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ABSTRACT

In the past only academic variables have performed well in the prediction of attrition. Ideally, persons in higher education would like to predict attrition prior to its occurrence, but many academic variables are not available until after the fact. Thus, the isolation of those motivational and personality variables which identify individuals as "high risk," or potential dropouts is critical. Biographical information can be useful in this context because it is a good predictor of any criterion heavily saturated with motivation. To identify academic and nonacademic factors which predict attrition within the college freshman year, biographical information from student questionnaires was assessed. Results demonstrated that dropouts and persisters could be differentiated on the basis of nonacademic background factors. Male persisters had backgrounds of high academic achievement in high school, higher socioeconomic status, and were allowed more freedom by their parents than male dropouts. Female persisters had histories of previous leadership experience, closer relationships to their mothers, and higher academic achievement in high school than female dropouts. Additionally, subgroups of males identified as "high risk" remained stable in terms of their dropout composition over an eight-year period. The findings suggest a strategy for identifying, at the time of admission, whole groups of potential dropouts and for planning some type of intervention to prevent attrition. (Author/JAC)

USE OF A BIOGRAPHICAL QUESTIONNAIRE IN THE EARLY IDENTIFICATION OF COLLEGE DROPOUTS

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USE OF A BIOGRAPHICAL QUESTIONNAIRE IN THE EARLY IDENTIFICATION OF COLLEGE DROPOUTS

The phenomenal attrition rate in colleges and universities in the United States has attracted the attention of those involved with higher learning. A review by Pantages & Creedon (1978) demonstrates that an overwhelming amount of research has been conducted in this area; however, a systematic study of the antecedent factors influencing attrition is apparently unavailable.

Lack of systematic study has been a basic problem in attrition research, and the result has been an inability to isolate variables which offer a clear understanding of dropout behavior. However, for those individuals concerned with attrition in their colleges and universities, the goal is to identify the potential dropout at the time of his or her entrance into school. Only in that way can some type of intervention be formulated in order to prevent attrition. A problem with many of the variables found to be associated with dropping out behavior is that they do not allow for the early identification of the dropout. Since many students dropout during the first year, it is necessary that variables be isolated which may be of some use in identifying these students.

The relationship between attrition and academic variables is well established. A majority of studies have found that HSGPA and class rank differentiate dropouts from persisters (Pantages & Creedon, 1978). According to Demitroff (1974), academic factors are the most reliable predictors of attrition and adding other predictors to a regression equation does not significantly increase the variance accounted for.

Similarly, a significant difference in scholastic aptitude and ability is usually found between dropouts and persisters. In most of the studies,

however, the aptitude scores of the dropout group, though lower than those in the nondropout group, were still sufficiently high to have predicted college success (Gekowski & Schwartz, 1961), leaving Pantages & Creedon (1978) to conclude that high school grades, class rank, and scholastic achievement are better predictors of college success than they are of college persistence.

The role played by personality factors in attrition has been widely studied. However, Pantages & Creedon (1978) noted that many of these studies have failed to find significant differences between dropouts and persisters. Generally, the study of personality factors in attrition is beset with the major problems of measurement in this area.

This has also been true in the isolation of motivational factors influencing attrition. It has not yet been determined which motivational factors are predictive nor how they are to be measured (Pantages & Creedon, 1978). Usually assessment problems are blamed for the relatively weak relationships found in research examining motivation and attrition.

Though problems exist in measuring the influences of personality and motivational variables on attrition, it is widely accepted that these variables play a part. In determining some solution to the problem of identifying potential dropouts early in their college careers, it is necessary to isolate the influences of these variables.

It is within this context that biographical information can be useful in studying the processes which lead to attrition. Biographical information, or biodata, seems to be a promising predictor of any criterion heavily saturated with motivation (Owens & Henry, 1966). Moreover, biodata have several advantages over personality measures, such as low fakeability, high verifiability of experiences, and high stability over time.

Biodata utilize a quasi-longitudinal approach (Mikesell & Tesser, 1971) in collecting data. In this approach individuals are not observed over a long period of time, but rather are asked to recall significant early life experiences in a highly structured situation. The Biographical Questionnaire or BQ (Owens, 1968) is one vehicle for assessing significant early life experiences. In completing the BQ, individuals simply respond on a continuum to a series of questions designed to tap significant early events in their lives. For example, one question is "How often did you argue or fight with your brothers or sisters during your grade school years?" and individuals respond on a continuum from 1-not at all to 5-very often.

Several research studies within the university setting have already occurred utilizing Owens' Biographical Questionnaire. For instance, Payne, Rapley & Wells (1973) utilized the questionnaire in estimating college academic achievement. The study found support for the use of biodata in college selection procedures. In another study, Boardman, Calhoun, & Schiel (1972) found that biodata could be utilized in identifying early those male groups with high college leadership potential. Given previous success with biodata in the university setting, it appears hopeful that these data can provide a vehicle for the early identification of the college dropout.

METHODOLOGY

Subjects

Two samples of subjects were utilized in the present study. The first sample consisted of a large portion of the freshman class at a large southeastern university in 1968. 1037 males and 896 females completed a 389-item Biographical Information Blank (Owens, 1968) as part of a larger longitudinal investigation (Owens & Schoenfeldt, 1979). Students who did not return in the fall of their sophomore years were defined as dropouts in the present investigation.

Sample 2 consisted of 167 males and 114 females who were freshmen at the same university in 1977. These subjects completed a shorter form of the 389 item questionnaire as part of the still continuing longitudinal investigation by Owens and his colleagues (1979). Persistence was again defined as not returning for the sophomore year.

Biodata Form

The 389-item biographical questionnaire samples major developmental characteristics of the students' precollege experiences. The responses to each item form a continuum and the intercorrelations among the items were factored, by sex, using a principal components analysis with a varimax rotation. This procedure resulted in the identification of 13 interpretable male factors and 15 interpretable female factors.

Subgroups of individuals were then formed by profiling each student on the factors and by reducing their similarities to a distance matrix. Students were placed into subgroups or "families" having similar profiles by using a modified Ward-Hook hierarchical procedure (1963). Utilizing this procedure, 15 female groups and 23 male subgroups were established. The groups were internally similar and externally different with respect to claimed collegiate

life experiences so that students within a subgroup had, by application, similar patterns of precollege behavior.

A shortened form of the 389-item questionnaire was developed by selecting the highest loading items from the 13 male factors and the 15 female factors. Thus a 118 item questionnaire was formed, and this questionnaire was administered to individuals in sample two. By profiling these individuals on the factors, persons in sample two were then slotted into the pre-existing male and female subgroups described earlier.

Analysis

University records for all individuals in sample 1 were obtained, and persons were labelled as either persisters or dropouts according to the definition already stated. The component scores for each person were then subjected to a multiple regression analysis using the factor scores as predictors and the persistence/dropout dichotomy as the criterion. The SAS stepwise regression procedure (Helwig & Council, 1979) was utilized, and analyses were performed separately by sex. The results of these analyses are in Table 1 of your handout.

An earlier study by Schoenfeldt (1970) prompted the second phase of the present study. His study showed that dropouts were not evenly distributed across all subgroups, but that some subgroups had less than 10% dropouts after the first year, while other subgroups had more than a 50% dropout rate. Based on this knowledge of previous research, it seemed reasonable to consider that perhaps subgroups of individuals could be considered "High Risk" subgroups; that is, all individuals within these high dropout subgroups could be considered "High Risk" or potential dropouts for early identification and counselling purposes. In order for this to be possible, however, it was necessary to determine whether "high risk" subgroups

remained stable over time. The question was, would those subgroups of freshmen who were considered potential dropout subgroups in 1968 continue to be high risk in 1977? To test this hypothesis the university records of individuals from sample two were obtained and their status as persisters or dropouts was determined. Only those individuals who were members of the high risk subgroups identified in the earlier study were utilized in this second phase of the present investigation. Chi squares were performed by sex to determine if dropout rates remained stable over time. Prior to performing the chi square, an arc sine transformation was applied to the frequencies in order to normalize the distributions. Since less than 20% of the cells contained expected frequencies of less than five, the chi square results should not have been affected (Siegel, 1966).

As a followup to the chi square analysis, the factor scores for sample two were obtained and were subjected to the SAS stepwise regression analysis (Helwig & Council, 1979) using the persistence/dropout dichotomy again as the criterion. A correction for shrinkage was applied to these results due to the small sample sizes involved in the regressions. The formula utilized was that of Claudy (1969), an empirical formula which corrects for the large ratio of variables to subjects, as well as for the nonrandom selection of predictors. These results are reported in Table 2.

RESULTS AND DISCUSSION

Results for the analysis of factor scores in sample 1, seen in Table 1, demonstrate that male persisters have a background of high academic achievement in high school, a higher socioeconomic status, and were allowed much more freedom by their parents than the male dropouts. Persisters also tended to express a much warmer relationship with their fathers, were more likely to be involved in religious activities while in high school, and did not often feel the need to become more socially acceptable. Dropout males expressed a greater interest in athletics and a lower interest in academic pursuits than the persisters.

For the females in sample 1, popularity with the opposite sex in high school makes it more likely that they will dropout before the second year in college. Persisters, on the other hand, have a history of academic achievement in high school, as well as expressing a closer relationship to their mothers. Moreover, female persisters were more likely to have directed or guided others as a leader, while also suffering "attacks of conscience" often when they felt they had done wrong by society's standards. Dropouts are more likely to take things out on their friends or their parents when things go wrong and are often of a lower socioeconomic status than the female persisters.

In examining the results of the chi square analyses to determine the consistency of high risk subgroups over an eight year period, only the male subgroups were found to remain high risk. The chi square for males was highly insignificant, indicating that male dropout rates within the subgroups are highly stable over a relatively long period of time.

Table 2 provides results of the follow up regression analysis on the

factor scores of individuals in sample 2. The male results are most important in this case since they were the only ones to remain consistently high risk. That is, the females in sample 2 cannot be considered "high risk" females since the dropout rates in their subgroups were inconsistent.

For the males, however, the factors which predict dropping out among a group of "high risk" males are of interest. Persisters in the potential dropout group tend to be high on the pseudo-intellectualism factor. Persons high on this factor are more likely to read business, literary, or cultural magazines, are more likely to view cultural or educational TV programs, and report friction or boredom surrounding their relationships with their peers in high school. Persisters in sample 2 also achieved more academically than the dropouts in this group. Dropouts, on the other hand, were more often regarded as radical or unconventional by their peers and were more likely to be socially introverted.

The results of the present investigation point to factors other than academic ones which may be useful in understanding dropout behavior. This study and others which have examined biodata in a university context provide evidence for the usefulness of a biodata questionnaire for selection and counselling of college students. By examining factor scores of the entering freshmen and by subgrouping individuals, it would be possible to identify a group of potential dropouts who could be targeted for counselling by those persons in admissions departments. Thus, the high cost of attrition to the university or college could be lowered. It might also be that some students would be better off at another university. In any case, the availability of information provided by biodata would increase a counselor's ability to help students make the right decisions during their college careers.

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TABLE 1

Sample 1: Male Biodata Factors

Factor	Beta	F Value	Prob F
Academic Achievement	.0009	55.15	.00
Socioeconomic Status	.0004	14.06	.00
Parental Control vs. Freedom	-.0003	6.59	.01
Warmth of Paternal Relationship	.0003	5.79	.02
Social Desirability	-.0003	4.60	.03
Religious Activity	.0003	4.17	.04
Athletic Interest	-.0003	3.75	.05
Positive Academic Attitude	.0002	3.12	.08

Overall Model: F = 12.15 df = 8, 1028 p = .0001 R = .30

Sample 1: Female Biodata Factors

Factor	Beta	F Value	Prob F
Popularity with Opposite Sex	-.0006	20.32	.00
Academic Achievement	.0005	11.28	.00
Warmth of Maternal Relationship	.0004	8.31	.00
Expression of Negative Emotions	-.0003	3.67	.06
Social Leadership	.0003	3.43	.06
Feelings of Social Inadequacy	.0002	2.92	.09
Socioeconomic Status	.0002	2.91	.09

Overall Model: F = 7.60 df = 7, 887 p = .0001 R = .25

TABLE 2

Sample 2: Male Biodata Factors

Factor	Beta	F Value	Prob F
Pseudo-Intellectualism	.0020	25.03	.00
Academic Achievement	.0011	9.62	.00
Verbal Aggressiveness-Independence	-.0010	9.54	.00
Social Introversion	-.0005	2.99	.09

Overall Model: F = 10.36 df = 4, 161 p = .0001 R = .45 Corrected R = .38

Sample 2: Female Biodata Factors

Factor	Beta	F Value	Prob F
Adjustment	-.0011	5.20	.03
Academic Achievement	.0008	3.68	.06
Social Maturity	-.0008	3.42	.07

Overall Model: F = 3.92 df = 3, 109 p = .0107 R = .31 Corrected R = .18