

https://dspace.org/

The final decade: A statistical survey of JCE graduates, 1962-71

Spargo, Peter Ernest

1973
Johannesburg College of Education
https://hdl.handle.net/10539/27610
Spargo, P.E. (1972/1973). The final decade: A statistical survey of JCE graduates, 1962-71. Symposium: A Journal of Education for Southern Africa, pp. 15-18

Downloaded from a DSpace repository. https://dspace.org/

the final decade -- a statistical survey of jce graduates 1962-71

P. E. SPARGO

acting head of the science department, johannesburg college of education

1. Introduction

For many years the Johannesburg College of Education (JCE), together with the other Transvaal colleges of education has, amongst other functions, been responsible for the professional training of graduates who wish to enter the teaching profession. It is the only Transvaal college of education which has English as medium of instruction and therefore bears virtually sole responsibility for the supply of teachers to the English-medium primary and high schools of the Transvaal. However, in terms of the National Education Policy Amendment Act No. 73 of 1969, from 1st January 1972 the training of teachers for secondary school work is to be the sole responsibility of the universities, rather than the joint responsibility of the universities and the colleges of education as in the past.

As a result, the group of graduate students reading for the one-year post-graduate diploma at JCE in 1971 is the last such full group to pass through the College. (For the three succeeding years 1971-74 there will be successively smaller groups of post-graduate students at the College fulfilling earlier contractual agreements with the Transvaal Education Department.) The year 1971 will therefore mark the end of an era in JCE's history and it is thus a particularly appropriate time to examine the College's record during the last ten years during which it was responsible for the training of graduates for the profession.

It is the purpose of this brief paper to present some of the principal statistics relating to the ten groups of graduate students who passed through the College during the final decade 1962-71. Comment on the statistics will be kept to a minimum, for in general they speak for themselves.

2. Basis of the survey

The information used in this paper was principally gained from the details of graduates recorded on the Honours Day programmes of the College. In many cases it was also supplemented with information gained from the graduates themselves. The Registrar of the University of the Witwatersrand also kindly assisted with information concerning the degree subjects of certain graduates.

It should be noted that this survey only covers those students who enter the post-graduate diploma course with a completed university degree. Each year there are a number of students in the post-graduate diploma course who, for a variety of reasons, have not completed their university degrees but who are likely to do so at the end of the diploma year or shortly afterwards. These students, who receive an 'Interim Award' at the end of their diploma year, as they are not graduates, are not included in this survey.

The part-time graduates, i.e. those graduates who qualify for the post-graduate diploma over eighteen months by attendance at evening class lectures at the College, are also included in this survey.

3. Total Numbers of Graduates

During the decade 1962-71, 1 183 graduates were awarded the JCE post-graduate diploma. Table I gives the breakdown of these graduates by year and by course, i.e. whether full-time or part-time.

TABLE I

YEAR	COURSE		TOTAL
	Full-time	Part-time	
1962	83	9	92
1963	61	8	69
1964	104	22	126
1965	117	12	129
1966	110	14	124
1967	132	17	149
1968	116	9	125
1969	114	16	130
1970	101	19	120
1971	95	24	119
TOTALS	1 033	150	1 183

A notable feature of Table I is the steady increase in the number of full-time graduates from 1962 to 1967, followed by the equally steady decrease in numbers in this group to 1971. The numbers in the part-time group were erratic throughout the decade, although the tendency to increase through the period 1968-71 may prove to be significant.

As these graduates are trained very largely to serve the needs of the English-medium high schools of the Transvaal, it is interesting to note the growth in the total numbers of pupils in English-medium high schools during this period, as recorded in the Annual Reports of the Transvaal Education Department (Annexure on Statistics). These figures are given in Table II, together with the number of completely English-medium high schools, i.e. those without parallel-medium classes. The years 1962-64 and 1967-69 are the only ones for which published figures are available, but from the published figures for the total number of high school pupils in the Transvaal in the years 1965 to 1966 it is possible to estimate the numbers of pupils in English-medium high schools.

TABLE II

YEAR	No. of E.-medium High School Pupils	No. of E.-medium High Schools
1962	30 913	44
1963	31 562	45
1964	32 568	44
1965	32 964	NOT
1966	33 162	AVAILABLE
1967	34 153	47
1968	35 779	48
1969	36 867	49
1970	NOT AVAILABLE	
1971		

The figures given in Table II show that during the period from 1962 to 1969 there was a growth of 5 954 pupils in Transvaal English-medium high schools, i.e. gross increase of 19,3% or an annual growth rate of approximately 2½%. These figures contrast unhappily with the figures for the total output of graduates given in Table I for, after rising to a peak in 1967, the total number of graduates has declined steadily from 1967 to 1971.

It is difficult to avoid the conclusion that unless something can be done to arrest this decline in graduate output, either Transvaal English-medium high schools will become staffed by progressively more non-graduate teachers, or they will become staffed by progressively more Afrikaans-speaking teachers.

4. Distribution of Graduates by Sex and by Course

The full-time graduate students at JCE are of two types: either those who have been under contract to the Transvaal Education Department throughout their degree course, and who are known as 'Four Year Combined' (FYC) students or those who only on graduating from university elect to enter the teaching profession. These latter students are known as 'One Year Post Graduate' (OPG) students. The table also shows the percentage of male students in the total post-graduate group each year and the percentage of four year combined students in the full-time group.

TABLE III

Year	Course	Men	Women	Total	Percentage Male in Whole Group	Percentage FYC Students in Full-time Group
	Part-time	6	3	9		
1962	FYC	24	47	71	33	86
	OPG	1	11	12		
	Part-time	5	3	8		
1963	FYC	13	34	47	27,5	77
	OPG	1	13	14		
	Part-time	13	9	22		
1964	FYC	18	58	76	25	73
	OPG	1	27	28		
	Part-time	8	4	12		
1965	FYC	30	50	80	32	68
	OPG	3	34	37		
	Part-time	7	7	14		
1966	FYC	21	47	68	27	62
	OPG	5	37	42		
	Part-time	11	6	17		
1967	FYC	37	54	91	36	69
	OPG	5	36	41		
	Part-time	5	4	9		
1968	FYC	4	45	49	24	58
	OPG	21	46	67		
	Part-time	6	10	16		
1969	FYC	27	43	70	28	61
	OPG	4	40	44		
	Part-time	7	12	19		
1970	FYC	17	46	63	23	62
	OPG	4	34	38		
	Part-time	12	12	24		
1971	FYC	10	27	37	24	39
	OPG	7	51	58		
	Totals	333	850	1 183		

From Table III it will be seen that the percentage of male graduates in the whole group has remained fairly steady around the one-quarter mark throughout the decade and on only two occasions has it crept to the one-third mark. The fact that the lowest male percentages in the decade were in the last two years is more than a little alarming, particularly in view of the fact that in the years 1968 and 1969 boys outnumbered girls by

approximately 2 000 in Transvaal English-medium high schools. The low proportion of males amongst the graduate group underlines the fears that are steadily growing in many quarters that high school teaching is becoming more and more a woman's profession.

Another notable feature of Table III is the steadily decreasing proportion of contract (i.e. four year combined course) students in the full-time group. In 1971, for the first time, they were actually outnumbered by the one year post graduate students. Thus there appears to be an increasing reluctance to enter into a binding legal agreement with the Education Department at the commencement of university training — even with the inducement of free university training for such a contract student. If this is so, and if this trend continues, then it is clear that any energies devoted to the recruitment of teachers should be divided in such a way that at least as much attention is given to recruiting amongst final-year university students as amongst matriculants, at whom recruiting campaigns have traditionally been aimed.

It is worth noting that although the part-time group were small in numbers, namely 150/1183 or 13%, their importance is greater than would appear. Thus, amongst the scientists, for example, the part-time group contributed 10 out of the 24 honours degrees during the decade, i.e. 42%.

5. **Distribution of various degrees**

Table IV gives the breakdown of the various university degrees with which the graduate group entered the College during the period.

TABLE IV

DEGREE	NUMBERS	
B.A.	879	943
B.A. (Honours)	35	
B.A. (Fine Arts)	26	
M.A.	3	
B.Sc.	171	196
B.Sc. (Honours)	24	
M.Sc.	1	
B.Mus.	14	
B. Com.	15	
B.Soc. Work **or** Soc. Sc.	8	
OTHERS	7	
Total:	1 183	

Table IV is important in revealing the remarkable preponderance of arts over science graduates during the last decade. The 196 science graduates shown above will be completely responsible for two major school subjects, namely physical science and biology, largely responsible for another important subject, mathematics, and partially responsible for a fourth subject, geography. The 943 arts graduates, on the other hand, will be completely responsible for three major subjects, English, Afrikaans and history, together with several less widely-taken subjects such as Latin and art. This being the case, it is clearly most unsatisfactory that arts graduates should outnumber science graduates by almost 5 to 1. Thus the shortage of science graduates in high school teaching is vividly portrayed by these figures.

In the same way, the fact that two subjects, commerce and music, which, although not major subjects in the high school curriculum are nevertheless of great importance, were only supplied with a little over a dozen graduates each over a period of ten years is more than a little alarming.

The very high ratio between graduates with a first degree in arts or science to those with a higher degree is also very clear from Table IV. In arts the ratio is approximately 14 to 1 (assuming fine arts to be a higher degree) while in science it is 7 to 1.

The variety of degrees included under 'Others' in Table V is remarkable, for it includes degrees in agriculture, logopedics, drama, physical education, law, engineering and even soil conservation!

6. **Distribution of graduates by university**

By no means all the students in the College's post-graduate course are graduates of the University of the Witwatersrand. Table V shows the wide spread of universities from which JCE draws its post-graduate students, together with the number from each university over the decade.

TABLE V

UNIVERSITY	NUMBER
Natal	41
Rhodes	28
Cape Town	33
University of South Africa	28
Stellenbosch	20
Pretoria	34
Potchefstroom	7
Orange Free State	2
Rand Afrikaans University	1
Overseas	7
Total:	201

The figures given in Table V show that 201, or 17%, of the JCE graduate group received their degrees from other universities in the decade under review. Thus these universities, in the case of English-medium universities all outside the Transvaal, are a valuable source of teaching staff for Transvaal high schools. The fact that so many of JCE's graduate group come from Afrikaans-medium universities is at first sight rather surprising, although less so when it is realised that all Afrikaans-medium universities in South Africa have an appreciable percentage of English-speaking students.

The overseas universities mentioned in Table VI are varied indeed: from Dublin to Rangoon and from Reading to Florence!

7. Distribution of subjects of science graduates

Because of the acute shortage of science teachers in the high schools, it is of particular interest to investigate the teaching subjects of the science graduates who have passed through the College during the past ten years. The results of such an investigation are shown in Table VI.

TABLE VI

SUBJECT AND LEVEL	NUMBER
Chemistry II	32
Chemistry III	40
Chemistry IV	9
Physics II	17
Physics III	15
Physics IV	Nil
Zoology II	5
Zoology III	73
Zoology IV	4
Botany II	10
Botany III	59
Botany IV	4

First year courses in science subjects are not included in the above table for two reasons. Firstly, they are not regarded as an adequate preparation for teaching science at a high school level, and secondly because they would in any case not be accurate, as these courses can also form part of the curriculum of arts graduates, whose curricula were not investigated in this detailed manner. Similarly, mathematics and geography are not included in the above Table because they can be taken as major subjects in an arts degree.

From Table VI is it clear how much better served are the biological subjects, with 150 teaching courses, than the physical sciences with only 113. Within the physical sciences, the weakness in physics is particularly alarming. Although physical science, and not separate physics and chemistry, is taught throughout virtually the whole of our school system, less than half as many teachers of physics as teachers of chemistry are being produced. As there are now 50 English-medium high schools in the Transvaal, the above figures show that a high school can expect to receive a science graduate with a Physics II or III qualification once every **sixteen** years. Taking into account the movement of many teachers from provincial high schools into private schools and also the very high wastage of science teachers from the provincial schools the reality is that most provincial high schools can safely work on the assumption that they will probably never have a qualified physics teacher. In the case of chemistry teachers the situation is obviously a little better, but still very serious indeed.

The choice or grouping of subjects for physical science degrees is also unsatisfactory. Without doubt the best preparation for the teaching of physical science in high schools is a degree combining physics and chemistry to a third year level. Yet in the whole decade only **two** science graduates had degrees which included Physics III and Chemistry III. On the other hand the great majority of biology graduates had degrees which included Botany III and Zoology III.

8. Conclusion

This paper is nothing more than a first survey — a preliminary skirmish with the research. The real work lies ahead, namely to follow up what has happened to the above 1 183 graduates **after** they left the College. It would be immensely valuable to discover just how many of the above graduates are still in education, provincial or private, and if they are not, why they left. It is sincerely hoped that someone else will be stimulated to continue this demanding but nonetheless valuable work.

The figures given in Table V show that 201, or 17%, of the JCE graduate group received their degrees from other universities in the decade under review. Thus these universities, in the case of English-medium universities all outside the Transvaal, are a valuable source of teaching staff for Transvaal high schools. The fact that so many of JCE's graduate group come from Afrikaans-medium universities is at first sight rather surprising, although less so when it is realised that all Afrikaans-medium universities in South Africa have an appreciable percentage of English-speaking students.

The overseas universities mentioned in Table VI are varied indeed: from Dublin to Rangoon and from Reading to Florence!

7. Distribution of subjects of science graduates

Because of the acute shortage of science teachers in the high schools, it is of particular interest to investigate the teaching subjects of the science graduates who have passed through the College during the past ten years. The results of such an investigation are shown in Table VI.

TABLE VI

SUBJECT AND LEVEL	NUMBER
Chemistry II	32
Chemistry III	40
Chemistry IV	9
Physics II	17
Physics III	15
Physics IV	Nil
Zoology II	5
Zoology III	73
Zoology IV	4
Botany II	10
Botany III	59
Botany IV	4

First year courses in science subjects are not included in the above table for two reasons. Firstly, they are not regarded as an adequate preparation for teaching science at a high school level, and secondly because they would in any case not be accurate, as these courses can also form part of the curriculum of arts graduates, whose curricula were not investigated in this detailed manner. Similarly, mathematics and geography are not included in the above Table because they can be taken as major subjects in an arts degree.

From Table VI is it clear how much better served are the biological subjects, with 150 teaching courses, than the physical sciences with only 113. Within the physical sciences, the weakness in physics is particularly alarming. Although physical science, and not separate physics and chemistry, is taught throughout virtually the whole of our school system, less than half as many teachers of physics as teachers of chemistry are being produced. As there are now 50 English-medium high schools in the Transvaal, the above figures show that a high school can expect to receive a science graduate with a Physics II or III qualification once every **sixteen** years. Taking into account the movement of many teachers from provincial high schools into private schools and also the very high wastage of science teachers from the provincial schools the reality is that most provincial high schools can safely work on the assumption that they will probably never have a qualified physics teacher. In the case of chemistry teachers the situation is obviously a little better, but still very serious indeed.

The choice or grouping of subjects for physical science degrees is also unsatisfactory. Without doubt the best preparation for the teaching of physical science in high schools is a degree combining physics and chemistry to a third year level. Yet in the whole decade only **two** science graduates had degrees which included Physics III and Chemistry III. On the other hand the great majority of biology graduates had degrees which included Botany III and Zoology III.

8. Conclusion

This paper is nothing more than a first survey — a preliminary skirmish with the research. The real work lies ahead, namely to follow up what has happened to the above 1 183 graduates **after** they left the College. It would be immensely valuable to discover just how many of the above graduates are still in education, provincial or private, and if they are not, why they left. It is sincerely hoped that someone else will be stimulated to continue this demanding but nonetheless valuable work.