

Schooling Background and Academic Achievement of Agricultural Students

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In our society academic achievement is considered as a key criterion to judge one's total potentiality and capability. Academic achievement is seen as a students' grade point averages in many academic settings. Academic achievement has become an index of students' future in this highly competitive world and Agricultural education is no exception. Hence it becomes necessary to find out the factors that determine better academic performance. In this context the present study had been carried out to find out the possible relationship between schooling background and academic achievement of agriculture students. The students admitted in Adhiparasakthi Agricultural College, Kalavai, Vellore between 1999 and 2009 formed the subjects of the study. Findings of the study revealed that determinants like gender, type of school and stream of education had a significant role in the academic achievement of the students. Medium of instruction in HSC did influence the academic achievement but not significantly. It was also found that students who performed well in their HSC did perform well in their undergraduate programme also. This confirms that previous educational outcomes are the most important indicators of student's future achievement and schooling background has a significant role in academic achievement of students.

Education, in its broadest sense, may be defined as a process designed to inculcate the knowledge, skills and attitudes necessary to enable individuals to cope effectively with their environment. Its primary purpose is to foster and promote the fullest individual self-realization for all people. Agricultural education is the teaching of agriculture, natural resources, and land management through the hands on experience and guidance to prepare students for entry level jobs, to further education and to prepare them for advanced agricultural jobs. Classes that may be taught in an agricultural education curriculum include agronomy, plant pathology, entomology, plant breeding,

horticulture, plant-biotechnology, farm machinery, post-harvest technology, food science, forestry, livestock management, crop physiology, industrial microbiology, agricultural economics, agricultural extension and nanotechnology etc. (TNAU syllabus).

In our society academic achievement is considered as a key criterion to judge one's total potentiality and capability. Hence academic achievement occupies a very important place in education as well as in the learning process. Academic achievement denotes the knowledge attained and skill developed in the subject, usually designated by test scores. The term 'achievement' is

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defined as “accomplishment or proficiency of performance in a given skill or body of knowledge”. Academic achievement has become an index of students’ future in this highly competitive world. It has been one of the most important goals of the educational process. The importance of students’ grade point average in relation to their overall academic accomplishment has been highlighted by the body of literature on academic achievement, and academic achievement is seen as students’ grade point averages in many academic settings.

From the last two decades it has been noticed significantly that there is great addition in research literature and review material relating to indicators of academic achievement with much emphasis on this dialogue, whether traditional achievement measures of academic performance are best determinants of future academic gain at university or higher levels. Miller and Birch (2007), in their study on the influence of high school attended on university performance argued that outcome at university differs according to the type of high school attended. The studies cited led the researcher to hypothesize that the student’s school background is positively related to academic performance of undergraduate students. It is generally assumed that the students who showed better or higher performance in the starting classes of their studies also performed better in future academic years at degree level.

However, it is also observed that many of the researchers do not agree with this view point or statement. Reddy and Talcott (2006)

disagree with the assumptions that future academic gains are determined by preceding performance. In this context, the present study was formulated, with the following objectives:

1. To study the gender and schooling perspective or background of Agricultural students
2. To study the academic achievement of Agricultural students
3. To study the relationship between the schooling background characters and academic achievement of Agricultural students.

METHODOLOGY

The study was taken up during the year 2013 - 2014. The students who have completed their B.Sc. Agricultural course at Adhiparasakthi Agricultural College, Kalavai, Vellore district, Tamil Nadu by 2013 formed the subjects of the study. The institution was purposively selected because this was the first private agricultural college in Tami Nadu affiliated to Tamil Nadu Agricultural University. The list of students who were admitted in the college between 1999, the year the college was started and 2009 were taken from the college registers.

Schooling has been operationalized in this study as the education received at school. For this purpose the Information regarding gender, school last studied, educational stream and medium of instruction in Higher Secondary Course, Percentage of marks

obtained in HSC were collected. The OGPA was collected for the students who had completed their course by 2013. Statistical analysis like Frequency, Percentage analysis, Correlation Coefficient, Independent sample t test and ANOVA were carried out.

FINDINGS AND DISCUSSION

Gender

Worldwide, there is a gap of 10 percent between women's literacy rates and those of

men. In some regions of the world, this gap is more than 25 percent. Women's participation in higher agricultural studies is significantly lower than that of men. The number of women in higher agricultural education as compared to men is lowest in precisely those regions where women constitute the majority of food producers. World Bank (2013) has suggested "Increased women's enrollment in agricultural courses" as one among the strategies when addressing gender issues in the education and training components of agricultural development projects.

Table 1.
Year wise Categorisation of Students based on Gender, Schooling Background and Academic achievement

Year	Number of students	% of students											HSC Marks (%)	OGPA
		Gender		Medium of Instruction				Type of school		Educational stream				
		M	F	Ta	En	Te	Ma	G	P	R	V	I		
1999	54	55.6	44.4	46.3	53.7	—	—	24.1	75.9	94.4	5.6	-	74.25	8.53
2000	54	51.9	48.1	57.4	42.6	—	—	31.5	68.5	98.1	1.9	-	68.79	8.55
2001	44	68.2	31.8	54.5	45.5	—	—	20.5	79.5	93.2	6.8	-	67.23	8.57
2002	51	62.7	37.3	52.9	47.1	—	—	19.6	80.4	92.2	7.8	-	73.49	8.43
2003	55	61.8	38.2	23.6	76.4	—	—	1.8	98.2	98.2	1.8	-	78.88	8.47
2004	55	58.2	41.8	41.8	58.2	—	—	10.9	89.1	92.7	5.5	1.8	79.97	8.38
2005	73	53.4	46.6	58.9	39.7	1.4	—	30.1	69.9	68.5	28.8	2.7	73.92	8.00
2006	24	79.2	20.8	70.8	25.0	4.2	—	54.2	45.8	33.3	66.7	-	70.91	7.65
2007	68	64.7	35.3	61.8	33.8	4.4	—	55.9	44.1	52.9	39.7	7.4	70.33	7.75
2008	62	64.5	35.5	58.1	38.7	1.6	1.6	51.6	48.4	74.2	21.0	4.8	64.15	7.66
2009	122	54.1	45.9	39.3	59.2	-	1.6	23.0	77.0	90.2	7.4	2.5	70.97	7.84

M = Male, F = Female, Ta= Tamil, En=English, Te = Telugu, Ma=Malayalam, G= Government, P= Private, R= Regular, V= Vocational and I = Intermediate

The study revealed that majority of the students (59.5%) was found to be males. Females contributed to 40.5 percent of the total student strength. Similar findings have been reported by Anitha (2001), that majority of the students undergoing higher education were males.

The distribution of students over different years revealed that the highest percentages (79.2%) of male students were admitted in the year 2006, which was followed by 68.2 per cent in the year 2001. In the case of females, the highest percentage of intake was in the year 2000 with an intake of 48.1 per cent.

Schooling background

In Tamil Nadu, the medium of instruction followed in HSC is either Tamil or English, whereas in colleges the medium of instruction is English. We call English a second language and not a foreign language because it has become the medium of instruction in higher education and also in schools.

The study revealed that majority of the students (49.7%) had Tamil as their medium of instruction which was followed by 48.9 per cent of the students having English as their medium of instruction in HSC. There was not much difference between the percentage of students from English and Tamil as their medium of Instruction. Similar results have been reported earlier by Planning Commission (2007) which found that almost half of the students had English as medium of instruction.

Students with Malayalam and Telugu as their medium of instruction in HSC constituted 0.5% and 0.9% respectively.

The distribution of students over different years revealed that the highest percentage (70.8%) of students with Tamil as their medium of instruction was in 2006 and the lowest (23.6%) in 2003. Students with Telugu as medium of instruction started joining the course from 2005 onwards with the highest percentage of intake (4.4%) in the year 2007. Malayalam medium students joined the course from 2008 onwards with 1.6% of intake in the same year and the following year.

Kwesiga (2002) states that school has an

effect on the academic performance of students but argued that school facilities determine the quality of the school, which in turn influences the achievements, and attainment of its pupils. Crosnoe *et.al.* (2004) found that school ownership (that is schools owned by private individuals and those owned by the government) is an important structural component of the school. Private schools, they argue, tend to have both better funding and small sizes than public schools.

The study revealed that majority of students (71.5%) are from private schools and 28.5 percent are from government schools. This is supported by the findings of Saleemi (1997) who reported the students with high admission points, high socio economic background and good school background will perform well on admitting in universities.

The distribution of students over different years revealed that the students coming from Government schools were found to be highest (55.9%) in 2007 batch and lowest (1.8%) in 2003 batch. The intake of students from private schools was maximum (98.2%) in 2003 batch and minimum (44.1%) in 2007 batch.

HSC is offered under two streams in Tamil Nadu and Kerala viz. Regular and Vocational, whereas students coming from Andhra Pradesh term their HSC as Intermediate. Majority of the students (82.6%) were from Regular stream followed by Vocational stream with fifteen percent. Students from intermediate stream constituted about 2.3 percent.

The distribution of students over different

years revealed that the highest percentage of intake of Vocational students was in the year 2006 with 66.7 per cent which was followed by the year 2007 with 39.7 per cent. The intake of students from intermediate stream was since 2004 batch with a maximum percentage of 7.4 in 2007 batch.

Academic achievement

The academic achievement of students in HSC was highest (77.97%) in 2004 batch and lowest (64.15%) in 2008 batch. The mean percentage of marks obtained by the students over the years have shown that their marks have been around 70 percent. Maximum mean OGPA (8.57) was attained by the students of 2001 batch and minimum mean OGPA (7.65) was obtained by students of 2006 batch. The lower performance of students of 2006 batch might possibly be due to the fact that 66.7 per cent of the students were from Vocational stream and 70.8 per cent of the students had Tamil as the medium of instruction in HSC.

There has been a decrease in mean OGPA over the years from 1999-2009. From the year 2006 onwards the mean OGPA has moved from 8 points to 7 points. Moreover, students who have not completed their course also started increasing during this period. In the year 2007, 16 students did not complete their course of which 7 students discontinued the course. The highest number of students (26 students) who did not complete their course was found in the year 2008. This was the period when the intake of students were

highest from Vocational stream, Tamil as Medium of instruction and Government schools.

Relationship between gender and academic achievement

It is a common notion that girls perform better than boys in academic achievement. Girls usually perform better at school leaving examinations at the end of compulsory education and upper secondary school. On average, girls also achieve higher grades or passing rates. Many researches have revealed that most pronounced gender difference in achievement is the advantage of girls in reading. On average, girls read more and enjoy reading more than boys. Girls' advantage is consistent across countries, different age groups, survey periods, and study programmes (EACEA, 2010).

Independent Samples t Test to compare the mean OGPA of female and male students revealed that there was a significant difference in mean OGPA of female and male students. Female students had secured higher OGPA than male counterparts even though the difference between mean values was not much. The mean OGPA of females were 8.29 and the t value was 3.663 which was highly significant at 1% level. This is in line with the studies of Vijayalaxmi and Natesan (1992), Dlamini, Barnabas M., and Nelisiwe L. Sithole (1997), Anitha (2001), and Girma Berhanu (2011). Research shows that, in general, the range of differences is small compared to the similarities existing between the sexes.

Relationship between schooling background and academic achievement

The relationship between the mean OGPA and type of school of the student was studied using Independent Samples t-Test. The study revealed that there was a significant difference in mean OGPA of students based on type of school. Private school students had secured higher OGPA (8.27) than students from government schools. The t value was found to be 6.481 which was highly significant at 1% level. Similar findings were also reported by the Planning Commission (2007) which found that almost 40 percent of the students considered that quality of institution last

attended was a major factor in influencing their performance. This proportion was higher at 48.5 percent among SC students.

Study on the relationship between mean OGPA and medium of instruction made through one way ANOVA, gave F value of 22.604, which was highly significant at 1% level. The study revealed that there was a significant difference in the mean OGPA and the mediums of instruction. The average OGPA of English medium students were found to be 8.36 which was higher than the mean OGPA of 8.18, whereas students from other mediums of instruction scored less than 8. Similar findings were also reported by

Table 2.
ANOVA Table for schooling background and Mean OGPA

Sl. No.	Schooling Background		N	Mean	Std. Deviation	F value	p value
1.	Medium of Instruction	Tamil	259	7.9981 ^{ab}	0.54182	22.604	0.000(**)
		English	297	8.3600 ^b	0.54349		
		Malayalam	3	7.6100 ^a	0.11533		
		Telugu	4	7.7575 ^{ab}	0.41748		
2.	Educational Stream	Regular	484	8.2628 ^b	0.54035	41.319	0.000(**)
		Vocational	66	7.6256 ^a	0.46715		
		Intermediate	13	8.1400 ^b	0.63033		

** Significant at 1% level

Karthikeyan and Nirmala (2012) and Jancirani et.al (2012). This supports the claim made by students from Tamil medium schools that they struggle to learn and to get good marks in the subjects.

Duncan Multiple Range Test (DMRT) was conducted to find out the variance between the four different language mediums viz. English, Tamil, Telugu and Malayalam. There was not much difference between the mean

OGPA of Malayalam and Telugu medium students with Tamil medium students, but there was a difference between the mean OGPA of English medium students with Malayalam medium students. DMRT did not show much variance between English and Tamil medium students.

Majority of students came from regular stream followed by vocational stream. Moreover it was found that the mean OGPA

was found to be lower from 2006 onwards which was a period from which the intake of students from Vocational stream was higher. In order to study whether there exist any relationship between the mean OGPA and the educational stream of the students, a one way ANOVA was carried out.

The study revealed that there was a significant difference between mean OGPA of students from regular and vocational stream in HSC. The students from regular stream obtained a mean OGPA of 8.26 whereas students from Vocational stream obtained a mean OGPA of 7.63. The analysis of variance revealed an F value of 41.32 which was highly significant at 1% level.

There exist a third group of students with Intermediate as their stream of education. The DMRT revealed that there was no variance between regular and intermediate students whereas they differed from Vocational stream students.

The above findings reveal that former school background has a significant role in determining the academic performance of undergraduate students. Similar findings has been reported by Kyoshaba Martha (2009).

Relationship between OGPA and HSC marks

In order to study whether there exists any relationship between the marks obtained by the students in their HSC and the OGPA obtained by them on completion of the Degree course, Correlation study was carried out. The

mean OGPA of the students was 8.18 and the mean percentage of marks obtained in HSC was 72.02. The coefficient of correlation was found to be 0.331 and highly significant at 1% level. It could be incurred from the r value that there is 33 percent relationship between HSC marks and OGPA and since this is positive it could be incurred that students with high HSC marks obtained higher OGPA in their degree programme. Similar findings were reported by Bratti and Staffolani, (2002), who observed that the measurement of students previous educational outcomes are the most important indicators of students future achievement, this refers that a higher previous performance, the better the student's academic performance in future endeavors.

CONCLUSION

It could be concluded that there was a significant difference in academic achievement of male and female students. Female students had secured higher OGPA than male counterparts even though the range of differences is small. The type of school last attended has a definite influence on the academic achievement in future endeavors. In the case of medium of instruction, though English medium students had better OGPA than Tamil medium students, DMRT did not show much variance between the mean OGPA of English and Tamil medium students. Majority of students came from regular stream followed by vocational stream and there was a significant difference between mean OGPA of students from regular and vocational

stream in HSC. The mean OGPA of the students was 8.18 and the mean percentage of marks obtained in HSC was 72.02. There was a significant relationship between the marks scored in HSC and OGPA obtained. Students who had scored better in their HSC also scored better in their undergraduate programme. This confirms that previous educational outcomes are the most important indicators of student's future achievement and schooling background has a significant role in academic achievement of students.

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