International Journal of Innovation, Creativity and Change. www.ijicc.net
Volume 11, Issue 11, 2020

Institutional Quality Indicators and Faculty Morale; Their Influence upon the Knowledge of Agricultural Graduates

Mutti A. Asaali[a], [a]Tawi-Tawi Regional Agricultural College, Bongao, Tawi-Tawi, Philippines, [b]University of the Philippines, Los Baños, Laguna, Philippines, Email: [a]asaalimutti@gmail.com,

The study sought to assess the educational quality indicators of public Agricultural Schools, and to determine their degree of contribution to the knowledge level of farming graduates. It also aimed to compare the knowledge level in two categories of schools. A total of 247 faculty members and 129 farming graduates were randomly selected as respondents. Selected school officials were also included. The data were gathered by administering a 100-item knowledge test, questionnaire on faculty morale and review of secondary data. Data were analysed with frequency counts, percentage, mean scores, t-test, multiple and simple linear regression analyses, and Pearson Product Moment Correlation Coefficient (r). The findings revealed that the faculty morale of seven Agricultural Schools was perceived by the faculty respondents as "average". Overall, 71.33% of the minimum requirements of school facilities were compiled by the State Universities and Colleges (SUCs), and only 69.52% by the Non-Chartered Schools. The graduation rates of SUCs were "very low" while the Non-Chartered institutions were only "low." However, both schools produced "very high" retention rates and these have resulted to a "very low" percentage of dropout rates. On average, the cost per student and the number of teachers assigned to student in SUCs were higher compared to the Non-Chartered Schools. The percentages of "high achievers" and "low achievers" were equal. However, the knowledge level of the farming graduates from the SUCs was significantly higher than the respondents from Non-Chartered institutions. Based on the Pearson Product Moment Coefficient of Correlation, only school facilities, retention rates, teacher-student ratio, and the per-student expenditure were positively related to the knowledge level. Likewise, multiple regression analysis using the reduced model revealed that faculty morale, school facilities,

graduation and dropout rates, and teacher-student ration explained the highest contribution in the variability of the knowledge level with an R^2 of 81.92%. However, the observed variations were not significant at 5% level. Similarly, the simple linear regression analysis revealed that all independent variables, if taken alone, were also found to have made no significant contribution. Although, the stepwise regression analysis further showed that teacher-student ratios and dropout rates, entered together, would make the contribution of the former significant. However, their combined contribution of R^2 equal to 72.30% was also found non-significant.

Key words: *Institutional quality indicators, faculty moral, knowledge level, farming, Tawi-Tawi Regional Agricultural College, University of the Philippines, Los Baños, Laguna, Philippines.*

Introduction

This is an exploratory study. It examines educational quality indicators and relates them to the knowledge level of the farming graduates turned out by Agricultural Schools in Western Mindanao. The effects of educational quality are investigated as to whether this makes a difference in purely educational outcomes. Why exploratory? It is because the empirical literature on this topic is extremely thin in documenting the hypothesised relationship (Psacharopoulos, and Veles, 1988).

At the descriptive or intuitive level, it is easy to presume that school quality must make a difference in educational outcome and the nature of human capital embodied in the individual. Yet, the subject has not been given much attention in educational research due to the difficulty of collecting the required data and in designing the appropriate measures to do the same.

The evaluation of education quality indicators and their relationship to the cognitive development of the agricultural manpower is crucial, because of its perceived association with agricultural development. Further, the result of the evaluation should serve as an instrument for initiating changes required of agricultural education to make them more relevant to the present and future needs of the nation.

The production of high-quality graduates in agriculture is not only a prime responsibility but a mandate of agricultural institutions. As such, it should be their mission to turn out the manpower needed for agricultural development. To achieve these ends, agricultural institutions should be able to produce well-trained graduates. Thus, the main elements of a strategy to improve the performance of higher education, against which progress can be

measured, are: improved quality of teaching and research, increased responsiveness of higher education to labour market demands, and greater equity (The World Bank, 1994).

The establishment of institutions of agricultural education and training, and the strengthening of these institutions where they already exist, should have high priority in the agricultural development plan and also in the broader national development plan (Beal, 1978 cited by Zepeda). Thus, for agricultural education to fully meet the needs of the industry it serves, it is essential that changes be made to keep pace with the dynamic state of agriculture (Suggett, 1987).

As development requires many changes, there is a need for innovative abilities, especially in the expansion of the capacities of people to solve problems and take inventive, rational approaches to the issues confronting them (Steven and Jabara, 1988). This is the unique contribution of higher educational institutions to development. Simply, these turn out to be trained people and useful knowledge which are essentially required for productive works (Thomas and Atkinson, 1971).

The contribution of agricultural education to prospective farmers for proficiency in farming is to: “make a beginning and advance in farming, produce farm commodities efficiently, market farm products advantageously, conserve soil and other natural resources, manage a farm business effectively, maintain a favourable environment, and participate in rural leadership activities” (Thompson, 1973).

More and better schooling, the acquisition of information about better production techniques, and learning from experience, enhances the productivity of farm people (Shultz, 1982). This means that the investment in agriculture is more productive and farmers are more likely to innovate and apply technology, when they have been to school. The longer they are in school the more likely and the more rapidly the increase in agricultural productivity (Gould, 1993). Education therefore is investment in human capital, boosting the agricultural productivity of individual farmers.

Thus, education seemed to be a key to development for it makes individuals more economically productive. The economic contribution of an educated person is normally greater than that of an uneducated person (Gould, 1993). Also, education can make its direct contribution to economic growth by improving the quality of labours that is, by making the workforce more productive, more disciplined, and reliable, healthier, and more mobile (Psachorapoulos and Loxley, 1985). With this, it is safe to say that there is a relatively high return on investment in human capital because it would enhance workers’ productivity.

High returns on investment in education for developing human resources accrue equally in the case of agricultural education, research, and extension as to other sectors of the economy (Beal, 1978). And though the primary purpose of such education and training is an increase in agricultural productivity and output, its basic concern is to provide the opportunity for the farmers to become self-reliant (Arnon, 1993).

In the Philippines, it is safe to assume that most degree programs offered by agricultural schools are designed to produce graduates who can fit in many challenging jobs and careers needed for national development. Along this line, effective selection is important because the quality of students admitted into an institution affects the quality and internal efficiency of training (The World Bank, 1994).

The present training programs in agriculture are well-conceived, but the educational activities of those institutions need constant evaluation to ensure that training needs of farmers and the agribusiness sectors are adequately addressed (Camarao, 1991). What is critical for now and the future is the need to improve the many agricultural schools, not only to produce agricultural manpower, but also to serve as demonstration centres of excellence in food production and other imperatives in countryside development. Such educational issues prompted the researcher to undertake this study.

Methodology

Research Design

This study utilised the exploratory *cum* descriptive-correlational type of research design. The descriptive type of research was employed, to examine educational quality indicators and relate them to the knowledge level of the farming graduates produced by the Agricultural Schools in Western Mindanao. The effects of educational quality are investigated as to whether this makes a difference in purely educational outcomes. Correlation, on the other hand, was used to determine significant relationship between the knowledge level and the educational quality indicators.

Research Locale

This study was conducted in the Agricultural Schools in Western Mindanao. The schools consist of one chartered state college, one chartered university, and five Non-Chartered agricultural schools. These institutions are: a) Tawi-Tawi Regional Agricultural College (TRAC) at Bongao, Tawi-Tawi; b) Western Mindanao State University (WMSU) in Zamboanga City; c) Lapak Agricultural College (LAC) at Siasi, Sulu; d) Katipunan National Agricultural School (KNAS) at Katipunan, Zamboanga del Norte; e) Sindangan National

Agricultural School (SNAS) at Sindangan, Zamboanga del Norte; f) Zamboanga del Norte Agricultural College (ZDNAC) at Tampilisan, Zamboanga del Norte; and g) Zamboanga del Sur Agricultural College (ZDSAC) at Dumingag, Zamboanga del Sur.

Population and Sampling

Table 1: The distribution of faculty and farming graduate respondents according to schools

Respondents						
Schools		Faculty		Farming graduates		
	N	N	%	N	n	%
TRAC*	55	48	19.43	24	23	17.83
WMSU*	20	19	7.69	20	19	14.73
LAC	30	28	11.34	20	19	14.73
KNAS	40	36	14.57	12	11	8.53
SNAS	40	36	14.57	16	15	11.63
ZDSAC	38	35	14.17	22	21	16.28
ZNAC	51	45	18.22	22	21	16.28
TOTAL	274	247	99.99*	136	129	100.00

*- due to rounding off numbers
*- state college and university

From the table, there were 247 faculty respondents of which 72.88% belonged to Non-Chartered Agricultural Schools, while 27.12% were from state colleges and universities. Similarly, there were 129 farming graduate respondents of whom 67.44% were the graduates of the Non-Chartered Agricultural Schools, and 32.56% were the graduates of State College and University.

The respondents of the study were the faculty members who answered the questionnaire on faculty morale; the librarians who provided the information on the library facilities; the registrars and principals who supplied the data on enrolment, dropouts, and graduates; supply officers, and the laboratory custodians who provided the data on school facilities and equipment, and the farming graduates.

The total population of teachers officially employed in each Agricultural School covered in the study was determined through the school's record. The farming graduates were identified by the teachers and farm coordinators within the school. The teachers and the farming graduate respondents were drawn from these populations. The sample size in each school was determined by using the formula formulated by Slovin (1960) as cited in Sugiyono (2011). The actual teacher and farming graduate respondents were drawn through simple random sampling.

Data Gathering Tool

A combination of closed and open-ended questionnaires were used to gather the information in this study. The instruments were divided into two parts. Part I pertains to the questions that determine the faculty morale, for faculty respondents. The instrument is adopted from the American Association of University Professor (AAUP) Faculty Morale Scale for Institutional Improvement. It composed of 34 statements broken down into the following: eleven (11) items were included to create a composite of academic requirement; seventeen (17) items under administrative encouragement, and another six (6) statements were considered to compose organisational effectiveness. The scale has a reliability of .94 based on an N 97 with a fair content validity judging from the appearance of its item (Shaw and Wright, 1967).

The condition of school facilities was described by the librarians, supply officers, and laboratory custodians. The instrument is adopted from the criteria developed by the Technical Panel for Agricultural Education (TPAE). The retention dropout and graduation rates were derived from the data on school enrolments, dropouts, and graduates from the high school principals and college registrars; and the financial resources. Part II contains test questions in basic crop, animal, and soil science. The test items are not standardised, so its validity and reliability have not been established. However, since the study is exploratory, it is preliminarily used to measure the knowledge of the farming graduates in this study.

Pre-testing of the questionnaires was done with the non-respondents at Tawi-Tawi Regional Agricultural College (TTRACT).

Data Analysis

This study employed both descriptive research and inferential statistics. Frequency counts, percentage, and mean score were employed to describe and evaluate the education quality indicators: a) Faculty Morale Score, b) School facilities Score, c) Retention rate Score, d) Graduation rate Score, e) Dropout rate Score, f) Student-teacher ratio, and g) Financial resources; and the knowledge level of farming.

T-test was used to determine the significant difference between the knowledge level of the farming graduates in State College and University and the Non-Chartered Agricultural Schools.

Multiple linear regression analysis was used to determine the combined contribution of the educational quality factors on the knowledge level of farming graduates of the Agricultural Schools.

Simple linear regression analysis was employed to ascertain the individual contribution of the educational factors to the knowledge level of the farming graduates.

Pearson-Product Moment Correlation Coefficient was used to determine the relationship between the knowledge level and the educational quality factors among the independent variables.

The test of significance was set-up at a five percent (5%) level of confidence in all statistical tests.

The statistical analysis (SAS) computer program was used to obtained correlation and regression values.

Results and Discussion

Educational quality indicators of the Agricultural Schools in Western Mindanao
Faculty Morale

The faculty morale of both the State Universities and Colleges (SUCs) and Non-Chartered Agricultural Schools were perceived as average by faculty respondents. This meant that faculty members in the Agricultural Schools under review were only moderately satisfied about the existing academic requirements, administrative encouragements, and the organisational effectiveness of their respective institutions.

School Facilities

The school laboratory facilities and equipment of SUCs were very much inadequate which that of Non-Chartered Agricultural Schools, on the average also very inadequate. However, both categories of the Agricultural Schools were able to satisfy the minimum requirement set by TPAE in terms of books. For journals, only one school from SUCs and two schools from Non-Chartered institutions were able to meet the minimum standard. In contrast, for classroom and laboratory floor space per student, only two schools from Non-Chartered institutions did not meet the minimum requirement. For the total land area, on the other hand, only school from SUCs failed the minimum standard.

Graduation and Retention Rate

The graduation rates of the State College and University were “very low” while the Non-Chartered Agricultural Schools were only “low”. However, they all have very high retention rates which in turn resulted to a very low percentage of dropout rates. These findings

suggested that the Agricultural Schools under review had experienced a very high percentage of educational wastage. The scenario was due to the fact that the schools would only be able to get hold of their enrolment but were not be able to let them graduate in due time.

Cost per Student

On the average, the cost per student in state college and university was higher compared to the Non-Chartered Agricultural Schools. This observation was also true as to the number of teachers assigned to their students.

The percentage of "high achievers" and low achievers was the same. However, in general, the knowledge level of the farming graduates from the SUCs was significantly higher than the knowledge level of the farming graduates from the Non-Chartered Agricultural Schools.

Of the seven educational quality indicators correlated to the knowledge level, only four were found to be positively correlated but only teacher-student ratio was statistically significant at the 5% level of confidence with the latter. Other variables were school facilities, retention rates, and the cost per student.

Is there any relationship between the knowledge level and the educational quality indicators?

Moreover, multiple regression analysis using the reduced model revealed that when faculty morale, school facilities, graduation and dropout rates, and the unit cost per student but retention rates and teacher-student ratio were out of the regression equation, the analysis produced an R^2 value of 64.80%. This meant that 64.80% variability in the knowledge level was due to the five independent variables mentioned above. Likewise, when faculty morale and school facilities were removed from the regression equation and retention rates and teacher-student ratio entered, R^2 value improved from 64.80% to 78.59%. The result signified an increased in the knowledge level was accounted or explained by retention, graduation and dropout rates, teacher-student ratio, and the unit cost per student. Finally, when retention rates and the unit cost per student were removed from the regression equation but faculty morale and school facilities were entered again, R^2 value improved from 78.59% to 81.92%. The finding explained that faculty morale, school facilities, graduation and dropout rates and teacher-student ratio showed the highest contribution in the variability of the knowledge level. However, the observed variations due to the independent variables considered in the study were not significant at 5% level of confidence.

Likewise, the simple linear regression analysis showed that all independent variables, if taken alone, were also found to have no significant contribution to the knowledge level. The finding was confirmed by the small F-values and R^2 which ranged from 0.43% to 46.88%. Although,

the stepwise regression analysis further showed that teacher-student ratio and dropout rates entered together would turn the contribution of the former with an F-value of 10.05. However, their combined contribution of R^2 to 72.30% was still found non-significant at the 5% level. This result was also revealed by some other variables entered, although there were increases in the value of R^2.

Conclusions

The claim that proliferation in the number of substandard Agricultural Schools in the country has been responsible in turning out low-quality Agricultural graduates, could not be confirmed in this study. This is because the analysis of the data on the knowledge level revealed that the percentage of the farming graduate respondents classified into high and low achievers, based on the result of the knowledge level, was equal. However, about 62.79% of the respondents in SUCs were classified as high achievers, while 55.81% of the respondents from the Non-Chartered Agricultural Schools were categorically classified as low achievers. In general, therefore, only about 47.29% of the farming graduate respondents yielded satisfactory performance in the knowledge level examination.

Apparently, such situations were anchored on the fact that a majority of the Agricultural Schools had suffered from the inadequacy of school facilities; more specifically, the laboratory facilities and equipment. The failure of the Agricultural Schools to adequately provide these physical resources, and the number of teachers required to attain the ideal teacher-student ratio of 1:20 as a minimum standard set by TPAE, could be suspected of responsibility in turning out the 47.29% low quality graduates.

Furthermore, the study revealed that the quantity and quality of what is learned may be dependent upon the learner personally. This is so because all the independent variables showed non-significant contribution to the knowledge level which is the dependent variable in this study. As such, it could be claimed that educational quality factors such as the faculty morale, school facilities, retention, graduation, and dropout rates, teacher-student ratio, and unit cost per student could not be considered as good predictors of students' academic performance. In other words, these educational quality factors could not be considered as the true measures of students' level of knowledge, since they did not directly and significantly influence the knowledge level of the farming graduates sampled in this study.

But nevertheless, the graduates' academic performance could be substantially improved should the schools under review be able to provide adequately the school facilities and the required number of teachers, to satisfy the recommended minimum standard for successful implementation of the curricular offerings of the said institutions.

REFERENCES

Arnon, Isaac. (1993). Modernization of Agricultural in Developing Countries New York: John Willey and Sons, P. 307.

Beal, D.W. (1978). Agricultural Education and Training in Developing Countries. Agricultural Economics and Statistics Bulletin, 282.

Camarao. Fedeserio C. (1991). Technology Education in the Philippines. Metro Manila: National Book Store, Inc. P.170.

Gould, W. T. (1993). People and Education in the Third World. New York: John Wiley and Sons, Inc., P. 20:202.

Psacharopoulos, George and Veles, Eduardo. (1988). Educational Secondary Education and Development: Evidence from Colombia and Tanzania. London: The John Hopkins University Press, P. 31.

Schultz, Theodore W. (ed.) (1982). Agricultural Development in China. Republic of China: The institute of Economic Academic Sinica, P.8

Shaw, Marvin E. and Wright, Jack M. (1967). Scales for the Measurement of Attitudes. New York: McGraw-Hill Book Company, 1967, P. 506.

Steven, Robert D. and Jabara, Cathy L. (1988). Agricultural Development Principles. London: The John Hopkins University Press, P. 308-317.

Sugget, Graham R. (1987). An Overview of Agricultural Education. The Journal of the Agricultural Education Association, Vol. 62. 82.

Sugiyono. (2011). *Metode Penelitian Kuantitatif, Kualitatif, dan Kombinasi (Mixed Methods)*. Edisi Pertama. Bandung: Alfabeta.

Thomas, D. W. and Atkinson, J. H. (ed.) (1971). Institutions in Agricultural Development. Ames. Iowa: The Iowa State University Press, P. 108-111.

Thompson, Jhon F. (1973). Foundations of Vocational Education. Englewood Cliffs, New Jersey: Prentice Halls, Inc., P.135., Digitized 26 August 2011.

World Bank. 1994. *Higher education: the lessons of experience (English)*. Development in practice. Washington DC; World Bank. http://documents.worldbank.org/curated/en/303461468328502540/Higher-education-the-lessons-of-experience