data, with the leftmost mark receiving a rank of "1" while the rightmost mark received a rank of "41." These rankings of the 41 items formed the rows on the raw data matrix, while the persons defined the columns. These data were then intercorrelated and factor analyzed using the SPSSx FACTOR procedure to test the following null hypothesis: No identifiable clusters of people will emerge when responses on the Academic Misconduct Survey for individuals within each of the selected institutions are intercorrelated and factor analyzed using the Q-technique.

As previously noted, the number of surveys completed in School I, School II, and School III were 27, 31, and 32 respectively. Thus, the total number of subjects who participated in the present study was 90. However, many of the respondents tended to mark all of the items to the far left end of the unnumbered graphic scale (signifying they "Never" engage in the behaviors). Therefore, data from only 15 respondents in each school were used in the analyses (total $n = 45$). Generally, the selection of specific completed surveys for inclusion in an analysis might be considered "data snooping." However, for the purpose of the Q-technique factor analyses in the present study, this procedure was warranted. An inspection of the data indicated that the respondents with minimal intraindividual variance could be considered an obvious group of "self-proclaimed noncheaters." Hence, these respondents were determined prior to the analyses to represent a distinct cluster and were not

included in the analyses as it would have been difficult if not impossible to convert their ratings on the items to ranks.

A separate Q-technique factor analysis was performed for each school in which the data were collected using the data from the 45 respondents with appreciable intraindividual variance. The purpose of these analyses was to attempt to identify clusters of persons within each school who had a propensity toward the various academic misconduct constructs assessed using the Academic Misconduct Survey and to test the previously stated null hypothesis. The three Q-technique factor analyses were performed using the SPSSx FACTOR procedure. Factors were extracted using the principal components method, and results were rotated to the varimax criterion. Based on the magnitude of eigenvalues and factor "scree" plots (Cattell, 1966), two factors were extracted across each of the groups, and persons were identified with factors based upon a minimum factor structure coefficient criterion of $| .50 |$.

Once person factors were determined in a given school, standardized regression factor scores were utilized to determine which items contributed to the emergence of each of the person factors, and thereby to determine the type or types of misconduct persons in a given factor were more likely or less likely to engage in. In Q-technique analysis, regression factor scores serve as z-scores for each of the items on each of the factors. Q-technique factor scores indicate "the degree to which individuals within a given sample deviate from the mean response on a given item where these deviations help to differentiate the clusters of persons" (Daniel, 1989a, p. 148). Thus, for the purposes of interpreting the person factors obtained in the factor analyses performed on the data in the present study, items with factor

scores greater than | 1.000 | were examined. The purpose of selecting this criterion score was to identify which items appropriately defined each person factor as opposed to those items that were merely spuriously divergent. A higher measure (> | 1.000 | ) presented a possibility of eliminating too many items from the person profiles. On the other hand, a lower criterion (< | 1.000 | ) increased the likelihood that the clusters would not be clearly differentiated.

In the present study, a negative factor score with an absolute value greater than 1.000 indicated that the respondents admitted to having engaged in the behavior less frequently than having engaged in behaviors with positive factor scores. Conversely, positive factor scores greater than +1.000 indicated a greater propensity to engage in the behavior as compared to respondents in other clusters. Respondents who reported participation in a certain type of misconduct to a greater or lesser degree than the rest of the group were differentiated by a factor score greater than | 1.000 | . It is appropriate to note that these self-reported behaviors do not necessarily occur consistently. These data merely indicate a tendency for these groups of people to behave in a certain way.

## Results

School I. The initial analysis of the data from School I ($n$ = 15) yielded three factors with prerotational eigenvalues greater than one. An examination of the scree plot of the eigenvalues indicated the appropriateness of a two-factor solution. Hence, both two- and three-factor solutions were attempted. An examination of the rotated factor matrix and the factor scores for these two solutions indicated that the two-factor solution, which explained 53.2% of the prerotational variance, was the most interpretable.

Fourteen (14) of the 15 individuals in School I were identified with at least one of the two factors using a minimum factor structure coefficient of | .50 | . Person 7 was not identified with either Factor I (.23200) or Factor II (.38438), and Person 14 was correlated with both Factor I (.53076) and Factor II (.56244). Upon inspection of the data it was noted that these two persons had very little intraindividual variance on their instruments. The rotated factor matrix for this solution is presented in Table 1, and the factor scores for this solution are presented in Table 2.

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Insert Tables 1 and 2 about here

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Factor I (Persons 2, 3, 4, 5, 6, 8, 10, 11, 14, and 15) had a prerotational eigenvalue of 6.5348 and explained 43.6% of the variance across the solution. Factor II (Persons 1, 9, 12, 13, and 14) had a prerotational eigenvalue of 1.4464 and explained 9.6% of the total variance.

School II. The initial principal components analysis for School II ($n$ = 15) indicated that there were three factors having prerotational eigenvalues greater than one. Analysis of the scree plot of the eigenvalues suggested the appropriateness of a two-factor solution. The two-factor solution was deemed interpretable once results were rotated using the varimax procedure. These two factors accounted for 50.2% of the explained variance. Using a minimum factor structure coefficient value of | .50 | , 14 of the 15 persons were classified into one of the two factors.

Factor I had a prerotational eigenvalue of 5.596 and accounted for 37.3% of the variance across the solution. This factor consisted of Persons 1, 2, 3, 6, 8, 9, 10, 11, 12,

and 15. Factor II had a prerotational eigenvalue of 1.9379 and explained 12.9% of the total variance. Factor II consisted of Persons 4, 5, 7, and 14. Person 13 was not strongly correlated with either factor. The varimax rotated factor matrix for this solution is presented in Table 3, and factor scores for each of the items are presented in Table 4.

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Insert Tables 3 and 4 about here

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School III. The initial principal components analysis of the data from School III ($n$ = 15) yielded three components with prerotational eigenvalues greater than one. An examination of the scree plot of the eigenvalues indicated a two-factor solution accounting for 56.8% of the explained variance. Hence, the two-factor solution was interpreted. Fourteen (14) of the fifteen individuals in this sample were classified into one of the two factors using a minimum factor structure coefficient criterion of $|.50|$. The varimax rotated factor matrix for this solution is presented in Table 5, and factor scores for each of the items are presented in Table 6.

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Insert Tables 5 and 6 about here

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Factor I (Persons 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, and 15) had a prerotational eigenvalue of 7.1925 and explained 48% of the variance across the solution. Factor II (Persons 1 and 14) had a prerotational eigenvalue of 1.3269 and explained 8.8% of the total variance. Person 8 was not identified with either factor.

## Discussion

As previously noted, the School I cohort was enrolled in a small comprehensive state university located in a rural setting. Respondents in School II were from a small private religious college. School III subjects attended a large comprehensive state university in an urban setting. As the following discussion will demonstrate, the person factors which emerged across the three schools shared many of the same characteristics. These commonalities are especially interesting since the institutional settings were diverse enough that one might have intuitively expected systematic differences in group characteristics across the three settings.

Individuals in School I, Factor I indicated a propensity toward the "use of illegal resources" and behaviors related to the "quasi-misconduct" construct. The person cluster in School I, Factor II indicated an orientation toward "cheating on tests and assignments." Interestingly, persons in School II, Factor I and School III, Factor II also had high ratings on items related to "cheating on tests and assignments." Persons in School II, Factor II identified "quasi-misconduct" as their primary mode of unacceptable behavior (Items 17, 19, 20 and 21). The items which differentiated this factor were common to School III, Factor I (Items 17, 19, 20, 21, and 25).

Persons across all three schools gave higher ratings to items pertaining to "quasi-misconduct," "cheating on tests and assignments," and "use of illegal resources." However, there were fewer occurrences of "use of illegal resources." Conversely, individuals across schools gave lower ratings to items related to "subtle manipulation" and "bold manipulation." It should be noted that lower ratings do not indicate that the persons never engaged in the

behavior. These ratings do, however, indicate that the persons tended to engage in these behaviors less frequently than they would behaviors expressed in the items with higher rankings and less frequently than the other identified clusters.

In addition to these similarities in results across the three schools, each group also contained the previously mentioned cohort of respondents with minimal intraindividual variance who were not included in the Q-technique factor analyses. The presence of this group of "self-proclaimed noncheaters," common across the three different types of institutions in three different settings, suggests that a large number of students in the settings perceive themselves as ethically upstanding, and indeed are worthy entrants to the teaching profession as noted by Soltis (1986).

## Conclusion

The fact that there were remarkable similarities across the findings of the three separate Q analyses is noteworthy. As Neale and Liebert (1980) have explained, "A particularly important step in factor-analytic research is replication. Because of the complex mathematics, factor analyses do not always produce results that are repeatable. Therefore, replication is essential before the results can be confidently accepted" (p. 101). Even though the present study is but one attempt to explore the academic misconduct construct, the study was distinguished by examining Q-factors across three diverse samples in separate analyses. The similarities in results across these samples suggest that the results are due to systematic differences in people rather than spurious correlations attributable to sample bias. That these separate results appear to replicate one another lends credibility to the notion that the results are generalizable.

Although academic misconduct was not perceived to be a major problem among students in education in the three observed samples, at least half of the teacher education students in the present study were classified into groups which indicated a propensity toward various types of academic misconduct. Since recent research has been aimed at determining how to prevent misconduct from occurring (e.g., Fass, 1986; Nucci & Pascarella, 1987), institutions of higher learning may need to identify these people and plan special intervention strategies to deal with them or even methods to weed them out of the teacher education program based on the need for ethical persons in the field of education (Ellis et al., 1991). Also, as noted by Daniel et al. (1992, p. 721), "If it is assumed that students who cheat will be poorly prepared for their life's work, the relationship between academic misconduct in college and the ultimate job performance of teacher education graduates needs to be explored in comprehensively designed longitudinal studies."

Finally, the results of the present study suggest the cautious use of the graphic scale when conducting Q-technique studies in sensitive areas such as academic misconduct. In the past, the unnumbered graphic scale has been shown to be a superior data collection strategy when compared with the traditional Q-sort (Carr, 1989; Daniel, 1989a; Thompson, 1981). Using this method, ratings can easily be converted to rankings which generally result in "larger standard deviations, higher reliabilities of items, and ultimately greater reliability of factors" (Daniel, 1989b). However, it appears that much of the variability was lost when this method was employed in the present study. Possibly, the "mediated-ranking procedure" suggested by Thompson (1980) would have provided more variability than the unnumbered

graphic scale in that respondents would have been required to choose categories for specific behaviors and to rank the cards within each category.

Yet, a different data collection technique may not have necessarily altered the results. The fact that there was an obvious group of "self-proclaimed noncheaters" could indicate that many of the persons entering teaching possess a high level of personal integrity and therefore would not engage in any type of misconduct. Thus forcing these 45 respondents to have sorted the behaviors they never engage in would have resulted in an impossible task. At any rate, further exploration of the effects of various Q-technique data collection strategies on academic misconduct data is warranted.

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## Appendix

### Items Included in the Academic Misconduct Survey

SINCE ENTERING COLLEGE, HAVE YOU. . .

(1) copied answers from another student during an exam? (Factor I)
(2) copied from a "crib sheet" during a quiz or exam? (Factor I)
(3) created or made use of a "test file" when the teacher did not permit keeping copies of exams? (Factor I)
(4) bought gifts (e.g., garden produce, vacation acquisitions, trinkets) for a professor in hopes of influencing a higher grade? (Factor IV)
(5) asked another student who has previously taken an exam for the answers prior to your taking the test? (Factor I)
(6) "padded" the bibliography of a paper with sources which you have not read in order to make the effort expended in writing the paper seem more intensive? (Factor I)
(7) made up sources for bibliographic citations in a paper? (Factor I)
(8) copied directly large sections of a published work for inclusion in a written assignment without giving credit to the author? (Factor I)
(9) obtained access to an unauthorized copy of a test prior to the test being given? (Factor I)
(10) phoned a professor on some pretense in hopes of influencing a higher grade? (Factor IV)
(11) removed pages from a reserved reading file rather than make copies for your own use? (Factor IV)
(12) permitted another student to look at your test paper or answer sheet during an exam? (Factor I)
(13) offered exaggerated accounts of personal problems (e.g., hospitalization, automobile breakdown) to a professor in hopes of influencing a higher grade? (Factor IV)
(14) copied a homework assignment from someone in another section of the class? (Factor I)
(15) visited a professor after an exam to bias grading? (Factor IV)
(16) written a research paper for another student? (Factor II)
(17) read a condensed version of a novel/play/etc. rather than the assigned full-length version? (Factor III)
(18) consciously memorized a block of questions on an exam, so that they could be included in a test file for later use by others? (Factor III)
(19) consciously memorized a block of questions on an exam, so that you could review them at a later date? (Factor III)
(20) had a term paper typed and corrected for errors in style, language, grammar, etc., when these elements were <u>not</u> being graded? (Factor III)
(21) had a term paper typed and corrected for errors in style, language, grammar, etc., when these elements <u>were</u> being graded? (Factor III)

(22) obtained a copy of an exam by having a student who is not enrolled in the class "sit for" the exam or quiz and not turn in a paper? (Factor V)
(23) looked at another student's examination responses and kept your answer if both your answers were the same? (Factor I)
(24) been sexually intimate with a professor in return for a grade? (Factor IV)
(25) based an "article report" on the abstract rather than reading the entire article? (Factor III)
(26) asked another student to take an exam for you? (Factor II)
(27) exchanged test papers with someone during an exam? (Factor I)
(28) allowed another student to copy from your paper during an exam? (Factor I)
(29) copied a few phrases or sentences from a published work for inclusion in a written assignment without giving credit to the author? (Factor II)
(30) taken material from the library without properly checking it out? (Factor II)
(31) collaborated with someone on a take-home exam which was intended to be an independent activity? (Factor II)
(32) insinuated sexual intimacy with a professor in return for a grade? (Factor V)
(33) flirted with or carried on a prolonged conversation with a professor in hopes of influencing a higher grade? (Factor IV)
(34) ignored incorrect answers when allowed to self-score a test or assignment to be counted as part of the course grade? (Factor II)
(35) had another student write a paper and present it as your own work? (Factor I)
(36) torn pages out of journals or books in the college/university library? (Factor II)
(37) delayed turning in a paper due to a false excuse? (Factor II)
(38) bought a meal for a professor in hopes of influencing a higher grade? (Factor V)
(39) made exaggerated, favorable claims regarding a professor in hopes of influencing a higher grade? (Factor IV)
(40) had another student write an assignment and presented it as your own work? (Factor I)
(41) changed a response on an exam after it was returned, and then reported to the instructor that an error was made in your grade? (Factor V)

Table 1
Varimax Rotated Q-Factor Structure
School I
(n = 15)

| | Factor I | Factor II |
|---|---|---|
| PERSON1 | .37393 | **.67002** |
| PERSON2 | **.61914** | .46810 |
| PERSON3 | **.57921** | .29042 |
| PERSON4 | **.83220** | .12351 |
| PERSON5 | **.73835** | -.20312 |
| PERSON6 | **.77024** | .28568 |
| PERSON7 | .23200 | .38438 |
| PERSON8 | **.65553** | .30337 |
| PERSON9 | .24138 | **.73937** |
| PERSON10 | **.69222** | .46444 |
| PERSON11 | **.52847** | .32910 |
| PERSON12 | -.27575 | **.55393** |
| PERSON13 | .23471 | **.56667** |
| PERSON14 | **.53076** | **.56244** |
| PERSON15 | **.71707** | .34507 |

Note: Coefficients greater than .50 are emphasized, indicating the factor with which persons are most highly correlated.

Table 2
School I Factor Scores (n = 15)

| Item | Factor I | Factor II |
|---|---|---|
| 1 | -.63392 | **1.76880** |
| 2 | -.65985 | .06702 |
| 3 | -.86951 | .47402 |
| 4 | -.63974 | -.71786 |
| 5 | .80360 | **1.97328** |
| 6 | .85783 | -.22732 |
| 7 | .41573 | -.97119 |
| 8 | **1.60907** | -.26046 |
| 9 | -.63144 | .13462 |
| 10 | -.58891 | .43834 |
| 11 | -.31660 | -.71560 |
| 12 | -.29787 | **1.67674** |
| 13 | .86490 | **-1.68178** |
| 14 | **1.39689** | .15664 |
| 15 | .64664 | **-1.40206** |
| 16 | -.67988 | -.65172 |
| 17 | **1.08973** | .15464 |
| 18 | .33670 | .04840 |
| 19 | .01615 | **2.33391** |
| 20 | .25475 | **2.18141** |
| 21 | **2.02356** | .96538 |
| 22 | -.26083 | **-1.48718** |
| 23 | -.26506 | **1.73080** |
| 24 | **-1.44176** | -.17315 |
| 25 | **2.10518** | **-1.19017** |
| 26 | **-1.50254** | .22937 |
| 27 | **-1.04381** | -.49323 |
| 28 | .24242 | .68039 |
| 29 | **1.93704** | -.15520 |
| 30 | -.21688 | -.46362 |
| 31 | .53900 | -.22792 |
| 32 | **-1.11498** | -.81959 |
| 33 | -.44073 | -.85443 |
| 34 | **1.16886** | .15604 |
| 35 | **-1.45889** | -.13562 |
| 36 | -.56127 | -.60521 |
| 37 | **1.21156** | -.76809 |
| 38 | **-1.13975** | -.06201 |
| 39 | -.63674 | .02500 |
| 40 | **-1.05999** | -.35129 |
| 41 | -.39519 | -.99844 |

Note: Factor scores >|1.000| are emphasized, indicating the items which served to differentiate person factors.

Table 3
Varimax Rotated Q-Factor Structure
School II
(n = 15)

| | Factor I | Factor II |
|---|---|---|
| PERSON1 | **.55278** | .28013 |
| PERSON2 | **.59343** | .13335 |
| PERSON3 | **.57107** | .24185 |
| PERSON4 | .17203 | **.78177** |
| PERSON5 | .21261 | **.82452** |
| PERSON6 | **.71007** | .17439 |
| PERSON7 | .27611 | **.58863** |
| PERSON8 | **.64534** | .14717 |
| PERSON9 | **.70047** | -.28037 |
| PERSON10 | **.61680** | .10727 |
| PERSON11 | **.68064** | .12343 |
| PERSON12 | **.73275** | .35542 |
| PERSON13 | .43124 | .16795 |
| PERSON14 | .05157 | **.83566** |
| PERSON15 | **-.73075** | -.28622 |

Table 4
School II Factor Scores (n = 15)

| Item | Factor I | Factor II |
|---|---|---|
| 1 | .76106 | .37394 |
| 2 | -.45821 | .01630 |
| 3 | **-1.23405** | -.39477 |
| 4 | **-1.19265** | .57098 |
| 5 | **1.98159** | **1.17488** |
| 6 | .07454 | **1.63216** |
| 7 | .42403 | **1.00336** |
| 8 | .72924 | .83568 |
| 9 | -.59680 | .57668 |
| 10 | **-1.02650** | .96044 |
| 11 | -.92094 | .24782 |
| 12 | .43444 | -.82846 |
| 13 | -.32664 | .52588 |
| 14 | **1.89223** | .55049 |
| 15 | **-1.04792** | .76386 |
| 16 | **-1.54529** | .57831 |
| 17 | -.41747 | **1.79346** |
| 18 | -.49011 | .23871 |
| 19 | .44887 | **1.10383** |
| 20 | .42587 | **1.42712** |
| 21 | **1.30722** | **1.45946** |
| 22 | -.67993 | -.06163 |
| 23 | **1.65505** | -.16514 |
| 24 | -.97855 | -.80721 |
| 25 | .83585 | .59159 |
| 26 | -.60195 | -.43043 |
| 27 | -.99647 | -.49612 |
| 28 | **1.04510** | **-1.18725** |
| 29 | **1.98258** | **-1.29137** |
| 30 | .60793 | -.96699 |
| 31 | .12354 | -.63991 |
| 32 | -.69927 | **-1.35871** |
| 33 | -.96941 | **-1.02397** |
| 34 | **1.59610** | **-1.53932** |
| 35 | -.67877 | -.99492 |
| 36 | -.07761 | **-1.40816** |
| 37 | .61771 | .58743 |
| 38 | **-1.25145** | -.64231 |
| 39 | **-1.12281** | .06216 |
| 40 | .46330 | **-1.87051** |
| 41 | -.09346 | **-1.75692** |

Table 5
Varimax Rotated Q-Factor Structure
School III
(n = 15)

| | Factor I | Factor II |
|---|---|---|
| PERSON1 | -.20498 | **.75824** |
| PERSON2 | **.59809** | .33810 |
| PERSON3 | **.77472** | .37756 |
| PERSON4 | **.61086** | .08871 |
| PERSON5 | **.67040** | .07233 |
| PERSON6 | **.82441** | -.06172 |
| PERSON7 | **.50535** | .33848 |
| PERSON8 | .45153 | .43624 |
| PERSON9 | **.81221** | .17244 |
| PERSON10 | **.68730** | .41742 |
| PERSON11 | **.72142** | .38750 |
| PERSON12 | **.66036** | .38394 |
| PERSON13 | **.53990** | .47337 |
| PERSON14 | .31770 | **.72490** |
| PERSON15 | **.81500** | .08981 |

Table 6
School III Factor Scores (n = 15)

| Item | Factor I | Factor II |
|---|---|---|
| 1 | .32847 | **1.11227** |
| 2 | -.71147 | -.47370 |
| 3 | **1.31469** | **-1.98463** |
| 4 | -.88312 | -.73692 |
| 5 | .97357 | **1.54132** |
| 6 | -.09309 | .94877 |
| 7 | .05668 | -.18328 |
| 8 | -.32426 | .73548 |
| 9 | .99144 | -.63221 |
| 10 | -.16661 | -.58200 |
| 11 | -.47048 | **-1.38115** |
| 12 | -.01856 | **1.52323** |
| 13 | .27267 | -.72396 |
| 14 | .66719 | **1.11791** |
| 15 | .23884 | -.39242 |
| 16 | -.56422 | -.06024 |
| 17 | **1.47882** | .16189 |
| 18 | **-1.02092** | **1.15387** |
| 19 | **1.59404** | .06817 |
| 20 | **2.48298** | **-1.09892** |
| 21 | **2.59501** | -.25789 |
| 22 | **-1.15121** | -.41754 |
| 23 | .76594 | **1.15351** |
| 24 | -.86322 | **-1.31878** |
| 25 | **1.22915** | .44971 |
| 26 | -.92279 | **-1.39139** |
| 27 | -.78778 | -.62131 |
| 28 | .09183 | **1.43898** |
| 29 | -.82355 | **2.48887** |
| 30 | -.79130 | -.08050 |
| 31 | **1.43906** | -.00125 |
| 32 | **-1.20854** | .08869 |
| 33 | **-1.07342** | **1.16794** |
| 34 | -.39227 | .79877 |
| 35 | -.66025 | -.02441 |
| 36 | -.88790 | -.64514 |
| 37 | -.37694 | .60999 |
| 38 | **-1.15345** | -.73850 |
| 39 | -.32465 | **-1.30821** |
| 40 | -.24943 | -.28128 |
| 41 | -.60096 | **-1.22372** |