Invitational Papers

Screening Applications for the Diploma Program

Neal C. Stoskopf

A detaled admission information sheet was prepared to help select students applying to the two year diploma program. This action was precipitated due to the variable academic backgrounds of applicants coming mainly from year 4 of Ontario high schools, the varied agricultural backgrounds, and the number of applications above the annual quota of 180 new students that can be admitted for semester I.

Although nearly half of the 456 applications received in 1977 were interviewed, an interview was not regarded as a suitable admission technique because desires maybe mother to student thoughts, and not all students can avail themselves to an interview.

Criteria Used

Three criteria were scored in the "Admission Information Form," namely academic ability (40 percent), experience (40 percent), and motiviation and sincerity (20 percent), as revealed by an essay in which students responded to specific questions. Consideration was extended to second or third time applicants, geographic origin, completion of grade 13, university or community college education. Students indicated their interest in one of four divisions offered — Agribusiness, Agriculture Mechanics, Farm Operators, and Managers or Horticulture. They also indicated their future plans to return to the home farm or to work with the service industry of agriculture so that their work experience could be evaluated appropriate to their interest.

The score achieved on the form provided an objective and hence plausible explanation to applicants, parents, high school teachers or counsellors, and legislators inquiring about the status of individuals seeking information to ensure their entry in subsequent years. Some admitted were advised to gain more experience or to return to school or to apply elsewhere.

Quality Increase

As a result of stringent admission requirements, the caliber of student and the level of teaching has been elevated. The problem of encouraging those not admitted to upgrade themselves and to reapply remains. Many of the unsuccessful candidates could benefit from independent study courses.

Dr. Stoskopf is Director, Diploma Program, University of Guelph. This is a synopsis of his invitational paper presented before the 24th NACTA Conference at the University of Manitoba, Winnipeg, Manitoba, June 11-14, 1978.

A True Year– Round College

Edward C. Frederick

Year-round education is quitely gaining momentum in the United States. There is movement from the traditional nine-month schedule to a twelve-month school calendar. Ecological and economic considerations demand that more productive use be made of facilities and other resources. A National Council on Year-Round Education was formed in 1969 and continues to foster this concept. Since 1969, the number of grade schools and high schools that have adopted the twelve-month calendar his increased from a very few to approximately 120 districts, involving 600 schools, 400,000 students in 30 states. Agricultural educators' awareness of or participation in the movement has been minimal to date.

In fact, history indicates that the agrarian society is the reason for the nine-month school calendar, September through June. The children were needed to help with the farm work during the summer months.

Times have changed. Because of row crops, herbicides, and other modern technology, the summer is not the busiest time on the farm or in agribusiness. Planting in the spring and harvesting in the fall are busier times. For this reason, agricultural educators should be leading the way toward year-round education.

The purposes of this paper are to outline the development and operations of a year-round college for agriculture. The advantages of and problems associated with a year-round college are highlighted.

The University of Minnesota Technical College, Waseca, is a relatively new institution which began operation in the Fall of 1971. The college is specialized and has a single mission — that of preparing students for mid-management, semi-professional positions in the broad fields related to agriculture as well for service to rural homes and communities. The programs are two or more and less than four years in length. One-third of the course work is in related education and two-thirds is in the technical area; fifty percent of the course work is laboratory-oriented. An Associate in Applied Science degree is granted upon satisfactory completion of the course of study.

The college adopted a year-round educational program at the outset in order to meet the needs of students and agriculture. The college operates on a quarterly basis, with the Summer Quarter being no different from the Fall, Winter, and Spring Quarters. Students can start any quarter and graduate any quarter; they can go continuously or intermittently, full time or part-time.

Planning for the college tied the year-round concept into all phases of the operation before the doors actually opened. Programs were developed with a minimum of

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prerequisites and most courses are self-contained units. Staff are hired who are willing to teach in a year-round program. Nine-month faculty are rotated throughout the year. Registration, financial aids, veterans assistance, and other procedures have been developed to fit a year-round program.

Year-round education has a number of advantages. With a year-round program, students can and do attend classes at the college in the summer and winter and "stop out" in the spring for planting crops and in the fall for harvesting.

Summer Quarter Advantage

UMW emphasizes laboratory and practical experiences. The year-round program permits greater use of outdoor agricultural laboratories which are most highly developed during the summer months. Another plus is the efficient use of the facilities and research at the adjacent 840-acre Southern Experiment Station, another unit of the University of Minnesota. The year-round program of the college allows for maximum use of the Southern Experiment Station in the teaching program during the summer months as well as throughout the year.

With the four-quarter system, students may start college classes immediately after finishing high school and thus graduate and begin employment earlier. Students also have an opportunity to accelerate their program by going continuously throughout the year.

POP

One quarter of employment experience is part of the technical program. This is called the Pre-Occupational Preparation Program (POP) and gives the student practical industry experience. The year-round education system assists this internship program in that it allows the student to be out in industry during the quarter (time of the year) that is most advantageous from a learning point of view. For example, in horticulture, students may work in the industry in the spring and return to the College in the summer of their first year.

A year-round program allows greater use of expensive facilities and equipment needed in a technical college. It also provides for increasing the number of graduates without increasing the physical facilities.

Enrollment is continuing to increase rapidly in all quarters, including the summer quarter, as shown below:

	Fall	Winter	Spring	Summer
1971-72	131	151	124	102
1972-73	320	342	301	192
1973-74	406	420	353	247
1974-75	536	591	509	401
1975-76	705	843	603	467
1976-77	851	990	688	482
1977-78	958	1,051	707	500+ projected

Twenty-five percent of the students enrolling for summer quarter are directly out of high school.

The number of graduates by quarters, as shown below, indicates the year-round program is working:

	Fall	Winter	Spring	Summer	Total
1972-73	1	3	43	13	60
1973-74	6	16	78	15	115
1974-75	13	37	55	17	122
1975-76	9	60	74	26	169
1976-77	19	56	93	41	209
1977-78	26	77			

Some areas of concern in year-round education which need to be and are being overcome include faculty fatigue and time for professional updating, maintenance of the physical plant, need for air conditioning in the summer, and misunderstandings that result from breaking with tradition. This latter is one of the toughest hurdles. An attempt is being made to overcome faculty fatigue and professional updating by use of associate instructors, rotating nine-month appointments throughout the year, team teaching, single quarter leaves, and others.

The year-round program has been well accepted by the students and the agricultural industry. It gives a great deal of flexibility to the program at Waseca. The quality of education has been improved. The advantages outweigh the disadvantages. For the Technical College for Agriculture at Waseca, the year-round program is not a concept but an idea "whose time has come."

Characteristics of Successful Vocational Agricultural Students at the University of Saskatchewan

John R. Peters

Directors of educational institutions who operate on a restricted entrance quota generally are interested in knowing how their entrance requirements can be adjusted to improve the performance of the student body as a whole. This requires predictor parameters and a clear understanding of what one wants to predict.

The School of Agriculture, a two-year technical program at the University of Saskatchewan, is now in a position where it would be desirable to characterize the applicant most likely to be successful in the School program and to predict the likelihood of him or her graduating.

During the mid 1970's the School received many more applications than could be accepted, this in spite of the fact that the quota of first year students was increased from 125 in 1974 to 175 in 1975 and 1976 and to 200 in 1977 and 1978. At the same time the percent of students graduating dropped from 64.3 percent of the 1973-75 class to around 51 percent of the 1975-77 class and 54 percent of the most recent, 1976-78, class.

Presented at the NACTA Convention in Winnipeg, June 11-14, 1978, by Prof. John R. Peters, Director, School of Agriculture, University of Saskatchewan.

The entrance requirements for the School of Agriculture up to and including the 1976-77 school year are basically 3 fold.

1.) A minimum age of 17 years.
2.) A minimum Grade 11 high school education and
3.) Suitable farm experience.

Suitable farm experience has been generally interpreted as an applicant having spent at least 6 months on a typical North American farm. The fact of the matter is, however, that over 95 percent of School of Agriculture students at the University of Saskatchewan come from an actual farm and 80 to 85 percent intend and do return to a farm.

Applications were accepted in chronological order as long as the above requirements were met.

If because of the large number of applications to the School, the accpetance procedures or entrance requirements were to be changed, the change should be made in such a way as to improve the quality of the student body. A predictor of student performance would therefore be desirable.

Both Denison (1) in 1972 and Knoblauch (2) in 1975 reported attempts to predict student Grade Point Averages in a technical agricultural training program on the basis of a large number of possible predictors. In this case, however, the concern was more in whether or not a student graduated, i.e. completed the program of studies, than in how high an academic average he achieved. Simply put, success was defined as having completed the minimum requirements of the Diploma in Agriculture.

The purpose of this study was therefore to find criteria which could be used to select students who would be more likely to succeed than others. A secondary purpose was to be able to inform potential School of Agriculture students of these criteria, allowing them to adjust their own situation and improve their chances of successfully completing the School of Agriculture program.

Analytical Procedure

The classes entering the School of Agriculture in the fall of 1973, 1974, and 1975 were analysed (3) on the basis of the following:

1.) Age as of November 1 of their first year in the School.
2.) Grade level completed at the high school level.
3.) High School average mark.
4.) Number of math-science classes passed at the Grade 12 level.
    The classes considered were Algebra, Geo-Trig, Biology, Chemistry, and Physics.
5.) Average mark achieved in the math-science classes.

Table 1 shows some of the characteristics of the sample group. Despite the rapid increase in student intake, the characteristics of the student body did not appear to change appreciably over the three year period.

Figure 1. Graduation Rates of School of Agriculture Students Grouped According to Age, High School Grade Completed, High School Average Attained, Grade 12 Maths-Science Classes Passed and Maths-Science Average at Grade 12 Level.
(Chi-square significant at .01.)**

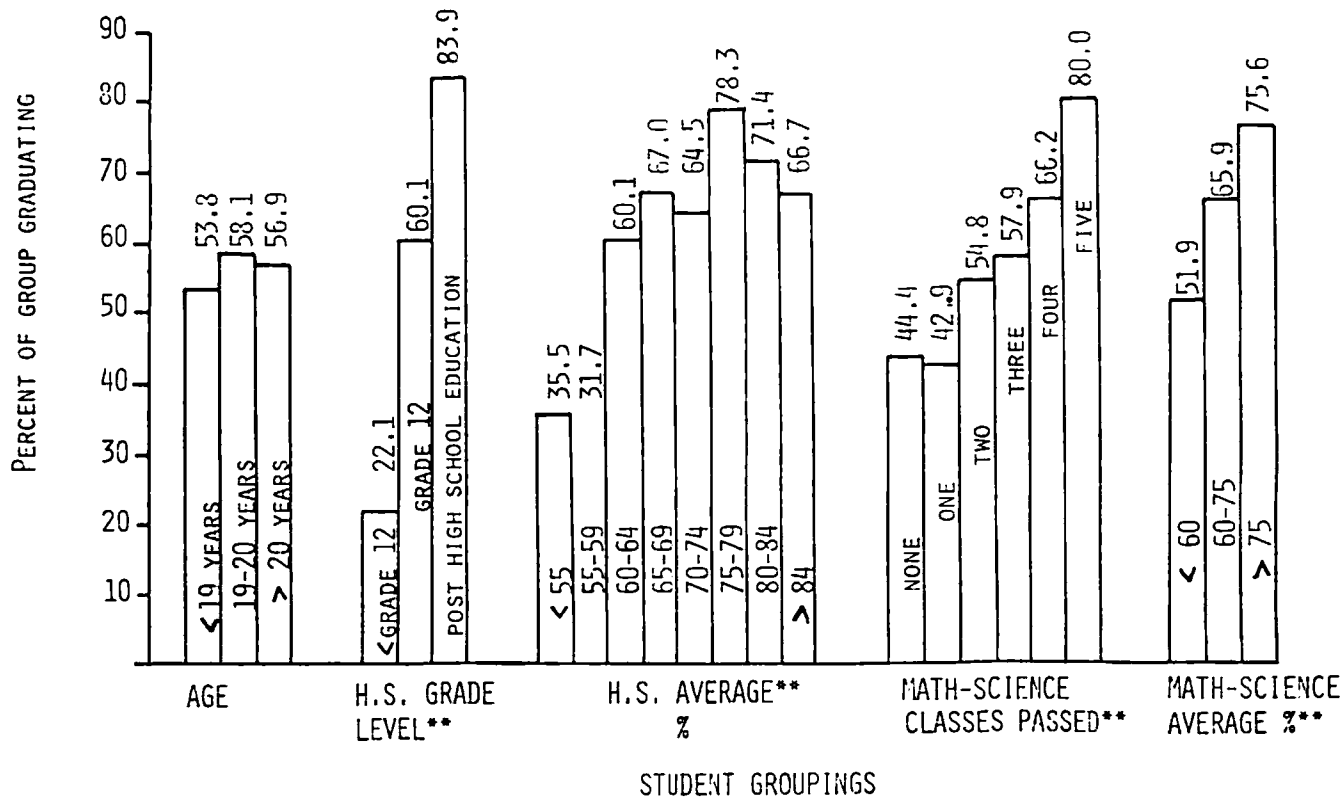

Table 1. Characteristics of the Sample Group Analysed

Year	No.	Age	High School Average[1]	% having Grade 12 or better
1973	129	19.85	63.97	85.3
1974	161	19.72	65.51	83.9
1975	177	19.87	64.76	87.0
Total	467	19.81	64.80	85.4

[1] Average of last year in high school.

The sample group was cross tabulated according to the characteristics mentioned above.

Chi-squares were computed for the cross-tabulations to determine whether the characteristics had a significant influence on the graduation rate. A modified form of the Student T-Test was used to determine significance between groupings within a characteristic.

Results and Discussion

Figure 1 shows the percentage of students graduating according to various divisions within each characteristic group. Age of students on November 1 of the initial year does not significantly affect the percentage of students graduating. This is surprising as preliminary analysis had indicated significance in this area, and personal observations had given the impression that older, more mature individuals were more likely to graduate than younger students. A further break down of the oldest group revealed that the 21-22 year old group graduated at a 54.5 percent rate whereas the group older than 22 years graduated at a rate of 60.5 percent. It is unlikely that a statistical analysis of this breakdown would have revealed significance.

The level of high school education completed significantly affects the percentage of students graduating. Those students with less than a complete grade 12 graduated at a significantly lower rate than did those with a complete Grade 12 which in turn graduated at a significantly lower rate than those with some post high school educational experience.

Knowing that students graduating from the School of Agriculture without the benefit of senior matriculation do so with no serious difficulties one would suspect that it is not lack of education that keeps high school drop-outs from graduating but rather their low level of motivation. This latter factor is probably the reason they did not complete Grade 12 in the first place.

Breaking down the "less than Grade 12" group into those with a complete Grade 11 and those with a partial Grade 12 shows that of the latter group only 19.1 percent graduated whereas of the former group 31.6 graduated. This probably lends further weight to the suggestion that lack of motivation and maturity is a more dominant factor than lack of high school education, especially since the average age of the Grade 11 group is 22.3 as against an average age of 19.5 for the partial Grade 12 group.

The average mark received by a student in his last high school year significantly influences his chances of graduating from the School of Agriculture. Those with a high school average of less than 60 percent graduated at a significantly lower rate than those with an average of 60 percent or higher. No further significant increases were evident in groups with high school averages of greater than 60 percent although the groups with an overall high school average of 75 to 84 did appear to be somewhat more successful than those with averages of between 59 and 75 percent. The group with an average of greater than 84 percent consisted of only 3 students and hence little emphasis can be placed on it.

Similar results are obtained when the average of math-science classes is used. Those students with an average of 60 percent or higher in whatever math-sciences classes they took graduated at a significantly higher rate than those with an average of less than 60 percent. The group with a math-science average of greater than 75 percent graduated at a greater, although not significantly greater, rate than did the 60-75 percent group.

If one can assume that the majority of high school students who receive average marks below 60 percent do so because of low motivation rather than low academic ability, then the thesis expressed earlier is further strengthened by the above observations.

The data shown in Figure 1 relating to math-science classes passed and math-science average is confined to students with a complete Grade 12 only. In this way the influence of the low graduation rate of non-Grade 12 students is eliminated.

Although the relationship between the graduation rate and the number of the Math-Science Classes Passed grouping is significant at the .01 level, the Modified Student-T Test shows a significant difference at the .05 level between the none and one group and the five group only. In other words statistically speaking there is no difference among groups 0 to 4 and among groups 2 to 5. However, it would appear that if this parameter were used as an entrance requirement, applicants should be required to take 2 or more math-science classes at the Grade 12 level.

Although correlating School of Agriculture marks with high school parameters was not one of the basic objectives, some correlations were carried out using first term, first year, and final School averages as the dependent variables and age, high school average, number of math-science classes passed, and average mark in math-science classes as independent variables. The results of these correlations are shown in Table 2.

Twenty six to 30 percent of the variation in the student's first term average could be explained by his or her high school average, number of math-science classes passed or average mark obtained in the math-science classes. Twenty seven percent of the first year average marks and only 17 to 18 percent of the final average mark could be explained by either one of the high school averages used. Age explained only 2 to 4 percent of the variation in School averages.

Table 2. Correlation Values Between School of Agriculture Average Marks and High School Parameters

High School Parameters	Value of r First Term Average	First Year Average	Second Year Average
Age	.04	.04	.02
H.S. Ave.	.28	.27	.18
No. of Math-Science classes	.26	.18	.11
Average Mark in Math-Science classes	.30	.27	.17

Note that as students progress through the School of Agriculture program, high school parameters appear to be less useful as predictors of their performance.

Conclusions

From the data presented it would appear that the successful School of Agriculture student at the University of Saskatchewan is anywhere from 17 to 58 years of age, has a Grade 12 education or better with a high school average of 60 percent or higher, probably passed 2 or more math-science classes at the Grade 12 level with an average mark of 60 percent or better, comes from a farm and intends to return to farming. Last but not least, the graduate is probably male — only 3 percent of the sample population was female.

Acknowledgement

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References

1. Denison, John W. March, 1972. A Study of the Predictive Relationships Between Admission Criteria and Academic Achievement for the Stockbridge School of Agriculture, **NACTA Journal**, Volume XVI, No. 1.
2. Knoblauch, Wayne A. December, 1975. A Predictive Model of Academic Performance in the MSU Agricultural Production Program. **NACTA Journal**, Volume XIX, No. 4.
3. Analysis of Student Performance In the School of Agriculture Report No. USG-048-0378 prepared by the University Studies Group, University of Saskatchewan, Saskatoon.

Discipline Reports

Business, Economics, Marketing Workshop

The group recommended that more time be devoted to discipline group meetings in next year's annual conference. This should be done early in the conference so that individuals representing various institutions and specializations could become better acquainted as the conference begins. It was suggested that name tags have the discipline or specialization in agriculture designated. This would permit those attending the conference a better chance to exchange subject matter both on a formal and an informal basis as the conference progresses.

Dr. Thomas I. Gunn, from California State University-Fresno, briefly discussed the agricultural marketing block program introduced by the Department of Agricultural Economics at that institution. The subject matter from three agricultural economics classes is combined into a 9-unit block. The class meets three days per week for three hours at a time. The block program departs from the traditional lecture-type class. Subject matter is presented by teams (4-5 students) through case studies, group discussion, workshops with outside agricultural businesses, research projects, special films, presentations on closed-circuit television, etc. No texts or examinations are required. Grading is on the basis of both oral and written reports, peer evaluation, and consultations on an individual and team basis with the instructor. The course is limited to upper-division agricultural business majors.

A farmer-in-residence program was discussed by representatives from the University of Minnesota-Waseca. Under this program selected successful farmers come on campus (compensation given) for designated periods of time for interaction and consultation with students. They are provided office space and meet students informally or make presentations when requested by the regular instructors. It is contemplated that this program will be expanded to include successful agricultural-related businessmen in the future.

The group raised the question of whether students admitted to college or university agriculture programs should be required to have farm or related agricultural experiences to qualify for admission. There were mixed feelings about this among the group. Time did not permit a full discussion of this issue which seems to be a growing concern among various institutions offering both diploma and/or degree programs in agriculture.

Thomas I. Gunn, Group Secretary, California State University - Fresno.

Agronomy

Chairman: **Russell Miller**, Professor Crop Science, Department of Agronomy Louisiana State University, Baton Rouge, Louisiana
Recorder and reporter: **A. W. Burger**, Department of Agronomy, University of Illinois, Urbana, Illinois
Russell S. Adams, Jr. - University of Minnesota
Bill Anderson - University of Minnesota Tech. College Waseca
Charles Basham - Colorado State University
Clinton Blackmon - Delaware Valley College
A. W. Burger - University of Illinois-UC
Ken W. Clark - University of Manitoba
Maurice Cook - North Carolina State University
Sig Helgeson - University of Manitoba
Delroy Hemsath - University of Nebraska
Don Keith - University of Minnesota - Crookston
Gary D. Lemme - University of Nebraska
Bill Martinie - Illinois Central College
Russell L. Miller - Louisiana State University
John R. Peters - University of Saskatchewan
Gerry L. Posler - Kansas State University
Earl Ripley - University of Saskatchewan
Robert Self - University of Illinois-UC
Len Shebeski - University of Manitoba
Alex Skepasts - New Liskeard College of Agric-Tech (Ontario)
Bob Sorenson - University of Nebraska
Ken Stevenson - Ridgetown College of Agric. Technology (Ontario)
Neal Stoskopf - University of Guelph (Ontario)
Wm. D. Treese, Sr. - Purdue University
Jack Truscott - University of Manitoba
Jim Vorst - Purdue University
Morley Young - University of Manitoba

Topics or problems discussed in the area of "What's New In Agronomy" and a summary of comments in five areas of agronomic teaching were as follows:

A. Laboratory Manual for Agronomy

There is no manual which can be used universally for agronomy classes at all institutions. However, a number of manuals which can be adapted to many climatic and geographical locations are available. Some manuals which are