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'HOUSEHOLD TREASURES': ATTITUDES TOWARDS THE EDUCATION OF GIRLS IN THE TRANSVAAL 1948-1990; A FEMINIST PERSPECTIVE.

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A Research Report submitted to the Faculty of Education, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Education.

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ABSTRACT

This research report explores attitudes and trends in relation to the education of girls in single-sex White secondary English-medium schools in the Transvaal; it identifies the ways in which these have changed and possible reasons for the shifts.

Character traits fostered, the curriculum, extra-curricular activities and employment prospects for girls were analysed from a Feminist perspective. Texts analysed were school magazines, histories, prospectuses and magazines, textbooks and TED Annual Reports. Secondary sources provided the Feminist theoretical framework and the historical context.

The research revealed that the education of girls is a much neglected area of investigation; although many changes occurred during the period studied, many basic assumptions regarding femininity and societal expectations of girls remain unchanged: their education still fosters marriage and motherhood as girls' ultimate goals, which does not allow girls to develop to their best ability. This is counterproductive for the personal fulfilment of girls and for the labour requirements of South Africa.

DECLARATION

I declare that this research report is my own, unaided work. It is being submitted for the degree of Master of Education in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other University.

Laura Erminia Basola

26th day of August 1991

TO MY FAMILY

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INTRODUCTION

The objectives of this research report are to explore attitudes and trends in relation to the education of girls in single-sex White secondary English-medium schools in the Transvaal and to identify the ways in which these have changed and to investigate possible reasons for the shifts. While many changes have taken place, the core assumptions regarding femininity seem to have remained largely unchanged; South Africa lags behind Western countries in its attitudes towards sexism and it is interesting to investigate how these attitudes are expressed in its education of girls, a much-neglected area of research.

In order to achieve these objectives it was necessary to analyse what has and is happening in the schools from a Feminist perspective. Chapter 1 of Section 1 provides the theoretical Feminist framework while the second chapter provides the historical context against which attitudes developed and changed. In Section 2 the character traits fostered in schools, the curriculum, extra-curricular activities and some of the attitudes towards career-guidance of girls and the employment of women are discussed in detail. Section

3 contains conclusions and recommendations formulated as a result of the detailed analysis of general school and curricular policy, textbooks used, the attitudes of teachers and headmistresses, and official policy. This information was gleaned from scrutiny of school histories, prospectuses and magazines, TED Annual Reports, textbooks, and HSRC (Human Sciences Research Council) reports; for the section on the philosophical and historical contexts I relied heavily on secondary sources: Feminist texts and general histories of education in South Africa. My intention is to analyse what has been said and written about femininity, how the attitudes revealed have found expression through practice in the education system, and how and why changes have occurred in those perceptions and practices.

Initially the intention was to compare a single-sex girls' school with a co-ed. school, then subsequently to do a case-study of one girls' school in Johannesburg, but the TED did not permit me access to vital documentation, so the scope of the report was extended to its present form. There are many aspects which merit research, but which had to be excluded from the present report owing to limits of space; for

example, what have been the trends in the education of girls internationally and how these have influenced their education in South Africa, and teacher training, to mention only two. It would also have been interesting to include an analysis of the education of girls in co-ed. schools but this would have necessitated extending the research report to include a comparison between the education of boys and of girls. The research report raises many issues important to women and for the future of South Africa, but gender is only one of the problems besetting South African education - the issue of race remains crucial.

My concern is how perceptions of gender affect girls' education, and how that education structures their actions, beliefs, values and life chances, and how the education system offers contradictory perceptions regarding women's roles in society. The central question is whether the present educational system is educating girls to the limit of their ability.

The patient and constructive guidance of Professor Randall of the University of the Witwatersrand has been invaluable. Thanks are also given to those schools which allowed me access to material, and to

those teachers who willingly lent their text-books and their time.

A note on punctuation and references

' ' (single inverted commas) indicate the use of a word by the author with which I do not agree.

" " (double inverted commas) indicate a word or phrase directly quoted from a source.

Wherever possible I have used the Harvard system of referencing in the text, but where the reference was cumbersome, or the text required some explanation, I have used endnotes at the end of each chapter.

SECTION 1

Chapter 1

A FEMINIST THEORETICAL FRAMEWORK

Introduction

In 1948 John Newsom, then a school inspector in Britain, expounded the view that girls' education should reflect the notion that:

> Women possess certain particular needs based on their particular psychology, physiology and their social and economic position....The fundamental common experience is the fact that the vast majority of them will become the makers of homes and that to do this successfully requires the proper development of many talents (Arnot, in Walker and Barton, 1983, p69).

This view of girls' education has held sway for centuries, and it was not until the 1960s with the

start of the Women's Movement in Western countries that its validity was questioned. There was a new perception of two problems: the underutilisation of women in the workforce, and doubt regarding the personal fulfilment of girls and women who were being moulded into this domestic stereotype. Girls were not achieving their potential, yet this had not been perceived as a problem by society.

As a result of major socio-political changes, economic growth and the rise of Feminist action, both the USA and Britain have tried to reduce sex differences in access to and treatment within the educational system; owing to limitations of length of the research report, I am unable to describe these developments in detail. However, three significant developments must be mentioned. In the USA, "No person shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving federal financial assistance" (Fitzpatrick, 1976, p153), and in Britain

the Sex Discrimination Act was passed in 1975. On the 14th December 1960 the General Conference of the United Nations Scientific and Cultural Organisation (UNESCO) adopted the Convention and Recommendation against Discrimination in Education, according to which "any distinction, exclusion, limitation or preference which being based on...sex...has the purpose or effect of nullifying or impairing equality of treatment in education" (Chabaud, 1970, p139), was considered unacceptable.

Schooling, in conjunction with all other social institutions such as the family, media, peer-groups, church, contributes to the socialisation of girls into particular roles. The purpose of this report is to investigate how certain factors within the education system of the Transvaal have contributed towards the maintenance of the subordinate position of women in society.

According to Lobban (1) "the school transmits culture to its learners in the form of knowledge and skills.

[These] as well as the aims of the school and education system as a whole are detailed in the official curriculum." Buckland (2) defines the curriculum as:

> that selection from the culture which is presented to the learner in the school. The selection is made at different levels by a variety of different people in a wide range of contexts, and includes activities generated by the school, or by a higher authority for the school. The process includes the inculcation of knowledge as well as the generation of skills and attitudes which are communicated by teachers, by materials, by other children, through direct teaching, individual learning, informal contact and example.

Underlying the official curriculum, however, there is a hidden curriculum, defined as "those aspects of learning in schools that are unofficial, or

unintentional, or undeclared consequences of the way in which teachers organise and execute teaching and learning" (3). Frazier and Sadker (4) maintain that "the hidden curriculum is sex-differentiated and is a potent agent in communicating sex appropriate behaviour". What needs to be analysed in detail is what has been called "the symbolic property (language, cultural tastes, manners) and the educational property in the form of certificates and diplomas" (5) of our educational system, because both are limiting girls' potential.

According to Sutton (6), "constraints on the full utilisation of womanpower in the RSA arise out of two principal sources: value systems which prescribe female occupational roles and eventual levels of achievement and inadequate preparation of female pupils during formal education to meet wide-ranging occupational demands." Feminist scholarship has focused on the fact that "women suffer from systematic social injustice because of their sex. There are attacks on neglect, distortion and

stereotyping of women" (Cosin and Hales, 1983, p7).

What is Feminism?

Biklen and Shakeshaft (7) define Feminism as follows:

> The basis of the conceptual framework of the new scholarship on women is Feminism and rests upon two underlying principles: all issues must be examined in the light of how women are affected as well as men; the structural obstacles to the full realisation of women's potential must be taken into account.

Adrienne Rich (8) believes that "the content of education itself validates men even as it invalidates women...men have been the shapers and thinkers of the world", but Culley (9) explains how during the 1960s and 1970s student interrogation of traditional classroom formats and a desire for education to be more responsive to political and cultural upheavals led to changes - there was a need to rethink the

organisation and delivery of knowledge. Feminist education resulted, which is:

> interdisciplinary, legitimates life-experiences as an appropriate subject of analysis, concerns itself with process as well as product; it is multicultural, and explores interlocking systems of oppression based on sex, race and class. This raises questions about authority, the authority of tradition, of academic disciplines, of the dominant culture or of the institutional structures within which education operates....Feminism promotes sexual equality in public life (Culley and Portuges, 1985, p213 *et passim*).

I have relied heavily on Sandra Acker (10) for the following section, which outlines the main currents of Feminist thought and explains the chief concerns of Feminist education; her definitions reflect other sources I have consulted on the subject.

sources I have consulted on the subject.

All Feminist educational reform efforts start from an assumption that the education system, together with other social institutions, is less favourable to girls and women than to boys and men. Some see the system as in need only of minor adjustments to improve equal opportunities, whi[illegible] others wish to replace it altogether with a woman-centered alternative.

Virtually all accounts of Feminist theory recognize at least three divisions within contemporary Western Feminism. The most common catergorization is socialist, radical and liberal Feminism. Acker (op.cit. pp65-68) describes them succinctly:

> ...recent analysists seem to agree on the distinction between radical Feminism, which holds that gender oppression is the oldest and most profound form of exploitation, which predates and underlies all other forms including those of race and class; and

Socialist Feminism, which argues that class, race and gender oppression interact in a complex way, that class oppression stems from capitalism, and that capitalism must be eliminated for women to be liberated. Both of these would be distinguished from a liberal or bourgeois Feminist view, which would argue that women's liberation can be fully achieved without any major alterations to the economic and political structures of contemporary capitalist democracies.

Socialist Feminist approaches to education focus attention on the role of the education system in producing a labour force differentiated by sex, as well as by class and race. They note the ways in which schools reinforce motherhood to the exclusion of other options and the support schools give to the sexual division of labour in the economy and the family. They are conscious of the persistence of inequality in the wider society and argue that there are limits on reform through education alone.

Radical Feminist approaches to education also acknowledge powerful outside forces influencing educational outcomes. They detail the ways in which men benefit from women's economic and psychological dependency. Particular attention is paid to sexist text-books, to sexual harassment and to practices in schools which confirm boys/men as dominant and girls/women as dependent or subordinate. An emphasis is put on the social construction of knowledge and the ways in which women's contributions to history and culture have been trivialized or ignored. Some Feminists deliberately speak of anti-sexism instead, in order to signal a more radical stance.

Providing girls with 'equal opportunities' in education is the major aim of liberal Feminists. Girls are thought to receive less than a fair share of teacher attention, of school resources and of preparation for well-paid jobs. One strategy is to increase public awareness. Another is to encourage girls to 'seize opportunities' when they arise. Still

another is to work through established channels - unions, political parties, pressure groups, etc.

Conclusion

Feminists argue for an educational programme which will lead to the equality of the sexes. They argue for the importance of education and its potential to change attitudes and behaviour. "There is more a concern to change the form of female education than to restructure boys' education...to 'interrupt' the socialization of boys into prejudiced men. Gender relations become identified as a female rather than a male problem" (11). However, there is a great deal of debate surrounding what we want to educate girls for - do we want them to think like men, or do we also want to give value to those qualities which are controversially called 'feminine'?

ENDNOTES

(1) Lobban, G. (1978) "The influence of the school on sex-role stereotyping" In Chetwynd, J. and Hartnett,

D. (eds) (1978, p52) The Sex Role System Routledge and Kegan Paul, Lond. In Lemmer (1987, p64).

(2) Buckland, F.P. (1982) "Curriculum and reality in South African Schools" in The South African Journal of Education Vol.2, no.4, p167. In Lemmer (1987, p64).

(3) Davies, L. and Meighan, R. (1975) "A Review of schooling and sex roles with particular reference to the experience of girls in secondary schools" in Educational Review Vol.27, no.3, p171. In Lemmer (1987, p65).

(4) Frazier, N. and Sadker, M. (1973) Sexism in School and Society Harper and Row, New York, p82. In Lemmer (1987, p65).

(5) Macdonald, M. "Socio-cultural reproduction in women's education" in Deem, R. (1980, p21).

(6) Sutton, D. (1982) "Women as a source of high-level manpower" in "Womanpower: perspectives for better utilisation" Braamfontein: Manpower and Management Foundation of Southern Africa, p4. In Lemmer (1987, p6).

(7) Biklen, S.K. and Shakeshaft, C. (1985) "The new scholarship on women" in Klein, S.S. (ed) (1985)

Handbook for achieving sex equity through education John Hopkins Press, Baltimore, p47. In Lemmer (1987, p170).

(8) Rich, A. "Taking women students seriously" in Culley and Portuges (1985, p24).

(9) Culley, M. and Portuges, C. Introduction (1985, p3).

(10) Acker, S. "What Feminists want from education" in Education and Society Today Anthony Harnett and Michael Neiel (eds) (1986), Taylor and Francis, Great Britain.

(11) Arnot, M. "A cloud over co-education: an analysis of the forms of transmission of class and gender relations" in Walker and Barton (1983, p84).

Chapter 2

THE HISTORICAL CONTEXT OF THE EDUCATION OF WHITE GIRLS IN THE TRANSVAAL

Introduction

This chapter will provide a brief, schematic overview of the development of secondary schools for White, English-speaking pupils in the Transvaal. The focus will be on educational trends relevant to girls' education and a brief discussion of girls' education in the Transvaal prior to 1948. The General Historical Survey relies heavily on secondary sources, while the problems touched on in Issues specifically relevant to girls' education will be dealt with in detail as the focus of original research in Section 2 of the research report.

1. General Historical Survey

The manner in which English-medium government schools developed in the Transvaal can be traced back to certain features of schooling in the Cape, the most significant being that the school system was at first firmly controlled by local church authorities. "A 17th century Protestant religion with a strongly

Calvinistic trend became powerfully embedded into South African life" (Behr, 1966, p2). This trend was slightly diluted by "the spread of humanistic naturalism (a liberal and egalitarian philosophy) when the first British occupation of the Cape Colony 1795-1802 brought the Naturalist and secular ideals of the French Enlightenment" (Atkinson, 1978, p24).

When Dutch-speaking Cape colonists feared a threat to the standards and values of their Calvinist way of life, some migrated north and eventually constituted the South African Republic (later known also as the Transvaal) in 1856,

> ...but with political instability, the rate of economic development was relatively slow. [Initially] educational activity in the Transvaal involved little more than attempts to perpetuate the ideals and attitudes which had inspired the treks - to prepare young people for their responsibilities in agricultural and domestic life and to fit them for full participation in their religious and cultural heritage (Atkinson, 1978, p108).

Subsequently, during the 1880s, "in contrast to the rather restricted curriculum hitherto followed, it was recommended that pupils should be introduced to a variety of environmental studies from an early age. There was an insistence that education was to be 'national' and 'Christian' but not associated with any one form of Christian belief" (i.e. it was to be interdenominational) (Atkinson, 1978, p119). Education was to develop along secular lines but the wishes of parents for the "religious and moral instruction of their children was to be most scrupulously respected" (Ibid).

With the discovery of gold in 1886 on the Witwatersrand, there was a major influx of a cosmopolitan population from Europe, the majority coming from Britain. "As it became clear that the gold-mining industry would last a long time, a more settled community developed and the demand for schools increased rapidly" (Rand II, 1982, p95).

Pressure for English-medium instruction in the Transvaal grew from English-speaking families who moved into the Witwatersrand diamond fields during the 1890s.

> Official educational policy towards the Uitlanders required them to accept some measure of identification with the cultural traditions of the earlier settlers....Large numbers of English-speaking children were accordingly withdrawn from government schools, some being accomodated in private English-medium institutions established by the Witwatersrand Council of Education (Atkinson, 1978, pp127 & 128).

After the defeat of the Boers in the Anglo-Boer war 1988-1902, Lord Milner acted as High Commissioner of British South Africa from 1901 to 1905; he put into effect a policy of imperial unity by adopting a policy of anglicisation of the education system. "A system of state-maintained schools was to be established in the two Crown Colonies, frankly committed to political objectives" (Atkinson, 1978, p129). As

part of the policy of Reconstruction after the war, the Transvaal Education Department was established, with responsibility for providing schooling for White children in the colony. In 1906 the newly elected Liberal government in Britain granted responsible government to the Transvaal, another step towards clearing the way for political unification in South Africa, which came into effect in 1910. According to the South Africa Act of 1910 there was an acceptance of the principle of complete equality between the Dutch and English languages, and school education was placed largely under the control of the Provincial Councils.

> On the grounds that primary education being largely preparatory is enough for nobody, there was an attempt to provide some form of post-primary schooling for all with the object of achieving both quantitative and qualitative improvements where there was a concentration of post-primary facilities in the larger centres of population....During 1921 money was diverted into the establishment of eleven new high schools

Regarding the language question during this period, both languages were intended to receive equal status. "In the Transvaal its education department early in 1918 required Afrikaans to be introduced immediately as a language throughout each school. [illegible]ment was hastened by the victory of a Nat[illegible] coalition in the 1924 elections (Africa, 1978, p191). In 1925 Afrikaans took the place of Dutch as one of the official languages. In the Twenties, there was the beginning of the agitation by conservative Afrikaners for separate single-medium schools. The pressure was political and came mainly from the National Party and the Dutch Reformed churches. The single-medium schools established during this period were often single-sex schools modelled on the British public school system. "By 1930 most of the White children of school-going age had been drawn into the school net by gradually extending the limits of free and compulsory education. This process was facilitated also by the increased urbanization of from about one-half to two-thirds of the population during that period" (Malherbe, 1977, p156).

The early 1930s saw a greater focus on vocational and educational guidance partly due to the attention being focused on the poor-White problem of the time. Fifty-eight percent of pupils left school without passing Standard 6. (Malherbe, 1977, p226). This led to the introduction of differentiated courses to allow for practical courses in addition to the conventional academic secondary schooling.

In 1937 an education commission under the chairmanship of the Reverend W.M. Nicol was appointed to investigate the education system of the Transvaal in order to improve its efficacy by modernising it and to enable it to comply satisfactorily with the requirements of the whole (White) population.

> The most important grievance against the present system of education is the exaggerated importance which is still attached to the matriculation certificate... Because all pupils are taught in the same way and therefore there is a very high failure rate (Report 0-1, 1977, p51).

As a result of the Commission's findings, a shorter and more practical course of three years was introduced, alongside the more academic course of five years.

The next major step in the development of education for Whites was the accession to power of the National Party, which implemented the ideology of Christian National Education (CNE), Article 8 of which declared that:

> ...in both sorts of schools (English and Afrikaans) there must be the right relationship between home, school, church and state with regard to the spirit, direction, erection, maintenance, control and care of the schools (Rose and Tunmer, 1975, p124).

The following quote from the Report of the Provincial Education Commission of Enquiry of 1951 shows the tenets of CNE:

"The very nature, the purpose and content of education are determined by our [Dutch Reformed Church] religion ....The thorough permeation of our schools with the Christian atmosphere is strongly urged...(Rose and Tunmer, 1975, pp108 & 109).

With the introduction of CNE, for the first time central government policy was imposed on provincial primary and secondary schools. The mother tongue would be the medium of instruction; this meant that English and Afrikaans-speaking children would be rigidly segregated. In 1950 and 1951 parallel and dual-medium education was discarded for compulsory single medium up to and including Std 6. The principal would determine the child's home language.

During and after the Second World War there had been very rapid expansion of industries, mining and commerce, offering attractive salaries to graduates and matriculated persons. This led to statements such as, "Matric must be the goal and you parents of able children must not be misled by the demands of Industry and Commerce, by the high salaries offered to untrained juniors, into allowing your children to

leave school too early" (Sir John Adamson High Magazine, 1954, p12).

In an attempt to rectify labour shortages numerous commissions were undertaken. As a result of the Lynch Report (1950) junior high schools for vocational training were abolished and academic high schools were changed into a "type of comprehensive high school in which there is room for all normal post-primary pupils" (Report O-i, p52). The Steyn Report of 1951 recommended that specialists should go overseas to investigate other countries' systems of differentiation (Ibid.), while the Interdenominational Committee (i) stated that:

> curricula and syllabuses...are in need of drastic change so that the school may fulfil its function in such social circumstances as the disruption of family life, juvenile delinquency etc.; that for this purpose, a stop should be put to a secondary curriculum compiled for the small percentage of pupils proceeding to a university i.e. that secondary education should become fully differentiated (Ibid. p52).

The TED Departmental Circular, No.2, Vol.XXII, Second Term, 1956 pointed out that:

> The modern development and the demands of modern life entail an ever-increasing standard of academic-cultural education at each level of the social structure. It is therefore necessary to encourage every child who has the ability to continue his general academic-cultural education as far as possible, if necessary up to the Std 10 level before beginning to specialise (p93).

With the advent of the space age towards the end of the 1950s "the age of the computer and the space age is having as much impact on society as did the Industrial Revolution and it is vitally important that teachers and parents prepare their children so as not to handicap them for the future" (Bryant, 1982, p160).

The unprecedented growth in the economy of the country during the 1950s and 1960s created an increasing demand for people with at least a full secondary

education. "Concommitantly parents had increased expectations for their children; 'qualifications' were considered important also in view of possible job competition from non-Whites. These factors...contributed to the upsurge in the numbers completing high schools and in those going to university" (Malherbe, 1977, p298).

In 1961 the Educational Panel First Report (2) claimed that "it was a widespread belief that the time had come for the country's education system to be subjected to a critical review" (Education Panel, 1961, pxiii) as South Africa was passing through a phase of rapid economic development. "The scientific, technological, economic and social changes which have taken place in recent years are so far-reaching as to require fundamental adjustments in many aspects of education" (Ibid.). The Panel identified the needs of the time to be initiative, creative thinking and inventiveness. Education had to provide a sufficient supply of people having the skills which were

> From now on the contribution of White education towards the raising of standards of the labour force will have to come more from an improvement in quality than from an increase in quantity....Present policy is directed at encouraging as many White children as possible to follow the full school course and to continue with some form of further education (Education Panel, 1961, p13).

In a further attempt "to obtain an indication of the country's White manpower potential and to identify factors and circumstances which influence the optimal development of this potential", Project Talent Survey was launched during 1965 by the former National Bureau of Educational and Social Research (now the HSRC - Human Sciences Research Council) in which "data were gathered from approximately 70 000 pupils. This 1965 test programme was followed up by two additional test programmes in 1967 and 1969" (MT-29, 1974, p105).

In 1967 the National Education Policy Act was passed. This gave an ideological foundation to the White South African educational system as a whole and its fundamental provisions may be summarised as:

* schools maintained, managed or controlled by the state would have both a Christian and a "broad national" character;
* instruction would be through the medium of the mother tongue, if it was Afrikaans or English;
* education was to be provided in accordance with the ability and aptitude of and interest shown by the pupil and the needs of the country (Atkinson, 1978, p250).

In addition, the organised parent community was given a place in the education system while the concept had become extended from its "Calvinist and Afrikaner National base to that of a broadly Christian and patriotic base" (Hofmeyr, 1982, p?, 16).

In the late 1960s A.J. Koen (3) identified some of the major trends in White South African society:

> [There are now] higher standards of living as a result of improved economic conditions and social services....Our educational system... must meet the demands of technology and science; for scientists...technologists... technicians...and engineers.

This need for skilled personnel in these particular fields was to remain a constant theme in the education needs of South Africa.

A government announcement of November 1971 made clear the general policy to be pursued in the White education system of South Africa. A common idealism was to permeate the system:

> through the conscious expansion of every pupil's knowledge of the fatherland, embracing language and cultural heritage, history and traditions, national symbols, the diversity of the population, social and economic conditions, geographic diversity and national achievements ...(Atkinson, 1978, p252).

As a result the Youth Preparedness Programme was introduced as a compulsory subject in the curriculum of all Transvaal secondary schools for Whites. This consisted of training for physical preparedness, including first aid, life-saving and fire-fighting, and also moral preparedness, which dealt with cultivating 'sound moral attitudes and rectitude' (Hofmeyr, 1982, p84).

The next milestone in South Africa's educational history was the De Lange Report in 1981, drawn up by a Commission of Enquiry at the request of the Cabinet in an attempt to identify the problems of an education system which was not meeting the labour requirements of the country and which was fraught with racial dissention. Although the recommendations of the De Lange Report will be discussed in detail in Section 2, one of its main aims can be described briefly as an attempt to rectify a shortage of skilled personnel in modern science, technology and management.

According to the White Paper on the provision of education in South Africa which was released in response to the De Lange Report on the 23rd November 1983, education would continue to adhere to the principles of a Christian character and a broad national character as formulated in the National Education Policy Act of 1967. The National Party also rejected the recommendation that a single ministry of education be created.

Conclusion

Very briefly, the development of South African education for Whites can be summarised as a steady expansion towards the achievement of compulsory and free education. The language issue remained central to educational legislation, which also attempted to keep as many pupils in schools for as long as possible.

CNE became dominant as an educational ideology after 1948, with its emphasis on efficient centralised control. The economic expansion of the 1950s and 1960s focused attention on the need for skilled workers with greater technical, scientific and managerial skills. Educational thought has focused at

different periods on the increased need for skilled technical personnel as was shown by the 1961 Education Panel and the De Lange Commission of 1981. Malherbe (1977, p155) concludes that:

> [There was al gradual shifting...from cultural adaptation to economic and social adaptation....Efforts [were made] to get the children into school, next to keep them there and lastly to provide the facilities to enable them to profit by being in school.

2. Issues specifically relevant to girls' education

General philosophy

Vietzen (1973, p325) maintains that "the education given to women has tended generally to depend on the esteem in which they have been held." In the 19th century secondary education for girls in South Africa included fashionable elements and was intended for the daughters of the middle and upper classes; their education was permeated by a strongly moral and religious tone. Education was not compulsory and the only employment considered desirable for women was teaching or domestic work; the education of women was

centred on the home rather than on employment, "for it was in the home that the average woman was expected to fulfil her life's vocation" (Ibid. p327).

The above explains why girls' education took the following form: "They will acquire the habits of order, regularity and discipline, consideration for others, qualities which will refine and adorn the homes to which they belong" (Vietzen, 1973, p327). These were the much-acclaimed words of a speaker at the Evangelical Protestant Ladies' School in Pietermaritzburg in December 1878. In addressing the annual prizegiving at the Durban Ladies' Evangelical Collegiate Institution in 1881, the Colonial Secretary described the school's aim as being "To bring the girls up in a manner that befits an English gentlewoman, i.e. houshold treasures whose first and foremost thoughts were of home and home happiness" (Randall, 1982, p44). Such sentiments were not confined, however, to Natal, but also informed girls' education in the early years of the Transvaal, as regards the English-speaking population.

Subjects

The State Model Girls' School was founded in the Transvaal in 1894 for girls above Std 6. For the first time in the Transvaal detailed regulations were laid down for secondary education for girls; there was provision for a broad curriculum including Dutch language and literature, modern languages, arithmetic, book-keeping, nature study, health study, handiwork, painting and music (Atkinson, 1978, p126).

Girls' private schools traditionally offered a smattering of disembodied general knowledge, music, painting, needlework and deportment. Some girls' schools remained faithful to this tradition until well into the 20th century; the headmistress of St. Andrew's explains in her history of the school (Neave, 1977) that it was considered a very important part of a girl's social training to be able to arrange flowers attractively, and that music was a very important part of the curriculum. "The accent was very much upon how girls walked and talked and upon deportment generally" (Neave, 1977, p73). The girls were taught how to pour and hand round the tea graciously, while "academic work was of secondary importance" (Ibid.), but this apparently hardly mattered, because the school was

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very proud of the fact that their girls "married well"(Ibid. p74).

All references to girls' education in the TED Annual Reports for decades emphasised that girls' needs centred around the home and that domestic science was the most important subject in the curriculum. This theme will be discussed in detail under Curriculum in Section 2.

The early 1930s saw a greater focus on vocational and educational guidance partly due to the attention being focused on the poor-White problem of the time. The 1930 domestic science syllabus stated that:

> Economy and aesthetic value in connection with needlework at home must constantly be referred to. Girls who have no practical knowledge of this subject cannot possible help to reduce the number of poor Whites....In domestic science they must be taught everything which will enable them to produce a maximum out of the minimum at home (TED Annual Report, 1930, p77).

Co-ed. or single sex - the New Woman?

The Nicol Report was published in 1939 and made the point that:

> the practice of the Department in the past had been in favour of Co-education rather than separation of boys and girls [in spite of the fact] that some parents prefer their boys to be taught by men, and their girls by women; also that it was easier to modify the curriculum to suit the separate needs of girls and boys if larger groups of them were collected in separate schools. It is doubtful whether anything is gained by having separate schools, except possibly that the choice of subjects would in a few cases be better adapted to the needs [my emphasis] of girls (Nicol Report, 1937, p107).

Addison (1974) describes how "During the Second World War Old Girls [were] serving in the forces abroad, doing war work at home and raising money for war funds with girls in the school playing their part when they

could. Members of the staff and senior girls took lessons in First Aid and attended lectures on Home Nursing; they helped at hospitals and canteens, knitted garments for the forces ceaselessly" (p123).

Although all these actions still fitted into the mould of what was considered suitably feminine, as will be discussed under Employment and Extra-murals, the war marked a change in the employment possibilities of women. Although the Nicol Report claims that the policy of the TED had been in favour of co-ed. schools, this would have applied to schools outside the large urban areas; most of the high schools established in urban areas prior to 1948, where numerically the policy was justified, had been single-sex, modelled on British public schools; during the 1940s and 1950s there was a proliferation of new co-ed. schools in the Transvaal, possibly established to reflect this new concept of womanhood which had emerged as a result of the war, although, as will be discussed under Recommendations and Conclusions, it is questionable whether co-education is more advantageous to girls than single-sex education. Private schools in the Transvaal have

remained for the most part monastic, with token co-education at sixth form level at one or two schools. The most recently established private schools which claim to follow progressive education principles are co-educational.

The prevailing philosophy

The introduction of CNE with the rise to power of the Nationalist Party in 1948 heralded an emphasis on the virtues of womanhood and girls' 'God-given' destiny in building the family - the cornice-stone of Afrikaner society. On domestic science in schools, the 1951 Annual Report complained that:

> This most important subject which should hold pride of place, where girls are offered the opportunity of being prepared for the calling for which every woman is destined, does not receive its due....The formation of character and the development of each girl spiritually and culturally should be the important function of teaching domestic science (p206).

The success of this philosophy was reflected in the fact that "It [was] remarkable that so many pupils assist at home, especially in the case of girls" (Annual Report, 1953, p132). According to the inspector, "Generally speaking, girls are particularly interested in the subject and the number of candidates taking domestic science to matric has increased appreciably" (Ibid. p168).

C.J.S. Coetzee (1979) explained how CNE understands the role of women:

> In terms of a Christian philosophy of life a girl has according to her nature and charge, a different calling and destiny (p18.)....The biologically inevitable destiny of the woman, that of mother, has a decided effect on her educational career (p185)....There is no justification for being excuse from this task (p187)....Her [response] will be based on her philosophy of life which will again be the result of her education - the inculcation of directive values....These values should be geared to her tradition, [calling which

> may be regarded as her duty and privilege (Ibid.).

He attempted to give scientific and psychological proof for this concept of womanhood:

> The considerably lower percentage of girls than boys who take maths and physical science clearly reflects the effect of a weaker non-verbal ability. The fact that the largest percentage of girls takes biology, and that this percentage is almost twice as high as that of boys, suggests that girls, as opposed to boys, choose this subject...to relate this particular knowledge to their own biological destination of bearing children and caring for them (Ibid, p187).

He consistently undervalued feminine attitudes and did not appear to recognise the extent to which girls' attitudes would be negatively determined by the very philosophy he advocated:

> That a larger percentage of girls than boys find that personal and home problems, and to a lesser extent, school and study problems have a detrimental effect on their schoolwork is to be expected. This can be related to a woman's directedness towards the home and family as well as her need to be personally acceptable (p89)....Girls prefer languages and human sciences....a woman regards tertiary training as promoting personal development rather than as preparing for an occupation (p190).

Malherbe commented on more modern trends in the education of girls: more boys than girls completed their high school careers successfully in the 1960s either by obtaining a matric certificate or a school-leaving certificate. He claimed that girls availed themselves more readily than boys of the less rigorous and more practical subjects as options by taking the school-leaving certificate rather than matric. He attributed this to the fact that the courses offered were more suited to the future needs of boys than of girls. "There were also more

immediate employment opportunities for girls than for boys at post-matric stage" (Malherbe, 1977, p?88).

Conclusion

The education of girls appears to be one of the most neglected areas of research and thought in South Africa. There are very few references specifically to the education of girls in standard educational histories of education in South Africa. The debate regarding the extent to which the 'needs' of girls are intrinsic or socially imposed remains unresolved and yet is central to society's concept of gender and has radical ontological implications.

Women are poorly represented in the official power structures of education. Analysis, up to and including 1991, of senior executive posts in co-educational schools, of governing bodies and management councils in both co-ed. and girls' schools in the Transvaal shows a marked preponderance of men both as chairpersons and as members. Married women were appointed to permanent teaching positions in the TED only in 1970, and women on D-category (4 years of post-matric training - over 80% of women teachers) received parity of salary with men only in mid-1991.

In a telephone conversation with the head of the Department of Education Research (a body affiliated to the TED) early in 1991, the reply to my question regarding current research being conducted into girls' education was, "We have far more important things to do."

END NOTES

(1) A Committee established in 1955 to research the curricula and syllabuses of secondary schools in the Transvaal as a result of the recommendations of the Steyn Report of 1951.

(2) A non-government initiative involving English-speaking businessmen and academics.

(3) Education Bulletin, Dec. 1968, p219. "The challenge to education in the modern world."

SECTION 2

Chapter 3

CHARACTER TRAITS

Introduction

The character traits fostered by schools are one of the motivating forces behind all other structures in the schooling system, and are the bedrock on which the inculcation of values rests. Character traits will therefore be discussed in some detail in order to show the attitudes towards girls which permeated every sphere of their schooling, and to attempt to identify the world view with which girls will be imbued.

The character traits deemed necessary are transmitted on two levels: overt statements of policy printed in prospectuses, proudly proclaimed in the editorials of the school magazines and uttered during speeches at prizegiving. However, contradictory covert messages emerge in the same texts, and are more pervasive and lasting. The first set of expectations is

predictable, largely based on British public school virtues, intermixed with religious exhortations emphasising service to one's neighbour. These are apparently a call to personal and intellectual independence, but the underlying messages remain faithful to the much-quoted dictum: "If you educate a man you educate an individual, educate a woman and you educate a family" (Thomas Masaryk, quoted in the 1963 Redhill Prospectus, p2, and numerous other sources). The fundamental message that emerges is that ultimately the family is the woman's responsibility; girls must cultivate suitably feminine attributes, because one day they will marry and fulfil their 'God-ordained' function of bringing up children.

General statements of school policy

Statements regarding the general policies of different schools have not changed much over the years: at Parktown Girls High School service, team work and co-operation have been the main qualities emphasised in the school. "Individuals were accorded prizes only in limited spheres, for example, the Collier

cup was presented to the girls who had shown the greatest loyalty, courtesy and quiet service to the school." (Amoils, 1973, p121).

Miss Jones founded the school in 1905, and apparently the school remained faithful to her aim to "Turn out good citizens, capable women with independent judgement." (Amoils, 1973, p188).

Redhill, a private school in Johannesburg, proclaimed itself to be "a school that believes in imbuing pupils with culture together with education, academic freedom, and public spirit and striving to create complete people with a sense of fulfilment to the best of each individual's ability" (Hayden & Miller, 1975, p10).

The philosophy of Kingsmead is to permit freedom "to express our ideas, to think, to experience, to choose for ourselves within the limitations of loyalty ... to remain loyal to all that we know to be highest and best in the service of God and our fellow man"

(Bryant, 1902, p38). The school insisted that "the more privileged the status of the individual the greater is her responsibility to help others less fortunately placed" (Ibid, p75).

The prime aim of Pretoria High School for Girls was to meet and talk to people, to develop tolerance and understanding for all and to serve the community (Pretoria Girls' High pamphlet, 1977, p38). The school motto is "We work in hope and our Christian faith", the school claims to have a tradition of sterling values, high standards of work and sportsmanship, rigorous character training and selfless service to the community. The aim is to give their girls training in leadership, initiative and courage (Ibid. p59).

An interesting progression emerges in the general character traits valued at Potchefstroom High School for Girls, as these emerged in the school magazines. (All the dates and page references below refer to that school's magazines). In 1940 the aim of the school

as "a well-balanced liberal education - a workshop of humanity, to produce those wise in mind, prudent in action and pious in spirit" (p6). Prizes were awarded to the girl who showed the greatest development of character and sense of responsibility. Certificates of merit were presented to those girls whose work had reached a high level, not according to competitiveness, but in recognition of steady work and developing ability throughout the year (1948, p6 et passim). In 1949 the injunction was that "the minds of our girls must be trained to be creative, tolerant, generous and determined so that they may face life bravely, giving more than they take and finding that 'sweet content' which comes from the realization that 'honest labour wears a lovely face' (p8) and in 1950 they were encouraged to develop a spirit of service, loyalty to an ideal and joyous friendship. Prizes were awarded that year for service, development of character, for general progress and development , general helpfulness and enthusiasm (p11 et passim).

By the 1960s the characteristics most valued at the school had evolved from these rather vague attributes to more functional qualities: in 1963 the prizes were for efficiency, reliability and co-operation, devotion to duty, for general helpfulness and for scholarship. In 1968 girls were given awards for outstanding contributions to sport and a prize was instituted for the promotion of cultural activities. In 1975 attention was drawn to the fact that:

> the materialistic scientific world of today demands a higher standard of scientific and technological education. Though a woman may be educated to take her place alongside the man in business and work, we must ensure that she does so with charm and dignity. She must be well-spoken and widely read, and continue with the emphasis on deportment and cultural interests (p2).

By 1989 an ideal school leaver was described as being decisive, confident, positive, flexible and initiative

(p6). To these characteristics were added "caring, courteous and concerned" (p7). In 1990 the headmistress posed the question: "Are we preparing you to play the role of facilitators and leaders with faith and commitment? I hope you will discover yourselves along the way" (p3).

Intellectual achievement

Over the years, schools have attached more and more importance to the intellectual abilities thought desirable for girls, and there is a distinct shift towards focusing on scientific and mathematical skills. For many years girls' schools aimed to imbue girls with a general, liberal education but as universities raised their admission requirements and manpower shortages made themselves felt in South Africa, this amorphous education was no longer satisfactory.

In 1951 the policy of Potchefstroom High School for Girls was that a school should not set out to provide specific vocational training such as typing, Pitman

shorthand, nursing, training in practical teaching, but that the development of powers of memory and, far more important, of logical reasoning were far more significant" (Magazine, 1951, p7). The school saw value in "a well-furnished mind and the need for a liberal education (Magazine, 1952, p7)." In 1952 Miss Neave of St.Andrew's was proud to announce:

> A new spirit is growing up, a new interest both in work and games which we hope will raise our standards of achievement, and a new sense of order and responsibility is improving discipline and giving us a new stability (Neave, 1977, p126).

She was assisted by the installation of a biology laboratory which she claimed began equipping the girls for the scientific age and, as the new buildings now housed the junior school, she would be facilitated in laying sound academic foundations (Ibid. p114).

The aim of St.Mary's school for Girls was to provide a

first-class education on the broadest possible lines, having a definitely religious foundation (Propectus, 1957, p1). According to the 1963 Prospectus of Loreto Convent "the direction to be given to the studies of each child is determined as far as possible by her disposition, aptitude and probable future ... to fit her to take her place as a useful member of society in later life", and the 1967 Prospectus of that school claims to do no more than give a sound religious and moral training (p1).

During the 1960s academic standards became more demanding. Universities were no longer satisfied with only matric results, but certain faculties also required Prelim, Std 9 and Std 8 marks for admission.

The aim of Redhill (Prospectus, 1963, p1) was to educate girls to make their maximum contribution to society, to think for themselves and to build habits of self-study, thereby sustaining intellectual growth.

In his 1964 address to the girls of Parktown High,

Professor Bozzoli, vice-chancellor of the University of the Witwatersrand, made an appeal for inspiration and creative thinking, and said girls should accept responsibility as the thinkers of the future. The no-matric experiment, in which selected schools set their own internal exam papers according to a standardised syllabus, was instituted at Parktown in 1965; this would give girls the opportunity to develop in self-creativity, independent and critical though , and to work on their own (Amoils, 1977, p142). In 1972, the headmistress, Miss Waterfield was satisfied that girls were thinking in those buildings, learning to learn for themselves, learning how to ask the right questions, and where to go for the right answers (Amoils, 1977, p188).

> The aim of Parktown will continue to be one where education means an ability of the pupils to obtain knowledge from as many sources as possible, to enable her to apply what she has learned to the solution of problems in all spheres of life

(Magazine, 1974, p2).

In 1975 Miss Waterfield hoped that her pupils would leave school as individuals who had found themselves and who were motivated to pursue their professional training to a successful conclusion (Magazine, p4).

When Mr. F.J.K. Simmonds became headmaster of St. Andrew's in 1973 his philosophy was:

> Education involves a widening outlook through instruction and breadth of experience, and [the school] should through contact and understanding, ease the transition to maturity by developing in the individual that measure of confidence and self-reliance which will enable her to cope with the demands of the highly competitive society of our day (Neave, 1977, p214).

'Women's true vocation'

All the above statements of policy do foster autonomy, intellectual curiosity and independence and a desire for personal achievement. There is recognition of the fact that women today will earn their own living and must be prepared to take part in the competitive world; this shift would seem to belie Goodsell's satirical comment that:

> the ideal of womanhood through the ages has been a modest, docile, cringing creature, trained in home-keeping arts, with physical charms sufficient to compensate for an empty mind and with unlimited capacity for self-immolation (Goodsell, 1923, p5).

And yet, my research report will show that there is a constant barrage of contradictory messages to underscore the 'true vocation' of women: to marry and bear the children for whose upbringing they will fundamentally be responsible. They must also develop 'essentially feminine traits' to attract and please.

1. Department

Constant attention has been paid to girls' 'lady-like behaviour'. Raikes (1978, p21) quotes the following: "In 1935 an article in the periodical 'Overseas' stated that what girls required was training in lady-like accomplishments and social graces. They must have their backs straightened with back-boards. They must be taught to speak correctly and with a refined accent. They must learn to play the piano and speak well...

...pupils were expected to be honourable, kind and seemly in conversation." These ideals persisted: the Prospectus of Loreto Convent of 1963 claimed that character formation, physical cultur and training in good manners and correct speech received special attention. In 1967 the prospectus again assured parents that careful attention was given to character formation, health and good manners. The 1963 Redhill prospectus (p10) explained that "physical education

development in which control and poise play their part." The Assumption Convent Prospectus of the same year said special unremitting attention was paid to the moral training, culture and department of the pupils; the 1967 Prospectus of the Convent of the Sacred Heart in Potchefstroom promised that special attention would be given to manners and department. In 1969 the staff of St. Mary's objected to the girls learning war-cries on the gounds that it was not in the interests of young ladies to develop raucous voices. During the 1960s Sister Deidre Michael of St.Mary's Diocesan School for Girls in Pretoria bemoaned the fact that during that decade the current disease of rough manners, lack of courtesy and general slackness had invaded the school; the climate of the times apparently encouraged the girls to kick over the traces and rebel against conventions and rules (Addison, 1979, pp147 & 151). As late as 1976 colours were awarded at Potchefstroom Girls' for department, neatness of dress and appearance, good posture, refined manners and good voice modulation. This was to compliment those girls who still displayed those

"essential feminine qualities" (Magazine, 1976, p12).

2. Marriage and Motherhood

In 1950 Mrs Van den Bos told the girls of Potchefstroom High School that for many girls marriage would prove to be their career (Magazine, p9). In the same issue the headmistress complained, "I do feel that when men retire they should arrange not to snatch away their wives from the spheres where they are most appreciated" (p5). Wives are presented as chattels owned by their husbands. The address by Miss E.F. Goring, an ex-teacher at Potchefstroom Girls, contains the following:

> Every woman must be prepared for two careers - that of making a happy home for husband and children, and that of earning her livelihood. The vocation of marriage requires every power which she can develop...whether it is your rich destiny to make gracious the home and life of your children or to pursue some other career

(Magazine, 1954, p3). [my emphasis throughout this section]

The headmistress described girls working in commerce by the following stereotype:

> ...where, as far as can be learned, they do not arouse the ire of business men by occupying themselves exclusively with powdering their noses, knitting garments and mis-spelling words. We cannot produce an array of imposing and important figures among our Old Girls, but as that nation is called happy which has no history, so may be described the woman who quietly and serenely fulfils her proper destiny as wife and mother...few of the girls remain in their profession to make any real mark (Ibid. p11).

The mayor of Potchefstroom painted a rather more dignified picture and yet his statement also implied

that intellectual pursuits and a career took second place to a woman's place in the home:

> Today girls cannot be too highly educated, as they must be prepared in intellectual development, moral stability, the ability to build a home and the personality to participate and if the occasion arises, to lead in social life (Ibid. p27).

The same message reappeared in 1956 (school magazine, p5):

> We are playing an increasing part in public life and are realising that it is possible to fulfil domestic duties adequately with time to space for active interest in affairs of local and national importance.

The basic view of a woman's role had apparently not changed much by the 1960s. The following extract published in the Pretoria Girls' High School history

(1977, p5) clearly shows how women were perceived as occupying a secondary role in society: "Since the turn of the century, young women have gone out from Pretoria Girls' High School to homes where in every sphere of the nation's life, leaders have been born and nurtured" (Pretoria News, Sept. 15, 1962).

Girls' education in the private schools appeared to take second place to that of boys because Raikes (1978, p9) mentions that only in the 1960s did the Industrial Fund (I) extend its interest to girls' schools. Mr. H.J. Whitecross, the chief inspector of schools, addressed Potchefstroom Girls' High in 1963:

> More married women are engaged in paid work. The family is dwindling to a small unit, in which the mother is increasingly likely to be employed outside the family as well as in her essential role at home...in the seeking of the first rate, the woman has the larger part to play; she is the one who sets the standard through her

> influence in the home in guiding standards of behaviour and through example (Magazine, p7).

The 1967 Redhill Prospectus (p2) reassured parents that "girls who become career women still have to know how to be housewives and mothers. Their training begins in the domestic science lab. at Redhill."

The myths surrounding motherhood and femininity continue unchanged into the 1970s, 1980s and 1990s. Marriage is portrayed as a woman's ultimate goal, and appeals are made to her inspiration of men, not her actions. Mr. Martindale told the girls at Potchefstroom Girls' High, "In four to five years everyone of the present matriculants will be married. I am sure you are looking forward to that day. You have every right to do so" (Magazine, 1971, p11). Mr. Abernethy's prize giving address at St.Mary's Diocesan School included the following claims:

> Woman has always been the source of all

> that was pure, unselfish and heroic in the spirit and life of man, and in life man rises as high as his conception of womanhood...Nothing can replace the influence of a good woman; where the mother sees her children off to school and is there to see them return. Affluence is no substitute for that kind of love (School Magazine, 1972, p16).

The ideal woman is described as follows in the 1981 Potchefstroom High School magazine: "The truly beautiful woman has a well-stored mind, poise, engages in serious discussions and has a gift of blending laughter with fragrance of heart (p9)."

The following 'developmental tasks' for the husband and wife are given in the Matric domestic science text book currently (1991) in use in TED schools:

Developmental tasks of the young husband

1. Becoming established in an occupation.
   Getting specialised training.

Working towards security and advancement in his work.

2. Assuming responsibility for the support of the family.
   Earning the family income.
   Planning for the support of the family through the years.
3. Becoming settled as a married man, sharing leisure time with his wife.
4. Developing mutual interests.

Developmental tasks of the young wife

1. Making a home and managing the household. Establishing and maintaining household routines.
   Learning the many skills of homemaking and housework.
2. Becoming a financial helpmate in establishing the home.
   Working until her husband is established and seeing her work is

secondary and possibly intermittent.

3. Assuming a hostess role when entertaining friends and family.
4. Planning for recreational activities as a couple (Van Zyl et al, 1987, pp488-9).

The above book was the prescribed set-work for the 1990 Matric domestic science syllabus. A far more detailed analysis of the domestic science syllabus appears under Curriculum.

Conclusion

Women's roles therefore have remained stereotypically those of submissive nurturers whose fulfilment really comes from marriage and children. It is still considered important that girls become 'ladies', focus on their appearance, and remain genteel. Are girls being taught to be decisive, independent, powerful and career-oriented, or is the final approval won only when they fulfil their 'biological destiny'?

ENDNOTES

(1) A fund set up by English-speaking business to support educational ventures modelled on a fund which supported English public schools.

Chapter 4

THE CURRICULUM

Introduction

This chapter will provide a general overview of the shifts that have taken place in the curriculum offered in White girls' schools in the Transvaal and the differing attitudes towards the education of girls which these changes have shown. This will be followed by more detailed analysis of certain subjects within that curriculum, in particular domestic science and the teaching of maths, science, biology and guidance. Discussion focussed on these subjects as they are the most problematic in Feminist analysis in terms of their sexist bias.

General overview

A possible definition of the curriculum is:

> Curriculating has as its basis the selection and orderly arrangement of cultural content and the translation of this content to

> educational content....The concept 'culture' as it is used here, points to aspects of life and content which the inhabitants of a country have in common (economy, sport, commerce, industry, technology, public functions, etc.) (De Lange Report, 1981, Vol.6 p29)....[It is] the meeting of specific challenges currently facing education (De Lange, Vol.7 p5).

A century ago, the curriculum offered to girls was generally very limited: "Whereas in the 1880s women's education was not taken seriously, it is now of prime importance. In 1882 a typical curriculum was history, geography, arithmetic, needlework and the usual branches of a sound English education, with singing, French and drawing as extras" (Addison, 1979, p157). The modern curriculum is rather more substantial, and the manner in which it has evolved since 1948 will be discussed.

In 1951 geography was introduced into the curriculum

for the first time as an alternative to a third language; university entrance certificates had to offer maths or a third language:

> This is why in the majority of cases we insist that all girls should take a third language as well as a preliminary geography course in Form 1. The provision of voluntary physics and chemistry classes is another attempt to give girls the knowledge which will stand them in good stead and prevent the miserable floundering through a first year university course (Potchefstroom Girls' Magazine, 1951, p8).

In 1952 the TED issued a handbook of syllabuses for the secondary school based on the following principles:

> In the selection of subjects there should be a decided difference between the courses for boys and the courses for girls, the object in

> view being to adapt the instruction to the needs and aptitudes of the pupils (p5).

According to CNE philosophy, these "needs and aptitudes" are innate. "Mothercraft and hygiene were compulsory for girls in Stds 6-8, but optional in Stds 9 and 10, while manual training was considered their equivalent for boys. The mothercraft and hygiene syllabus consisted of first aid, anatomy and physiology, foodstuffs, nutrition and a balanced diet, personal hygiene, house planning and safety first (Ibid. p65).

By 1955 Potchefstroom High School for Girls had fully equipped departments for teaching domestic science, art, botany, general science and gym. The school offered English, Afrikaans, maths, history, domestic science, hygiene, botany, general science, art, Latin or French, biology and music (1955 Magazine, pp12 et passim).

The subjects taught at St. Mary's School for Girls in

the 1950s included Latin, French, science, maths, history, geography, general knowledge, singing, musical appreciation, gymnastics, needlework, drawing, handicrafts, dancing and domestic science. Special attention was given to speech training, and divinity was taught thoughout the school. Girls were prepared for the JMB (Joint Matriculation Board) music exams of the Royal School of Music, exams of the Royal Drawing Society and the elocution examination of Trinity College. "The curriculum is so arranged that while most girls pass normally to the matriculation exam in Form 5, those girls who wish to receive a thorough general education without taking any exam at all may do so" (Prospectus, 1957, p9 et passim).

It would appear therefore that during the 1950s schools were relatively free to emphasise different fields. While in some schools there was a gradual move towards preparing girls for university, and for coping with the natural sciences, others were permitted to continue with a general liberal education geared more towards social accomplishments. Schools

were not compelled to offer physical science, and often this was taught as general science, comprising biology and science, and not as the more specialised individual subjects (see Prospectus of Jeppe Girls, 1957, Appendix A, for an example).

These trends continued in the 1960s, with the Assumption Convent High School of Maryvale offering Christian doctrine, English, Afrikaans, Latin, maths, botany, history, geography, speech training, class singing, drawing and plain needlework (Prospectus, 1963, p2). This was in spite of the fact that in that year JMB had laid down minimum standards and "core" syllabuses in an effort to raise the standards of matriculants for university entrance and to bring the syllabuses into line with modern needs (Bryant, 1982, p64). A major concern seems rather to have been whether girls were being prepared for running a home. Redhill organised practical work in cookery and housewifery for those girls whose choice of subjects did not include household economics (Redhill Prospectus, 1963, p8). In 1967 the curriculum of the

Convent of the Sacred Heart in Potchefstroom consisted of Christian doctrine, English, Afrikaans, Latin, arithmetic, mathematics, botany, physiology, commercial subjects (National and Pitman's), class singing, sewing, cookery, art, elocution, drama, ballet and physical culture, with special facilities for music (Prospectus, 1962, p3). St. Andrew's showed a similar concern for preparing girls in commercial subjects - in 1969 the Modern Group was initiated and offered shorthand, bookkeeping, commerce, typing, domestic science, art, history and/or geography (Neave, 1977, pp197-198).

Continuing the increasingly technological and scientific orientation of the curriculum in general, in 1967 a syllabus committee was appointed for computer science as a school subject at Std 9 and 10 level. The Committee recommended that computer science should be incorporated in the official list of subjects and that a general orientation course in the computer should form a part of the arithemetic programme for Std 6 - 8 and be taken by all pupils of

the secondary school. It was decided to proceed with the presentation of computer science as a seventh subject on an experimental level (TED Annual Report, 1971, p28). Subject matter in connection with the electronic computer was included in the maths syllabus for Std 7 in 1972 and in 1975 matriculants wrote computer science for the first time (Ibid.). In 1975 approval was given for computer science to be offered in the senior secondary phase.

The 1970s were characterised by a further shift towards specialisation either in commerce or the sciences, and a general overall emphasis on the sciences and maths.

In 1971 Potchefstroom Girls' introduced three additional optional subjects - accountancy, commerce and typing: accountancy as an alternative to geography, and commerce and typing as alternatives to maths. English, Afrikaans and biology were compulsory, while there was a choice between maths or commerce, history or geography, Latin or home

economics or art or instrumental music, or general science (1971 Magazine, p10).

In contrast, Miss Waterfield said of Parktown High School for Girls in 1972:

> The school will continue to offer subject sets that give a good general education, because so many girls do not know what professions or careers they will pursue when they leave. The emphasis is on education and not on a particular skill which can be learnt in a few months at a business or commercial college (Amoils, 1973, p179).

In 1975 Miss Hart, headmistress of Potchefstroom Girls', voiced the general trend of the 1970s: "The materialistic, scientific world of today demands a higher standard of scientific and technical education" (Magazine, 1975, p2). In 1976 the TED Annual Report noted that:

> The introduction of subject sets which ensure a pupil a meaningful choice in his field of study are getting even more support, even outside education. In this connection it is significant that the General Field of Study (1) is becoming less popular (p4).

More pupils were selecting basic subjects for the Natural Sciences (2) and Humanities Field of Study (3) (TED Annual Report, 1979, p1).

In 1973 the Practical course was introduced, which enabled girls to offer domestic science, typing, accounting and shorthand as Matric subjects. Typing and accounting were introduced at Parktown Girls' in 1975 (Magazine, p4), and that was also the year in which matriculants could offer their subjects on either higher or standard grade (differentiated education) in an effort to allow as many pupils to matriculate as possible, owing to the shortage of skilled personnel in South Africa from the 1960s.

The 1980s saw an intensification of the trends noted in the 1970s, and the De Lange Report was symptomatic of grave concern with an education system which was not meeting the labour requirements of the country, and was fraught with major racial dissention. In June 1980 the Cabinet requested the Human Sciences Research Council (HSRC) to conduct an indepth investigation into all facets of education in the RSA in order to:

> (a) allow for the realization of the inhabitants of the country
> (b) promote economic growth in the RSA
> (c) improve the quality of the life of all the inhabitants of the country
> (d) provide for the manpower [sic] requirements of the RSA and the self-realization of its inhabitants
> (De Lange Report, 1981, Vol.1, p1).

From a Femininist perspective, the De Lange Report seriously neglects the issue of gender, which is touched on very superficially, in the light of its

aim to allow for the realisation of the inhabitants' potential, and to provide for the Republic's need for skilled personnel, problems dealing with the under-utilization of feminine skills should have received more than the cursory attention that it did in the report. Gender is mentioned in passing, as in the following two statements:

> Equal opportunities for education, including equal standards in education...irrespective of race, colour, creed or sex....[Education] shall give positive recognition to the freedom of choice of the individual, parents and organizations in society (Ibid. p14).

and:

> Curricular differentiation should not be based on differences of race, colour, creed or sex. It should not seek to encourage differences and division (De Lange, Vol.6, p62).

However, no report deals with problems of gender in

detail. Regarding curriculum development:

> It is recommended that the curricula and subject syllabi for secondary education be scientifically revised (tested) as soon as possible to ensure greater suitability for all population groups and in the light of the country's growing needs (De Lange, Vol.6, pp24-25).

The above quote reveals two major flaws of bias in the De Lange Report, if viewed from a Feminist perspective: it is impossible to devise a scientifically objective curriculum as this would ignore the philosophical roots of the society in which all of its practices are embedded. Therefore, both the explicit values attached to womanhood by CNE (discussed under Section 1 Historical Context) and the unwritten codes for femininity (discussed under Section 2 Character Traits) remain unchallenged. Secondly, it reveals that the bias of the entire report is to address problems of the inequality of

opportunities according to race, and not gender. This view is supported by the following extract, in which gender is not even mentioned:

> ...inequalities in educational opportunities where problems are caused by discrimination, deprivation and privilege...in terms of race, language, religion, ethnicity, socio-economic stratification or one or other combination of these divisive factors (De Lange Vol.14, p120).

According to the report, "the South African system for the provision of education has always primarily been geared to preparing pupils for study at University" (De Lange Vol.1 p31), but that:

> A number of innovational trends in education have developed over the last two to three decades which are generally regarded as manifestations of modernisation. These include:

(a) the functionalisation of the curriculum with regard to the particular needs of the people and the time (De Lange Vol.14, p121).

(b) The present and future South African situation demands people with practical skills therefore there will be less emphasis on a purely academic qualification (De Lange Vol.1, p138).

In 1983 the Practical Course was replaced by the Lower Grade, which enabled a greater number of pupils to offer their subjects in varying combinations of Higher, Standard and Lower Grade, an indication that any level of matriculation was considered better than no matric. In the same year Business Economics was offered on Higher Grade (TED Annual Report, 1982, p8). In 1984

existing subject sets for senior secondary schools were adapted to provide for the needs

> of a general formative vocationally oriented education. The introduction of Lower Grade syllabuses for Std 8 as from January 1984, necessitated the adjustment and refinement of the promotion requirements for Stds 5 to 7 (TED Annual Report, 1984, p23).

In 1985 the number of pupils taking computer studies, the technical and economic sciences and human sciences fields of study increased while the number taking art, agriculture or domestic science remained constant. It was felt there was still a need to make a wider choice of subjects possible, again to ensure that as many pupils as possible obtained a matric certificate (Ibid. p18). Potchefstroom Girls' 1984 Magazine reported that the computer era had caused an increase in the number of pupils wishing to take typing, which from 1986 would be offered in Std 6 (p7) and in 1986 the headmistress said that the technical curriculum had to be updated, and career guidance had to be more effective (p4).

General Overview

A summary of general trends in the changes in the curriculum shows that there has been a steady movement towards a curriculum which focuses increasingly on the natural sciences, commerce and technology, and that great significance is attached to obtaining a matric certificate, which means of course that girls would also be encouraged to remain at school for this purpose. However, what will emerge in the following detailed discussion of girls' participation in maths, science, biology and domestic science, is that there are some fundamental problems which are not addressed with sufficient attention, if at all. The De Lange Report draws attention to certain problems such as:

(a) accessibility, including freedom of choice in the sense of the absence of educationally irrelevant limitations

(b) curriculum contents and standards of subject choice...

(c) physical educational facilities...(De Lange Vol.1 (p211)

and concludes that equalization of educational opportunities should come about by removing any form of discrimination, by inter alia compensatory programmes; all these elements ought to apply to problems of gender, but the Commission's frame of reference is that of race.

Domestic science

Domestic science has been considered to be:

> the important subject which should be a pride of place where girls are offered the opportunity of being prepared for the calling for which every woman is destined ... [and which] is responsible for the formation of character and development of each girl spiritually and culturally (TED Annual Report, 1951, p206).

This reveals the precise nature of the attitudes underlying the education of girls. Although the above

quote was written in 1952, the following analysis of present-day texts in use in schools indicates that beliefs regarding womanhood have changed only very superficially.

Domestic science has consistently featured prominently in the education of girls in the Transvaal. A historical survey of Domestic Science appeared in the 1937 TED Annual Report (pp159-193); the theme which ran through the report was that of the "inherent" differences between boys and girls, already mentioned in the 1906 TED Annual Report. Gardening was offered to the boys as the counterpart to domestic science for the girls. In 1937 the TED undertook a major investigation into education in the Transvaal, which resulted in the Nicol Report, and as no further study of the same magnitude was attempted until the De Lange Report in 1981, the findings of the Nicol Commission would have continued to exert some influence on practice in schools for a number of years. Some interesting points emerge from an analysis of the verbatim transcripts of the report: one speaker who

testified said he would never insist that a girl because she was a girl should take domestic science or hygiene instead of ths or sience (Nicol Report, 1937, p1093 of minutes). He was then asked, "And when she goes to start her own home how is she to have her domestic experience?" (Ibid. p1093). The assumption clearly was that the home is solely the responsibility of the woman, and that boys don't need the subject. The Women's Federation put forward the case for the teaching of domestic science to start at the age of six years (Ibid. p496-7 of minutes). It was further suggested that in a mixed school boys might directly or indirectly share in the instruction in domestic science as it would be of benefit to both (Ibid. p497). This elicited the incredulous question by one of the inspectors: "Surely you do not propose to teach them cookery?" The reply was, "No - they will learn something about setting up housekeeping, and things of that kind" (Ibid. p497).

Many of the witnesses believed that the natural inclination of girls was so strong towards certain

subjects that their choice could safely be limited by the omission from their school curriculum of subjects more generally preferred by boys. This would apply, for instance, to the confining of the girls' choices to biology as a science subject (Ibid. p146).

The Nicol Report endorsed the teaching of manual training and domestic science "as no curriculum would be complete without providing for these subjects" (p96). Other recommendations made in the report were:

(a) Manual training and domestic science should be confined to the secondary school.

(b) There was no satisfactory substitute for these subjects.

(c) Manual training and domestic science should be taken up to Std 8 by all pupils and they should not be optional subjects.

(d) The school nurse should give talks on mothercraft to the girls (Ibid, p97 et passim).

In 1939 an inspector commented that:

> We regret to have to state it, but we doubt much whether "home-making" is stressed at our high schools for girls. South Africa is still a home loving country and we must look to our girls' high schools to do their share in providing the home-makers of the cultured home (TED Annual Report, 1939, p114).

And the tradition continued, because the 1947 TED Annual Report detailed the following objectives for the domestic science syllabus:

> ...All branches of home-making...concerned with the problems of feeding, clothing and housing the individual and the family, the maintenance of personal health, care of children and care of the sick...problems of the consumer, requirements of budgeting and buying...the improvement of the interior and exterior of the home, and enriching the home through the arts (p152).

The inspectors recommended that this subject be studied by girls from Stds 6 to 10 because:

> We feel confident that this subject has justified its position in the school curriculum. Pupils should be encouraged to choose this subject, not as a possible easier subject for the weaker pupil, but because it will help to discover individual interests, as well as develop specialised skills, resourcefulness and independent thought and action....The home is admittedly the backbone of the nation therefore we feel that certain aspects of this subject should be made available to both boys and girls (Ibid. p153).

It was believed that domestic science prepared girls for the calling for which every woman was destined by preparing them spiritually and culturally (TED Annual Report, 1951, p206).

In 1948, in keeping with both the philosophy of CNE and with prevailing attitudes of the time, domestic science became a regular part of the school curriculum (Addison, 1979, p119). The aims of domestic science have remained fairly consistent throughout the decades. In 1964 the Education in South Africa Series No. 3 (an information pamphlet published by the Government) described the aims of housecraft teaching as follows:

(1) To train girls to work neatly, hygienically and methodically and to develop in them a sense of reasoning and an understanding of the scientific aspects of home management.
(2) To inculcate in them culture, religious sense, refinement and other social virtues (p71).

In 1972 the TED syllabus described the aims of domestic science:

(1) To create an attractive, comfortable and

well-organised home and a healthy and happy family.

(2) To lead girls to the realisation that home-making is the most important vocation of woman, and to regard the attainment of success in this respect as a challenge.

(3) To encourage the right attitude towards household tasks.

(4) To supply a basic knowledge of the main aspects of house-keeping.

(5) To develop the intellectual ability of the girl to stimulate her for further study.

(6) To foster neatness, orderliness, dexterity and the systematic planning and performance of duties.

(7) To cultivate a sense of thrift and to stress the importance of living within one's means.

(8) To develop good taste, femininity and elegance.

(9) To foster sound family relationships.

(See appendices B and C for aims of domestic science 1985 and 1987).

Detailed Analysis

The evidence so far has shown that it was considered

of vital importance for girls to study domestic science, but what were they learning if they did take the subject? What follows is an investigation of some of the text-books used and the subject policies adopted over the years. Their influence is particularly pervasive as all girls are exposed to domestic science at least in Stds 6 and 7.

The following introduction appeared in a widely used text-book for Std 6. One of its authors was the TED inspectress for domestic science:

> This book has been written for you, and we hope you will find it so interesting that you will use it, not only at school, but also at home. We are sure you are all interested in your homes and will find much to interest you in the Housewifery section of this book. You will learn how to make your homes comfortable and attractive and how to use modern stoves and equipment, which make housework both easy and interesting. Cookery too, is sure to

interest you...(de Graeff, 1959, p1).

How would a girl have felt who did not feel this great interest in cooking, housework and her home? The contents of this "interesting" book are housewifery, laundry, health and cookery, and it contains comments such as: "It is often said that the kitchen is the 'woman's kingdom' and so it is. The housewife is responsible for the feeding of the family and also for buying and sorting the various foods" (p1). Under General Health the section on posture states "a girl who is nicely and sensibly dressed and carries herself well, will always feel happy and sure of herself" (p41). A girl's psychological health is therefore simplistically judged by her interest in her home and her physical appearance.

The Std 7s of the 1960s would have been exposed to the following 'truisms':

> It is the aspiration of every girl one day to possess her own home which she can equip and

> beautify according to her own taste and where she can rear a happy family (p1)....The mother is the most important person in a home, and the responsibility of making a happy home for her family rests upon her in conjunction with the father (p155). As the household pivots upon the mother, she must always have time to give advice and help to the children....The importance of a well-organized and happy home cannot be stressed enough. It is the mother's delight to have such a home, and she does all she can to have it .... As the mother is a busy person she should have some form of relaxation; she needs to have other interests besides those of her home [such as] sport, social work or church activities, and hobbies (A.E. Van Zyl et al, 1960, p158).

Dressmaking for Girls (M.M. Bergh et al) appeared in 1961 and was used for girls in Std 6 - 10; it was in use at schools at least as late as 1987. In the

foreword, M.M. Heynes, the Inspectress of Education for the TED, wrote: "Every girl who prides herself on her appearance and who is fond of needlework and dress-making should have her own copy of this highly recommended book." The Introduction states that:

> The object of this textbook is to teach the young girls the essentials of personal charm, the right choice of clothing and the correct technique of needlework. If she makes the proper use of her knowledge when she has grown up, she will be able to dress herself and her family elegantly and in good taste in garments which she has selected and made herself. As the content of chapters 1-4 and 42-43 is necessary for the general development of every girl, it is recommended that Std 6 and 7 pupils should also take note of them.

Chapter 1 is on Grooming and Deportment, Chapter 2 on the Fundamentals of Good Health, Chapter 3 on Personal

Hygiene and Chapter 4 on Effective Improvements in Personal Appearance. Within the twenty pages of these supposedly important chapters, words associated with attractiveness and beauty appear at least twenty-five times. Some sample comments from the book are:

Chapter 1 - "It is within the reach of every girl to be well groomed and attractive provided she so desires and is prepared to persevere with the regular care and attention of her personal appearance" (p1).

Chapter 2 - "In order to be really attractive, it is necessary to have good health" (p5).

Chapter 3 - "Proper and regular care of the body ensures a clean and neat appearance which is so attractive" (p6).

Chapter 4 - "You will realize that true attractiveness is now within your reach. Proper care is the basis of attractiveness, but to reach perfection in this it may be necessary to make

> effective alterations to your appearance. This can be done with the aid of a suitable hair-style, correct make-up and elegant manners. These alterations are the finishing touches which create the completely attractive girl (p14)....The last, but certainly one of the most important attributes of attractiveness is good manners. In order to be truly attractive a girl should be friendly, helpful, unselfish, well-mannered, and speak with a well-modulated voice (p21).

The other chapters "necessary for the general development of the girl" are Chapter 42 on the care of clothing, and Chapter 43 on packing a suitcase (pp310 ff.).

In 1970 Senior Home Economics (Haasbroek, 1970) was published, with the following contents:

Section A: dietetics (nutrition and food preparation)

Section B: laundry (cleaning of the house and clothes)

Section C: hygiene and mothercraft (housewifery)

The following two statements are typical of the sexist tone of the book:

> [On the role of the home in the community] The mother or housewife is the axis around which everything rotates and she should be able to organize the activities of the home effectively. If the father is fond of woodwork, a separate room should be provided for this purpose. So also the mother if she often uses a sewing machine and makes her children's clothes...(p284).

and under Mothercraft:

> The female body is designed to fulfil the greatest achievement in life, childbearing.

> In the average, normal female, childbearing and the raising of children is a natural instinct....She should realise her responsibilities not only to care for the baby's physical needs during infancy and childhood, but also to mould this new life throughout childhood and adolescence (p414).

Many of the books published during the 1980s were still in use in schools in 1990, and often they could have been written in the nineteenth century with statements such as: "...will be of great help when trying to achieve the attractive appearance every woman strives for" (M.M. Schmidt et al, 1983(b), p270). The book contains four detailed chapters on appearance and "how to make the best of the qualities you have" (Ibid. p270).

The foreword of Do with the Apron (M.M. Schmidt et al, 1983(a) for Std 9 succinctly clarifies the purpose of Home Economics:

> The purpose of this book is to make the pupil into a useful housewife....An attempt has also been made to foster correct attitudes to everyday household duties and to create a love for all things inside and outside the home....Interest in the art of cooking is encouraged.

Under "Developmental tasks of the teenager" the injuncti is:

> A young adolescent should learn to accept her female role....She should be prepared to accept her role as homemaker (p6) [because] every girl wishes to be a mother someday as it is the fulfilment of her vocation as a woman (p13).

The image of the ideal woman is given:

> The traditional role of a woman is to care for her family and home. In modern times

> many women also have a vocation. This dual role means that she has more work to do and has to carry more responsibility. It is expected of her not to neglect one of these roles in favour of the other. Her homemaking and vocational roles should complement each other. The woman who succeeds in creating the perfect balance between these two roles makes an important contribution towards the welfare of society (p17).

The contents of Oh with the Apron Std 7 (M.S.E. van Niekerk et al, 1985) in use in 1990 are: cookery and nutrition, mothercraft, needlework and dressmaking. The section on mothercraft contains the following: "The wonder of a new life and the birth of a baby is for every woman the greatest event in her life. It must be looked upon as a gift of God" (p165).

Home Economics in Action (A.P. Van Zyl et al Std 9, 1987(a)) is interesting for the topics it does not include - mothercraft and housework - but their Std 10

book 1987(b) makes up for the omission in its presentation of women's role is society:

> In Grandma's days housekeeping routines were inflexible, but in those days women who held jobs outside their homes were the exception to the rule. Today most women fulfil a double role (p35)....The adage that a woman's work is never done still seems to hold true (p36)....The homemaker's contribution to the welfare of the family:
>
> 1. To make a contribution to their husbands, children and society through the effective management of their homes;
> 2. the mental health and security of the family depend on the love and security they experience in the home. It is the homemaker's responsibility to create this atmosphere of love and security;
> 3. the mother has a role as educator of her children. She has to teach them the

knowledge that they will need to function as competent adults in society;

4. A woman devotes time to the care and well-being of her family and provides for their physical as well as emotional needs (p53).

It may be worth reiterating the following section which has already been included under Character Traits because it makes explicit women's subservient position in today's society.

Developmental tasks of the young husband

1. Becoming established in an occupation.
   Getting specialised training.
   Working toward security and advancement in his work.
2. Assuming responsibility for the support of the family.
   Earning the family income.
   Planning for the support of the family through the years.

3. Becoming settled as a married man, sharing leisure time with his wife (p488).

Developmental tasks of the young wife

1. Making a home and managing the household.

   Establishing and maintaining household routines.

   Learning the many skills of homemaking and housework.

2. Becoming a financial helpmate in establishing the home.

   Working until her husband is established and seeing her work is secondary and possibly intermittent.

3. Assuming a hostess role when entertaining friends and family.

4. Planning for recreational activities as a couple (p489).



Under "Sex-role stereotypes" the authors do acknowledge that:

> Today each partner brings resources to the marriage. More and more women are established in careers and sharing the breadwinner responsibilities with their husbands. Men are more involved in child rearing and in sharing household tasks (p496).

But women cannot progress in an independent, effective way if they must then drop their careers as soon as there are children, while it is considered natural that men participate only marginally in the upbringing of children and house-keeping.

Conclusion

All the extracts discussed clearly show that sex-role stereotypes remain almost intact; apart from the passing acknowledgement that perhaps occasionally men help with raising the children, and the housework,

although the books never suggest that they should, the unassailable fact is that boys do not study domestic science (with all its implications for character formation, world-view and self-concept), nor is it even remotely considered a possibility. It is firmly embedded in societal values that a woman's role is to take second place to her husband's career and that her prime fulfilment must be her children. According to these definitions, any woman who does not aspire to these goals is perceived as not "normal".

Maths, science and biology

Introduction

It has become a truism that "adequate grounding in the natural sciences and maths is not only of critical importance for the development of the RSA but that they should be a part of the equipment of every person in the modern world" (De Lange Report, 1981, Vol.1, p133), but my research has shown that girls lag significantly behind boys in their choice of and performance in the natural sciences, particularly in physical science and mathematics. There exists an

awareness that:

> the economic growth experienced in the RSA in the past three years as well as developments in the technological field presently in progress or envisaged for the future, have increasingly accentuated the problems of adequate and suitable manpower(sic). If economic growth and technological development are to be maintained further provision will have to be made in the first instance for the great demand for natural scientists, engineers and technicians/technologists (De Lange Vol.12, p9).

But there is a dearth of research into the reasons for the comparatively small number of girls who enter the natural sciences, and the ways in which this might be rectified.

Maths

The following words were reported in 1953, but the

underlying beliefs they betray have remained largely intact:

> (The mathematics syllabus was said to be too long and difficult). "Sometimes for nights in succession they have to sit with the same problem, and it is just pitiful to see the children, especially the girls, having to do that" (Nicol Report, 1937, p1080 mins.).

The assumption here could be either that girls find mathematics more difficult than boys do, or that they are spending an inordinate amount of time and effort on a subject they do not need.

Maths must have taken a back seat in girls' schools until the 1960s, as my research did not reveal any comments or research on the subject; the results of this neglect were that it was noted that there had been a decline in the number of pupils taking physical science, biology and maths during the late 1960s and early 1970s (0-94, 1980, pxi). This report had been

requested by the Scientific Advisory Council of the Prime Minister which arose after concern had been expressed about the decline in the percentage of Std 9 and 10 pupils taking physical science and maths. This was in spite of the fact that by 1974 most subject sets had maths included because tertiary education was demanding it as essential for almost every profession (Addison, 1979, p142).

Differentiated education was implemented in 1973 to ensure that as many pupils as possible obtained some sort of matric certificate, and "from 1975 matriculants [could] offer maths on the higher and the standard grade (Potchefstroom Girls' Magazine, 1972, p12).

"1977 was the highest point of boys and girls taking biology and maths....If the number of pupils taking maths is to be increased, girls will have to be encouraged to take the subject" (O-94, 1980, pxii). The following percentage statistics refer to <u>average</u> figures collected from 1964 to 1977 for the Transvaal:

TABLE 1

Percentage of pupils not taking maths

	Std 8	9	10	
Boys	14	15	18	
Girls	55	57	56	(Ibid. p67)

TABLE 2

Percentage of pupils taking maths in the private schools

	Std 8	9	10	
Boys	100	99	95	
Girls	71	70	65	(Ibid. p74)

Here the statistics are slightly more encouraging; however, there is still a marked disparity between boys and girls:

TABLE 3

Comparative percentages of pupils taking maths 1964 and 1977:

	1964	1977	
Boys	75	89	
Girls	34	47	(Ibid. p77)

The report concludes: "If the aim is to obtain a higher percentage of pupils taking maths, it would be worth while encouraging more girls to take the subject" (Ibid. p87), but no attempt is made to suggest how this might be done.

Professor C.J.S. Coetzee (1979) affirmed in his report published by the HSRC that "there is no doubt about the verbal superiority of girls. Stronger mathematical ability is likewise one of the reasonably well-established sexual differences" (Ibid. p154). He therefore implies that girls' inability to do maths is innate, whereas as will be shown, recent research has indicated this to be a result of socialisation (see pp105ff. of research report).

In 1981 the De Lange report again noted that girls' interest in physical science and maths was extremely low. While 79% of boys took maths, only 44% of girls did (De Lange , 1981, Vol. 12, p23). The report

claimed *inter alia* that efforts would be made to involve the mass media and the private sector in a large scale counselling programme to promote the popularity of the natural sciences and maths (Ibid. p40). There was no detailed discussion on how girls could be encouraged to take the subject, nor of how their performance might be improved.

In 1981, the HSRC report 0-101 concluded that: "the length, degree of difficulty and abstract-theoretical nature of the maths and physical science syllabi" were regarded as the major factors contributing to the decreasing popularity of these subjects. Only 9,5% of girls chose the pure natural science courses for tertiary study (0-101, 1981, pxxxi2). The report stated that ways should be found of promoting the popularity of maths amongst girls, but again did not suggest how this could be done.

In 1985 an HSRC study appeared of the winners of the Maths Olympiad (an annual interschool maths competition run for the best maths pupils) since its

inception (HSRC report 0-181). The two main aims of the Maths Olympiad, established in 1966 by the Suid-Afrikaanse Akademie vir Wetenskap en Kuns, was to identify pupils with a special talent in maths and to make provision for special mathemat. l exercises to satisfy gifted pupils (Ibid. pxii). The Olympiad attempted "to discover and reward aptitude, originality and competence in maths at school level in order to promote the subject in this ..." (Ibid. p4). An analysis of the medallists betv 1966 and 1983 revealed the following astounding statistics, yet no comment was made on the significance of the statistics, nor, apparently, were they viewed as problematic:

boys: 154 = 93,9%

girls 10 = 6,1% (Ibid. p11)

There has been one attempt (discussed below) on the part of the TED to tackle the problem of girls' performance and interest in maths. Although the document is in line with the most recent overseas research, it is impossible that one study guide can

unde the prejudices and mistakes which are so inculcated in both pupils and teachers, and the bias found in text-books. In overseas periodicals such as MT (Mathematics Teaching - see bibliography) the issue of girls and mathe is addressed repeatedly from different angles (eg. teacher attitudes, classroom practice), but this does not occur in South Africa. If the matter is to be taken seriously, then intensive retraining of teachers is required, and compensatory measures need to be taken at all levels.

In 1987 the Transvaal Education Department circulated a study guide written by the subject committee for mathematics entitled Girls and Mathematics in which the most recent research into the education of girls emerges. What follows is a summary of the main points made in th rather lengthy document. According to the study guide, the stereotypical female is held to be passive, nurturant, subjective and interested more in people than ideas, whereas the stereotypical male is active, aggressive, dominant and interested in ideas. It then explains that the shortage of mathematicians

and scientists in South Africa has been well documented, particularly in the De Lange report which emphasised that the shortage in these fields could be considerably reduced if more girls were to continue their studies in mathematics. "Since there is evidence to suggest that socio-cultural attitudes are probably the determining factors in whether or not girls succeed in mathematics", [and not, as Professor Coetzee (1979) suggests, an innate inability on the part of girls to do mathematics] (my comment) "it is the purpose of this study guide to examine these factors" (Study Guide No.19, p1).

The effects of girls' antipathy to mathematics are described as follows:

(a) A woman who does not have command of certain mathematical skills eliminates herself from many professions. Without mathematics she is relegated to a restricted number of careers.

(b) The society has fewer mathematicians and scientists than it may have had.

(c) If any prejudice of girls towards mathematics is

not eliminated, they carry it with them in.o adulthood only to impart it to their children, thereby perpetuating the attitude, and adding to the mathematics "anxiety syndrome" (Ibid.p1).

The perceived usefulness of maths in getting a job, in doing a job, or in general everyday use, is a predictor of mathematical achievement. Parents and teachers consider maths to be more important for the boys' later career choice than for the girls' (Ibid. p3)

Adolescents consider maths to be a male subject (the girls to a lesser extent than the boys). As girls become older there appears to be a growing tendency to conform with their male peers' expectations of their school and career performances as well as their domestic roles. The differences in the treatment meted out by teachers to girls and boys in the maths classroom influences girls' opinions of their ability in maths and their attitudes to the subject; girls show greater evidence than boys of learned

helplessness regarding maths (p4).

The behaviour expected of girls in society leads them to have less experience in spatial areas, spatial ability distinguishing those who take maths from those who do not; within schools girls are less likely to pursue craft subjects such as technical drawing, woodwork and metalwork. In maths textbooks (and others) girls are portrayed in the main co-operating with or helping other people. The role models offered to girls in maths are of maths teachers who are insecure in their teaching of maths. It is not widely known that many women have successfully combined the role of mother with that of mathematician. The effect of play and early experience is that girls spend less time than boys on construction toys (p5).

Traditionally Western civilisation has distrusted and discouraged clever women, much opposition to the education of girls focusing on the idea that a woman's prime role was that of house-keeper/mother/wife. Prejudice exists regarding careers suitable for girls,

and girls are often unaware of the relevance of maths to any career other than purely scientific ones (p7).

A number of popularly held beliefs exist which are not substantiated by evidence. It has been found that:

(a) Girls are not better at rote learning and simple repetitive tasks.

(b) Boys are not better at tasks which require higher level thought processes and the inhibition of previously learned responses.

(c) Boys do not have greater analytic ability.

(d) Boys do not have greater achievement motivation (p8).

Various possible suggestions are offered: an effort should be made to increase awareness amongst girls and their parents of career areas where maths is needed. The study guide offers a list of 88 possible careers. Professional women could be invited to address the pupils on their work and how they combine their careers with their roles as housewives and mothers. (Here, once again, the TED shows its sexist bias,

which is intrinsic to the system, and which must be overcome before any real progress is made to perfect equality: Why does the study guide not suggest that men be invited to address pupils on how they have successfully combined their careers with fatherhood and their roles as 'house-husbands'? It is relevant that there is no male term for the equivalent of a housewife.) The study guide further suggests that Parents' Evenings should be used to promote the value of mathematics for girls in many activities outside school. Pupils should be made aware of the fact that in spite of a long history of discrimination and indeed, active discouragement [my emphasis], great female mathematicians have emerged. Teachers should encourage girls to an even greater extent than boys to correct prevalent societal attitudes by using applied mathematics concepts. Text-books and exam papers should be non-sexist (pp8-10).

The Study Guide goes on to offer the following practical hints for maths teachers in the classroom:

(a) Avoid praising neatness and tidiness in girls'

work for its own sake.

(b) Be careful not to ignore quiet children.

(c) Train girls to be persistent in asking for help.

(d) Girls should be encouraged to engage in activities that will develop visuo-spatial skills

(e) In high school girls should be separated from boys in their maths lessons as there is evidence that girls profit from single-sex maths classes (p11).

The study quotes statistics which show that lower percentages of girls are taking maths as a Std 10 subject, but that there is no convincing evidence that girls have an innate or genetic disability at maths adequate to account for these lower percentages.

TABLE 4

Percentage of pupils taking Std 10 Maths

	1980	1986	
Girls	54	61	
Boys	72	91	(p12)

The study guide has been quoted in such detail because it raises issues about the education of girls which extend far beyond the teaching of maths - it reveals an awareness of the influence of socialisation on behaviour and aptitudes. It presents a possibility that the vitally important factors the study guide identifies will be applied to the education system as a whole in order to bring about much needed changes in the education of girls.

Physical science

The issue of girls and physical science seems to be one of the most neglected areas of investigation in the Transvaal, although it is well-documented that there is a serious shortage of skilled personnel in the technical fields, and that remarkably few girls take the subject at school to then pursue a career in the natural sciences. Recent studies provide statistics but none of them proposes solutions specifically tailored to confront this important problem.

Science was gradually introduced into girls' schools during the 1950s, and then only as a result of individual initiative on the part of particular headmistresses, and not as official education policy. At St. Andrew's in 1950 there were facilities for the teaching of biology (Neave, 1973, p127) and the headmistress hoped that:

> If possible the science department was to be extended by the provision of a new physics and chemistry lab. The South African Industrial Fund had given generous help to the boys' school to build and equip new labs. and it was hoped that the same facilities would be extended to the girls' school (Ibid. p159).

It appears therefore that it was considered more important for boys' schools to have science labs than for girls' schools. The perception that science was the boys' province is reinforced by statements such

as:

"There is a tendency amongst the more intelligent boys to look upon science ..." (TED Education Bulletin, 1956, A.L. Kotzee, p39). (4)

In spite of official awareness that "the needs of societies [are] dependent upon the successful application of scientific technology (TED Bulletin, Dec.1957, p336) it was left to the discretion of individual headmistresses as to how and when they would introduce physical science into their schools; for example, "Miss McGregor of Parktown Girls', realising that a girl who studied pure science at the University was handicapped if she had not studied physical science at school, introduced this in 1958 (Amoils, 1973, p105).

"The shortage of manpower in the field of technology during the 1950s [had] resulted in a variety of physical science syllabi for gifted pupils" (Report 0-85, 1979, p33) but as there had been no attempt to

create a broad base of physical science skills which girls could participate, this would appear to have been futile in its attempt to make up for the shortfall.

The technological explosion of the 1960s with the advent of the space age apparently encouraged pupils to study physical science at school, but only briefly, because, as already mentioned, Report 0-94 of 1980 had been requested by the Scientific Advisory Council of the Prime Minister as a result of concern which had been expressed in the early 1970s about the decline in the percentage of Std 9 and 10 pupils taking physical science and maths. Their statistics cover the 1970s and revealed that only 20% of all girls in Std 10 took physical science compared with 66% of the boys. There was also a large disparity in Stds 8 and 9:

> There is a remarkable difference between the percentage of boys and girls who take physical science in Standards 8, 9 and 10. This difference in the subject's popularity

among boys and girls is a world-wide occurrence as confirmed by Comber and Keeves in their report "Science Education in Nineteen Countries (1973)" (Report 0-94, 1980, p26).

TABLE 5

Percentage of pupils studying physical science, 1970s[1]

	Std 8	9	10
Boys	76	74	73
Girls	27	25	25 (page 33)

In 1975 the headmistress of Potchefstroom Girls' was aware that "the materialistic scientific world of today demands a high standard of scientific and technical education" and yet only in 1976 did she report that "physical science will be introduced next year in Std 8 for girls wishing to follow the natural science course" (Magazine, p2); in 1984 the school was given two fully equipped labs for science, which makes one wonder how much physical science the girls could have been learning without them.

The De Lange Report of 1981 drew attention to the problems surrounding girls and physical science. In 1977, in White secondary schools, only 8,7% of girls taking physical science indicated this was their favourite subject, while 80% of girls were taking biology, often at the expense of physical science and to a lesser extent maths (De Lange, 1981, Vol.12 p23). While 42% of boys planned to follow a degree course in a field related to the natural sciences (Ibid. p25), only 30,9% of girls were interested in careers in the natural sciences. The popularity of science among boys was described as normal but only 19% of all Std 10 girls took physical science (Ibid. p23). No attempt was made to discover the reasons for these statistics nor to suggest possible remedial measures. A report published in the TED Education Bulletin in 1985 on goals and objectives in relation to the science curriculum makes no mention of girls, and by 1990 the TED had not issued a single Study Guide on the specific problem of girls in relation to physical science. In Report 0-111 (1983), "Aspects of classroom practice in Physical Science" by C.H.

Swanepoel, there is no mention of girls' problems with physical science, and how these might be partly the result of what happens in classrooms.

Typing is considered to be a subject typically taken by girls, while physical science is considered to be a 'masculine' subject. Appendices D and E are the TED syllabus for General Science (physical science component) and the Subject Policy for Physical Science at Sir John Adamson, both of which reveal the aims of the subject. Both are dated 1984, but the aims will have remained consistent, as they are expressed in such broad terms. Appendix F details the aims of the typing syllabus in the TED and it is interesting to note that while the aims of physical science deal with the problems of humanity and higher intellectual faculties, the aims of typing deal with skills and qualities more suited to housekeeping.

Guidance

The definition of school guidance provided by the De Lange Report is:

> ...a practice, a process of bringing the pupils into contact with the world of reality in such a way that he acquires life-skills and techniques which allow him to direct himself competently within the educational, personal and social spheres and the world of work in order to progress and survive effectively (De Lange, Vol.7 p5)...to assist pupils in the transition to adult status and give them knowledge about sex, marriage, family organisation and child upbringing, living in a family, the role of the father, mother and the children, attitudes to each other and sharing the work in the home (Ibid. p102).

This definition is fraught with problems; it ignores completely the different philosophical world-views on which a vision of 'reality' is based. The premises on which such things as the role of the father, mother etc. are based cannot be challenged according to this definition because they are based on 'absolute truth'.

In fact the report goes so far as to claim that "The new Guidance syllabus should contain a system of universal and absolute values..." (Ibid. p15).

Guidance was introduced into schools in 1948 when the syllabus was approved by the department and teacher counsellors were appointed at each post-primary school (TED Annual Report, 1950, p121). In 1962 the aims of guidance teaching were described as "... giving the facts about the environment and about occupational opportunities and requirements" (Education Bulletin, 1962, p127). In 1981 the De Lange Commission described the role of guidance:

> The school guidance programme has to [inter alia]:
>
> (a) make an active contribution towards realising the potential of the pupils as future adult inhabitants;
>
> (b) make a positive contribution towards meeting the manpower needs of the country;
>
> (De Lange, 1981, Vol.7 p1).

These principles are acceptable in theory; however, a problem arises in the manner in which the 'solutions' are implemented. An analysis of random issues 1975 - 1988 of a periodical "My Career" which is found routinely in TED guidance classrooms or libraries, revealed an overwhelming bias towards male workers, both in the text and in the accompanying photographs. Males were portrayed as engineers, plumbers, lawyers, chemists, chartered accountants, civil engineers, biomedical engineers, material scientists, metallurgists, topographical and engineering surveyors, farmers, veterinarians, machine operators, miners, life insurers and bankers. Only those articles on teaching, geology, the hotel and catering industry, on private secretaries, fashion models, nursing and beauty therapists had a female bias. In terms of its own requirements and its own definitions the school guidance programme is therefore a failure because the claim is that "the effectiveness of the school guidance service is determined...the way in which pupils are guided to make an educational and

careers choice which will enable them to realise their potential" (De Lange, 1981, Vol.7, p1), and if the modern sector requires a highly skilled and sophisticated work force, then the guidance programme is certainly not utilizing the potential of women as it should, and in fact is inhibiting change and growth.

Conclusion

The unchallenged beliefs underlying the philosophical basis of girls' education - the myths surrounding femininity - affect every level of the curriculum, both in the content and in the manner in which it is implemented. Official policy permitted schools to have a free hand in the subjects they offered because the possibility of utilizing women in the work force was constantly governed by the societal expectations of motherhood, and it was left to individual initiative within schools to determine if and how more functional subjects such as physical science, for example, would be offered. A scientific bias and personnel shortage were sharply felt during the late

1960s and 1970s and so official attention turned to the lacunae in girls' education; however, curricular policy has not yet caught up with a firmly embedded bias and neglect.

ENDNOTES

(1) English, Afrikaans, maths and science/ biology/ history/ geography/ German/ Latin/ French/ metalwork/ woodwork/ accountancy/ housecraft/ business economics.

(2) English, Afrikaans, physical science; biology, maths and history/ geography/ German/ Latin/ French/ metalwork/ woodwork/ accounting/ housecraft/ business economics/ music/ Bantu languages [sic]/ biblical studies.

(3) English, Afrikaans, history and geography/ biblical studies/ art/ music/ economics/ maths/ German/ French/ Bantu languages/ physical science/ biology (Manual for Secondary Education, issued by TED, in use 1990, pp25 et passim).

(4) "The Education Bulletin is a journal which in a scientific manner places at the disposal of the

teaching personnel the results of educational research, and the most recent developments in education of this country and overseas. The contents of the Education Bulletin are informative and not prescriptive. Although it is regarded as an official journal, it does not necessarily convey the educational policy of the Department" (from the title page of each issue of the Education Bulletin).

Chapter 5

EXTRA-MURALS

Introduction

The extra-mural activities offered by the girls' schools being investigated in this report reflect the perception that girls must be brought up to be genteel, nurturing, self-less and interested in cultural events, ; that girls are more suited to engage in verbal rather than physical activities, and attention is given to those activities which focus on aesthetic considerations.

Sport

According to the 1949 TED Annual Report, "sport has great value for the inculcation of social virtues and traits of character" (p86), therefore the fact that girls are excluded from the 'typically male' sports of cricket, soccer, and rugby sets up certain 'natural' perceptions about gender. Rugby is the only sport which might be considered typically male for an arguably sound biological reason: girls' muscular and skeletal structure may not be strong enough to

withstand the physical pressures of rugby, but there is no medical reason why girls should not play soccer or cricket. These arbitrary divisions within sport regarding what is 'suitable' or 'typically' female reinforce gender stereotypes. The "virtues and traits" therefore learned by girls are that certain sports are 'unladylike' and should be left to the strong males, as the females are either too weak or unskilled to participate in them. There have been sporadic sorties into girls' soccer and cricket (1) but these were short-lived and these sports are no longer played in girls' schools.

In 1949 gymnastics was considered a full sport for the first time at Parktown Girls', and colours and scrolls were awarded for skill (Amoils, 1973, p127). The Games Committee which was inaugurated at the school in 1952 did much to foster an interest in sport by awarding colours and scrolls. The Committee awarded the Foster Cup for games, gymnastics and posture, and the Rotary Cup was for games, work , neatness and attendance (Amoils, 1973, p121). The juxtaposition of what was considered praiseworthy is interesting.

However, until the 1960s prowess at netball was not highly regarded and "if you excelled at gym you were unofficially considered among the girls to be an unfeminine crank" (Amoils, 1973, p128). In the Transvaal girls were only allowed to take part in cross-country from 1970, for example, Potchefstroom High School for Girls, even where the facilities already existed, as in some of the co-educational schools.

Girls' schools today offer varying combinations of the following: tennis, athletics, swimming, gymnastics, hockey, netball, basketball, squash and diving. The sports offered have increased in number over the years, which probably indicates a new emphasis on physical fitness and dexterity.

Societies and clubs

Many of these reflect a strong bias towards the spoken and written word, thus reinforcing the belief that girls are more verbally than mathematically inclined.

The News Society founded in 1948 at Potchefstroom

Girls' was "elastic in its accomplishments for example discussion of modern problems by way of short addresses given by the girls on any point of interest" (Magazine, 1948, p5). In the same year the Classical Society was started, in order to study ancient civilisations (Ibid. p7). At St. Mary's Diocesan School "interest in social and political affairs returned vividly in the minds of the senior girls when the School Forum was founded in 1949. Speakers were invited to introduce topics, followed by questions and discussions" (Addison, 1979, p18). Clubs based on similar principles were established at various schools: in 1958 an Annual Conference for girls in the senior Secondary phase was initiated, its purpose being to give girls the opportunity to discuss some of the religious, moral and social problems which they would face; in 1961 there was the Quest Club at St. Andrew's, the Nutshell Club at Potchefstroom High for Girls, the Quest Club of Pretoria Girls' in 1977, and a similar one at Kingsmead in 1982.

Other societies and activities which fostered the spoken and written word were: competitions in

singing, speech and general knowledge; inter-house play festivals, eisteddfods, play readings, literary, debating and dramatic societies, literary quizzes, poetry circles, French and German societies, and a typing club was initiated at both Pretoria Girls and at Potchefstroom Girls in 1977.

The research has identified only two clubs which encouraged physical activity: in 1964 the self-defence club was started at Pretoria Girls' High; its members were described by the editor as the "scruffiest bunch of roughnecks in the school" (History pamphlet, 1977, p40). The other was the life-saving club at both St. Mary's and Parktown Girls.

Clubs with a cultural bias are the philatelic club (St. Mary's), chess (Pretoria Girls', Parktown Girls') and the photographic society (Potchefstroom Girls').

Crafts are also encouraged through art clubs, knitting competitions, pottery and sculpture. Prizes are awarded for drawing, painting, crafts and needlework.

Kingsmead had a horticultural society during the 1950s and Parktown Girls' had a short-lived garden club during the same decade (Amolls, 1973, p136).

Charities and social awareness

Charity work is and always has been heavily emphasised in all the schools studied. The activities undertaken by the girls to raise funds are all suitably feminine: cake and jumble sales, knitting, sewing, fetes, dancing displays and mannequin parades; they dress dolls, make warm clothes and knit blankets. The favourite charities seem to be those involving children and the aged.

During the 1940s and 1950s 'natives' [sic] received much paternalistic attention. In 1948 the girls from Potchefstroom High went to visit a 'native' nursery school, for which they renovated old toys and dressed little dolls; in 1958 the St. Mary's Diocesan School girls visited 'native' nursery schools where the boys were given toys and the girls dolls. These visits were linked to the School Girl Social Study Conferences which were held during the 1940s and

1950s, their aim being to study the conditions of Black people by means of lectures and visits (Raikes, 1978, p110).

Potchefstroom Girls' supports the "Save the Children Fund", and for years Parktown Girls' has supported Cransley House (an Old Age home) and the Margaret Ballinger Home (an orphanage for Black children). The only change that has taken place is that schools are becoming involved in environmental projects such as the Save the Rhino Fund and Save St. Lucia Bay at Potchefstroom Girls' High in 1989. Many of the schools have a Students' Christian Association, and some also have Girl Guide platoons, all of which endorse girls' supposedly innate inclination to nurture.

Excursions

These have been arranged to hospitals and nurses' training colleges, to nursery schools in the Black townships, and to teachers' colleges. After all, girls are considered to be naturally predisposed to be nurses, teachers, and interested in children. To

ensure that the girls grow up to be cultured ladies, outings are organised to the opera, concerts, ballets and plays. Since the 1970s, the repertoire of excursions has widened to include tours of the J.S.E., the Medical Research centre, i.e. to places of either commercial or scientific interest.

Extra-murals and science

In fact, there has been a steady increase in activities which involve maths and science, a reflection of society's growing technological orientation.

1953 saw the founding of the Argosy Club, which aimed to draw together English and Afrikaans speaking schools in Pretoria. Outside speakers welcomed questions and discussions on many subjects, including astronomy, palaeontology, zoology and the decimal system. This was apparently very popular with the girls (Addison, 1979, p129). In 1956 Parktown Girls' revived its science society; its members were addressed by speakers on a variety of scientific subjects, and looked after the science museum and

garden (Amoils, 1973, p.74 *et passim*).

In 1963 the Witwatersrand High School Science Association was founded; it was the junior branch of the South African Association and was run entirely by high school pupils (Sir John Adamson High School Magazine, 1963, p24). The Association encouraged excursions to the Medical School, the gasworks and sewerage farms. "In 1963 a science club came into being [at Parktown Girls'] with a limited but very enthusiastic support" (Amoils, 1973, p186).

In 1966 the first Maths Olympiad was held. This was an inter-school maths competition in which only the better Maths pupils took part. A detailed discussion of this appears under Curriculum in Section 2.

Girls from St. Mary's attended the National Youth Science Week held in Pretoria in 1972. Part of the programme were tours to ten centres of science and industry. Of the one hundred pupils who attended, only nine were girls (Addison, 1979, p92). In 1977 girls from Pretoria Girls' attended the Witwatersrand

High School Association Science Week Competition where members could speak for approximately ten minutes to voice their opinions (Pretoria High School for Girls History pamphlet, 1977, p72).

The "genteel accomplishments"

St.Mary's, Pretoria Girls' and Potchefstroom Girls' offered bridge. Two schools stand out in particular for the extra-murals they offered - in 1963 Loreto Convent offered dancing, elocution, music (piano, violin, theory of music), commercial courses in typewriting and shorthand; and Redhill offered music (modern, classic and music appreciation), art, speech and drama, home economics, dressmaking, modern movement, ballet, poise and deportment, and riding (1963 Prospectus). Redhill holds a traditional cookery competition (Hayden & Miller, 1975, p11).

Aesthetics

The need for physical attractiveness was emphasised by some of the extra-mural activities organised in the schools. In 1951 the girls at Parktown Girls' took part in a folk-dancing display in which " the national

costumes worn by the women and girls made a lovely colourful picture" (Amoils, 1973, p24). These types of displays seem to have been the vogue during that period because in the same year the girls from Potchefstroom High School for Girls participated in the "rhythmic gymnastics in white classical tunics; the glittering hoops, graceful and faultless movements of the girls made a memorable picture of beauty" (1951 Magazine, p19).

Drum majorettes became a feature of many girls' schools during the 1970s and in 1989 St. Dominic's Convent received national acclaim when its drum majorettes won a competition in the USA. In 1976 Potchefstroom High School for Girls held a fashion parade; over the years a number of schools have held beauty competitions.

Conclusion

The extra-murals seem almost to be orchestrated to maintain the myths of femininity, and cultivate skills and interests which perpetuate what are considered appropriate attributes for girls.

ENDNOTES

(i) Girls' cricket at Parktown Girls' in 1953, Jeppe Girls' during the 1950s, Johannesburg Girls' in 1961, and girls' soccer during the 1970s at Pretoria Girls'.

Chapter 6

PREPARATION FOR EMPLOYMENT

The issue of women at work remains confused by the myths surrounding motherhood and femininit

> the attitudes of society, and of men, have a bearing on when women will work, and on the type of work they will undertake. While the participation rate of married women in the labour force increased from 11,3% of the total White female married population in 1951, to 19,4% in 1960 and to 27,9% in 1970, the primary interest of every woman is in marriage and a family (Wessels, 1974, Preface & Introduction).

In schools, well-defined expectations were communicated to girls through the advice given and the curriculum offered.

In the 1938 IED Annual Report the Inspector of

Guidance explained how girls were expected to fulfil positions as shop-assitants, office workers or factory-workers; he also felt that there was a need to break down the social prejudice that existed against certain spheres of female employment (no details are given as to what these might be). In addition he noted, "It is striking how many boys in Std 6 and even in Std 7 select trades and the girls house-keeping, dress-making and so on as their future careers" (TED Annual Report, 1938, p82).

The inspector of 1941 wrote in the TED Annual Report that:

> ...many posts, previously occupied by people who had enlisted, had to be filled. Girls especially, easily found employment of all types on the Rand. There was always a shortage of typists, probationer nurses, assistant matrons, factory workers, etc. (p108-9).

The Second World War did much to alter the status of women in South Africa, as is reflected in the address by the then Prime Minister, General J.C. Smuts, at the South African Women's Auxilliary Service meeting in 1944:

> The greatest thing that had happened, was the way the women had risen to the occasion ....The country had been able to maintain in its military forces a body of women equal in efficiency to the men .... SAWAS will play a foremost part in post war reconstruction (Potchefstroom Girls' Magazine, 1944, pp36-37).

During and after the Second World War there had been very rapid expansion of industries, mining and commerce, offering attractive salaries to graduates and matriculated persons. In 1947 domestic science was thought to be very important as it provided preparation for work in food factories, clothes factories, interior decorating, firms which advertised

products for the home, in creches, etc.

The above trend would have led to similar comments to this one in the 1948 Potchefstroom High School for Girls Magazine:

> It is necessary for girls to take advantage of every educational facility to equip themselves to take their place in a developing country. The fact that communications have developed, bringing all nations closer together, should be an added incentive to develop citizenship. Girls are urged not forget their duty to their own country, South Africa (p6).

Girls were then being called upon to do their patriotic duty and study in order to work more effectively. However, a contradictory comment appears in 1949: "[Miss Sprigg's] contacts during the war fitted her to play an important part in assisting women to readjust themselves to civilian life" (Ibid.

1949, p5), which suggests that it was felt necessary to get women out of the workplace and back into the home, as that is what civilian life would have meant to the majority of women.

An analysis of fields entered into by girls with Std 10 revealed:

Most popular fields

1. Teaching
2. Commercial training
3. Nursing
4. University BA
5. Clerical work

Least popular fields

1. Agricultural college
2. Pharmacy
3. Trades
4. Air hostess
5. Architecture (TED Annual Report, 1949, pp125-8).

At Parktown Girls' the Parents' Association, "cognisant of the diffidence of English speaking girls in undertaking teaching as a career, in 1951 launched a bursary scheme to encourage girls to adopt this profession" (Ambils, 1973, p54).

In Guidance, the approach to careers was the same for all pupils, i.e. they ought to have knowledge of their:

- physical abilities and disabilities
- intelligence level
- personality, character and temperament

However, "In Std 6 and 7, the syllabus for boys and girls will be the same to a large extent. Only in the careers for detailed study will there be an increasing distinction. In the senior standards, increasing attention will be given to the special needs of girls. Suggest clothing factories, milliners, stewardesses. Emphasise a woman's place in the commercial world and motherhood" (TED Annual Report, 1952, p211). A list is given compiled fromostatistics

of the jobs chosen by girls in 1953 (1).

Attempts were being made to keep girls in school until Matric; in the 1954 school magazine of Sir John Adamson the headmaster made the following appeal in this Editorial Comment: "Let me here plead once more for the full and proper education of pupils especially girls, as they are such vitally important members of our community. Please let your daughters stay to Matric" (p11).

During the early 1950s there was a severe labour shortage; industry and commerce were willing to pay high salaries to employees who had only a Form 3 certificate. According to the headmaster of Sir John Adamson, "Two pronouncements by prominent men, the Administrator of the Transvaal and a member of the Provincial Executive Committee, indicate that there is in official circles an appreciation of the fact that a JC (Junior Certificate) education is not enough. It is certainly not enough for the intelligent pupils who have the ability to go further" (Ibid).

Although the following statistics add up to more than 100% they do give an indication of the types of careers which attracted girls during the 1950s:
34% teachers, 10% nurses, 35% at University and technical colleges for librarianship, laboratory work, medicine, physiotherapy and occupational therapy, 28% in offices and banks (Potchefstroom Girls' Magazine, 1954, p11).

During the 1950s a number of schools showed a shift towards encouraging girls to study further and to become more career oriented:

> [By 1956 there were much-improved matric results, which then continued.] These were not just a flash in the pan but were based on intelligent hard work and real intellectual interest....The majority of girls who matriculated now went on to University and almost all who left School undertook some type of training such as nursing, teaching or

secretarial work. Few were content, as in the old days, to sit at home,leading a social life and waiting to get married (Neave, 1977, p139).

The 1957 Prospectus of St. Mary's DSS reveals a similar shift in emphasis towards academic achievement and interest in a career:

> It is hoped that parents will not regard the passing of matriculation as the end of the child's school career. Girls are encouraged to stay for at least another year in the sixth form. There they may specialise in subjects for which they have a natural bent, or may prepare themselves for the first year at their university. At the same time they learn to use a more ample leisure and to assume greater responsibility both for themselves and for others....All girls are encouraged to aim at a future career which will benefit other people (pages not

numbered).

In 1958 Sister Joan, the headmistress of St. Mary's, wanted to prepare girls for BSc degrees at university. She encouraged girls to take teaching as a career; nursing and allied professions such as physiotherapy were recommended and followed (Addison, 1979, p134). "Sister Joan felt responsible for advising and directing them to careers of service and self-fulfilment. She referred to numbers who had taken up nursing, teaching and even [sic] medicine" (Ibid. p139).

In spite of girls' schools encouraging their pupils to study and work, the 1960s were still marked by a severe shortage of personnel; A.N. Conradie, an inspector of Education, addressed the girls at Parktown High School for Girls in 1965 and told them that a personnel officer was reported to have said, when asked whether the demand was greater for boys than for girls, "For anything that can work, we have work." Mr Conradie continued that never in the

history of South Africa had it been so easy through bursary and loan schemes to attain academic qualifications at University and he emphasised the need for everyone to pull his or her weight in work and in study. "Remember that you occupy a privileged position in this country and that entails great responsibility. Have pride in the brains God gave you." He also told them to bide their time in finding a husband (Magazine, p8).

In 1967 Sister Deidre Michael, the new headmistress of St. Mary's, said the matter of the choice of a career had become almost as important for girls as it was for boys (Addison, 1979, p76). This comment reveals that although it was considered necessary for girls to work, a career was still secondary to a girl's role as wife and mother.

In the 1970s there was an ever-increasing demand for skilled personnel with technical and scientific expertise.

> As the demands for trained personnel grew to meet the needs of advancing technology, more and more parents wanted their daughters to qualify in specific fields to which there was only entry through matric. Nursing associations and nursery school teachers' associations were no longer permitted to accept non-matriculants (Bryant, 1982, p30).

Girls were slowly becoming involved in science-oriented careers, although they still shied away from the hard sciences. "After English and Afrikaans, biology was the subject studied by the greatest number of pupils, which was useful for careers in physiotherapy, pharmacy, medicine, physical education and occupational therapy" (Ibid. p86). It was noted by Addison (1979, p143) that "In the 1970s many girls have taken up scientific careers and several have achieved notable successes." Miss Waterfield of Parktown Girls' was proud that "in spheres of higher education, in commerce and industry, Parktown girls have a name for their ability and for

the good background they have received" (Amoils, 1973, p179).

The following statement made by Mr F.J.K. Simmonds, headmaster of St. Andrew's in 1973, reveals the extent to which perceptions regarding the role of girls had changed in the past three decades:

> [The school wants to] ease the transition to maturity by developing in the individual that measure of confidence and self-assurance which will enable her to cope with the demands of the highly competitive society of our day (Neave, 1977, p214).

The legacy of the neglect of the hard sciences in girls' schools and the society's sexist beliefs was that "In South Africa we have a serious shortage of medical doctors, dentists, engineers, church ministers, policemen, pilots, traffic inspectors and plumbers. These shortages point to an overall and general lack of manpower in our country"

(Potchefstroom Girls' Magazine, 1975, p5). It is noteworthy that each is a traditionally male occupation, yet no effort has been made to alter this bias.

The perception of South Africa in the 1980s is:

> a society where the people with the right qualifications and skills will succeed. Universities and technikons have raised their entrance requirements and as the cost of tertiary education escalates, many pupils will have to look for careers and ways of providing for their future....There is a need to acquire coping skills in a society which considers marriage to be outdated (Ibid. 1989, p6).

Conclusion

Girls are still being drawn largely towards traditional female careers and there is a great deal of confusion regarding gender roles and expectations. South Africa cannot allow itself the luxury of

under-utilising a large part of its potential labour force. This report has focused only on White girls' education but the issues regarding female employment are further aggravated by a multitude of factors when the discussion includes Black women. These problems are not going to disappear by evolution, but require concerted, well-orchestrated attention to eradicate long-held prejudices and to establish a better balance in the work-place.

ENDNOTES

(1)

railways	hotels	hairdresser
banking	factories	beauty culturist
postal services	personal services	matron
commerce	milliner	a few professions (not specified)
steelworks	dressmaker	restaurants
typist	shorthand typist	agriculture
banking	civil service	domestic science
factory work	florist	insurance
municipal service	nursing	accounting

advertising	architecture	arts (fine and commercial)
aviation	dancing	dietetics
geology	health services	dressmaking and design
home management	journalism	law
post office	copyholder	librarianship
receptionist	shop assistant	telephonist

(TED Annual Report, 1953, pp152-4).

SECTION 3

Chapter 7

CONCLUSIONS AND RECOMMENDATIONS

General conclusions

In 1787 Mary Wollstonecraft Godwin wrote "A Vindication of the Rights of Woman" (Sutton and Provenzo, 1983, p137) in which she stated that if equal schooling were to be provided for boys and girls, there would be equal expectations of them. She desired a society in which the qualities of individuals, rather than their sex, would determine what they would do and how they would be treated. My research report has shown how far girls' education has been from that ideal, and to a certain extent still is.

The school is a formal agent of sex role socialisation transmitting predominant social values as regards sex roles, [therefore] differential sex role socialisation for males

and females occurs largely through the processes of formal schooling, whereas the effects thereof are best discerned in unequal educational outcomes such as different patterns of achievement, aspiration and self evaluation as shown by males and females (i).

The issues and problems surrounding girls' education in South Africa have been seriously neglected. Deem concluded that the aim of education should be "the liberation and fulfilment of the individual in a way which overrides not only gender considerations but also class and ethnicity" (Deem, 1980, p180). While socialisation into gender takes place in the family, through the media, peer groups, role models and a myriad of customs and structures, the existing spirit and practices of girls' education in the Transvaal will mould girls to make their priorities love, marriage, husbands, children, jobs and careers, more or less in that order.

The first step must be that the issues of girls' education and employment potential be perceived as problematic and worthy of attention. South Africa lags significantly behind in the the legislation, social structures, analysis and attitudes which Feminist philosophy consider paramount if perfect equality is to be achieved. The extent to which gender is a social product remains unquestioned, and as a result those problems involving "the psychological and cultural definitions of the dimensions masculine and feminine" (Deem, 1980, p1) remain invisible or ascribed to innate qualities. Adrienne Rich (2) said the education system can therefore "indoctrinate women to passivity, self-depreciation and a sense of powerlessness."

Smit (3) maintained that "because the South African government has maintained strong links with orthodox Calvinistic Protestantism, this religious view has also had considerable influence on attitudes towards women." Referring to the Dutch Reformed Church, Hamblin stated that:

> the Church in South Africa has remained steadfast in the traditions of the Reformation....It simply states the Christian order of priorities. There is no inherent objection to a woman working or aspiring to high office, provided she first satisfies the responsibilities of her home (4).

Augustyn (5) has suggested "the existence [within the Dutch Reformed Church] of a more extreme view which gives motherhood, which is unconditionally equated with the female role, an almost holy value." Duckitt (6) concludes that the influence of the generally conservative and authoritarian character of South African society has undeniably resulted in a traditional and inflexible definition of women's role by both White groups in South Africa, which Porter and Albert (7) define as a liberal English-speaking subgroup (predominantly Anglican, Congregational, Methodist and Presbyterian) and a more orthodox Protestant Afrikaans speaking subgroup (Dutch Reformed).

While many of the writers quoted are writing in overseas contexts, their findings and conclusions often have relevance in the local situation. The language of the text-books and official documents examined in this research project has been shown to be sexist, and as language shapes our perceptions, this reveals negative attitudes towards femaleness. Many positive developments within girls' schools have been the result of individual initiative and not of co-ordinated official policy; this detracts from the complete and balanced development of girls. Lemmer (1987, p130) has explained that "education as balanced human development is based upon the development of the child as a person and not on development shaped by the gender expectations held by educators or by society." Schools are setting up conflicting expectations by encouraging girls to achieve academically, but the prevalent ideal of femininity being perpetuated is that of becoming a good wife and mother above dedication to a career.

General recommendations

Educational policy relative to girls should take account of overseas Feminist research, analysis and thought which address profound levels of perception, interaction, values, dignity and a sense of the self. Although it is naive to believe that changes in education alone can radically affect women's opportunities, it is vital that girls receive an equal share of educational resources, where 'equal' does not mean the deceptive 'equivalent'. Legal, social and political structures must address a new image of womanhood consciously so that girls can be educated to a new integration of roles. Feminist philosophy does offer a new image of womanhood, but research is needed to address the question of why there is so much resistance to this new image. Frances Maher (8) claims that a "...public examination of women's lives ...has been virtually buried until recently. [There is a] need to construct a language, a worldview (or views), a research methodology and a pedagogy to discover, examine and describe a set of experiences which up until now, did not officially exist."

Only girls are adversely affected by problems within co-education, although there is a need to review what prejudices are being fostered in boys within the present education system. Whether co-ed. or single-sex schooling is more favourable for girls needs to be the subject of detailed research, as does the problem of what we want to teach girls, because as Maher has explained, "the traditional version of education as the wisdom of generations is especially pernicious for women...because its content has often ignored or demeaned them" (9).

As education is interlinked with all other social structures, each has to be reformulated according to a new perception of women. Feminist psychology has proposed a new concept of masculine and feminine, in which both share in the qualities traditionally associated with only one sex; there ought to be perfect equality in the home, the workplace and in childcare. Words to define gender differences often suggest women are a negative version of men's positive

qualities, (for example while a man is described as assertive, a woman will be described as aggressive), as though masculine qualities were the norm towards which everyone should aspire. All structures must be addressed and discrimination must be the target of legal action and consciousness raising.

Cosin and Hales (1983, pp115-121) identify some of the tasks which must be approached: gaps in knowledge about the education of girls and women must be filled, which also means that data and findings from past studies which contain some information on women or sex differences must be reassessed and interpreted so that common sense assumptions about women and girls' education can be questioned. There is a need to analyse: the processes by which girls in school make subject or occupational decisions, how gender relations are reproduced, adolescent girls' subcultures, the social forces which shape the life chances of women, sources of resistance and change, attitudes within and aspects of the wider social structure (demographic, economic and political) which affect the status of women.

Under each of the following subheadings I will discuss both my conclusions and the recommendations regarding what might be done to ameliorate the problems raised.

Personality traits

The research has shown that many aspects of our education system are based on popular stereotypes of the typical feminine personality, including those dealing with women's intellectual ability - girls are assumed to be more caring than boys, less ambitious, more childlike, dependent and passive. Girls are thought to be more adept at rote learning and repetitive tasks, and less able to do maths. They are rewarded for traditionally nurturing and submissive feminine behaviour, and criticised for more assertive masculine behaviour. The hidden curriculum perpetuates the ideology of femininity as synonomous with wife and mother; the role models presented in schools are of women in subordinate positions while men are dominant.

Studies need to be made of girls' achievement motivation and the multitude of psychological factors which constitute the female personality; the findings of Feminist psychology in this field need to become an integral part of new perceptions and behaviour at all levels. Attention must be given to interpersonal behaviour and expectations, the prejudice that exists against intelligent women, what is expected of each sex and how these expectations are communicated in school rituals and structures. This new attitude should focus on the equal sharing of both character traits and responsibilities.

Curriculum

The curriculum currently offered is biased according to what are considered suitably feminine or masculine subjects: girls are being channelled towards the languages, biology and homecrafts, while boys are encouraged to study physics, chemistry, woodwork and metalwork. Byrne (1978, p29) stated clearly that equal means the same. Educators think it sufficient to offer equivalents - "housecraft versus handicraft,

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physics versus biology, separation for physical education, educating boys for work and girls for domestic life, motherhood and part-time work."

Patrick Orr (10) drew attention to the following reality:

> It appears often to be assumed that differences in choice and performance between boys and girls are societal in origin and therefore largely beyond a school's control. Such a response pays scant attention to the interrelationship which must exist between schools and society: each contributes to the other. Schools have a responsibility to attempt to reduce sex differentiation in the curriculum, so that girls and boys are adequately prepared for the changing and increasingly uncertain circumstances of domestic and working life....Girls' education must reflect the fact that most women will be working for much of their lives, and that

many may be the sole or principal breadwinner for a family.

Lemmer (1987) reviews research done inter alia on differences and similarities between the sexes, the effect of sex role socialisation of girls, and comparative intelligence levels of boys and girls. Research in all aspects dealing with the education of girls needs to be extended, and educational policy should have as its goal to rectify past neglect and negative influences through an extended curriculum not based on sex, by providing equal education facilities in all fields including technological and craft courses, and through compensatory programmes. Bergmann (11) has suggested that:

> courses such as domestic science, home, and childcraft, basic construction and mechanical skills be incorporated into core curricula of schools for students of both sexes. These courses can be made more accessible to pupils of both sexes by re-naming them "survival skills" or "life skills" (12).

Yates (13) however warns of the following very important issue: "Moves [can] smack of the deficit approach, one which blame[s] the victim....Where the criteria of success and the norms of teaching and curriculum are still defined in terms of the already dominant group, that group is likely to remain always one step ahead with the other groups trying to catch up."

Maths, science and technology

Keeping in mind the above proviso, it is still necessary to improve girls' achievement in science, maths and technology, and to investigate the reasons for their underachievement in these areas, because they have become such an important part of basic requirements, although, as Whyte, J. et al (14) warn,

> the recent drive to encourage increased numbers of girls into science and technology reinforces the status and worth of male dominated areas of the curriculum and

> undermines areas in which girls and women have traditionally excelled. Undoubtedly it has been educationally expedient to focus on these subjects.

He suggests a change in curriculum content of the subjects in order to awaken and hold girls' interests, as girls are not intrinsically uninterested in science, just bored by the science they meet in schools (Ibid.).

Whyte, J. (15) has explained why it was necessary for girls to participate effectively in maths, science and technology:

> [The fact that girls tend to opt out of scientific courses and are largely excluded from technical courses means that] girls are ineligible for a wide range of courses in further and higher education and for entry to occupations requiring a scientific or technical base. Female exclusion from

> science and technology ... also means that as citizens their ability to understand and control their environment is limited.

She concluded that girls choose to remain excluded from these fields because they have been conditioned into being intimidated by science and maths and are not interested in them as they are currently presented; they are also led to believe that they are not suitably feminine subjects to excel in (Ibid. p80 *et passim*). Whyte, J. (1985, p80) has suggested that single sex schools were ideal for rectifying the balance by presenting girls with positive role models of women in these fields, and by allowing teachers to understand how girls approach scientific matters. "If the social and human implications of science and technology are stressed, girls will respond positively" (Ibid. p83). Teachers respond to pupils in a way which conveys the message to a boy that maths is important to him while a girl receives the message that her lack of success is due to lack of ability.

Weiner (16), although analysing British maths text books, drew the following conclusions which apply to the South African context:

> 'males and females were seldom treated equally in illustrations and problems in these texts. The number of males identified was greater than the number of females in twenty of the twenty-four texts examined. Males participated in a greater variety of activities and occupations than females. Typically female roles were passive rather than physically active, except...in household activities....All mathematicians identified were male.

Mathematics Teaching (MT) (17) noted that maths book problem examples suggest that men own and control, while women 'look after', serve and consume. Teenage girls pick up the message that being clever and good at maths is a definite social disadvantage, and so they choose not to do it.

MT (19) has proposed the following:

1. Time should be taken to look at the career implications for all students of having a good maths qualification, deliberately including those careers that have been traditionally occupied by women.

2. Teachers have often addressed simpler questions to girls based on the assumption of girls' inability to do maths. The negative effect of this behaviour can be obviated if a deliberate attempt were made to balance questioning by asking direct questions of particular students and adjusting the difficulty to suit ability only.

3. All topics should be re-examined and produced in a way which would attempt to redress the historical gender imbalance of maths presentations.

4. To comment on students' work in a way which helps them to see their achievements as the result of their ability in the first instance, backed up by good efforts.

5. Make sure that all students are made aware of the subjects which tend to reinforce their maths and that pupils are aware of how maths can be utilised.

6. When materials are written, questions which feature girls names and/or traditional interests should be included, but not in a way which reinforces role-stereotyping.

By extension, these recommendations can apply to other subjects and fields; although, alongside this necessary focus on science and maths, there must also be a focus on giving value to 'feminine', non-functional qualities.

Textbooks

Efforts should be made to eradicate sexism of all kinds. This must include parents and teachers, publishers and writers. Weiner (19) identifies a useful check list regarding racism and sexism in books:

1. The illustrations for stereotypes, tokenism,

who is doing what (for example, are males the active doers and females the inactive observers).

2. Story line for the role of women.
3. Look at life-styles.
4. Weigh the relationships between people.
5. Note the heroes and heroines.
6. Consider the effects on a child's self-image.
7. Consider the author's or illustrator's background.
8. Check out the author's perspective.
9. Loaded words.

Another way in which language can affect girls' perceptions are that words used to describe equally well-performing girls and boys are different; words associated with girls are hard-working, careful, neat, well-organised; boys are clever, creative and highly-motivated (20).

Teachers

According to Pratt (21), schools cannot become more "girl friendly" unless teachers work to make them so. At present the two sexes are generally channelled into

separate life routes with distinct styles of socio-personal development geared towards work and careers rigidly demarcated by gender. There are many teachers who believe that psychological differences between the sexes are largely responsible for the different subjects and career choices of boys and girls. As teachers mediate the curriculum to their pupils, the attitude of teachers is critical in determining whether fundamental change will take place. Teachers' self-concept and the role models they present are formative, as are their perceptions of their pupils. According to Winer (22)

> Girls were seen as being more sensible, obedient, hardworking, co-operative, quiet, ... whereas boys are more excitable, talkative, needing more supervision and attention....Boys gain greater interaction with their teachers for approval, disapproval, instruction, being listened to, and teachers prefer boys to be self-sufficient and confident whilst girls

> are expected to be friendly, agreeable and good....In the high school teachers prefer to teach boys rather than girls in the belief that male pupils are more interesting and critical and that their education is more important than that of girls....[However] teachers are unaware that their attitude differs. This may [partly] explain why girls lack so much confidence...to undertake subjects perceived as difficult, e.g. maths and science.

Deem (1980, p178) complained that teacher training does not very often, or indeed in some cases not at all, raise questions about sexism and sexual division in education nor point out the effects of gender on schooling.

Research should be done into teacher attitudes regarding gender, how their training could help highlight prejudices in their practises, how salary structures affect teacher attitudes, whether promotion

policies discriminate against women, particularly in co-ed. schools, and prospects through in-service training. These studies could then address the significance and effect of behaviour, practices and differentiation.

Careful attention must be given to teaching methods, the effects of pupil-teacher interaction, assumptions and prejudices in teachers' behaviour, and active steps taken to actively counteract existing prejudices and to foster new behaviour which will lead to positive self-images for girls. As Deem (23. has pointed out:

> A major potential area of change lies in the training of teachers to be much more aware both of the processes of gender typing and gender categorisation going on in schools, and also in showing new recruits to teaching ways in which they may deliberately try to overcome some of the worst effects of gender typing.

Employment

As I have shown in the research report, existing career education and guidance is often superficial and sexist. Few attempts are made to challenge stereotypes, and the underutilisation of women in the workforce is frequently ignored. Few attempts are made within schools to encourage girls to view a career as equally important to love and marriage. The employment market remains stereotyped, with discrimination in promotion policies and salary structures. Although some of Wessel's research was conducted in the 1970s, many of the underlying assumptions she identified are still relevant today. In spite of the fact that the South African economy cannot function without women, women are concentrated in the traditional 'women's occupations' where financial returns are lowest. This is in spite of the fact that "women graduates who had majored in the physical sciences, medicine and mathematics obtained the best-paying jobs and women with general arts subjects the lowest" (Wessels, 1974, p131). Women crowd into the female professions regardless of the

manpower [sic] needs of the country, and irrespective of ability. Wessels (1974, p52) has explained that "the vocational preferences and choices [of women's occupational] are related to...their being female, their marital status, the stage of family build-up,... the way they have been brought up, the attitudes of their husbands and of society generally, toward women's employment." She had previously stated that "a set of factors hindering women's educational and occupational progress are familial and social attitudes toward the propriety of women working; and there is substantial statistical evidence that the attitudes toward the employment of married women are, for a good part, still negative" (Wessels, 1974, p57).

Chabaud (1970, p20) bemoaned the reality that, "The force of habit and prejudice, the lack of information, innumerable difficulties women encounter in the exercise of some occupations and in the discharge of their domestic duties all limit the opportunities of girls and women."

There is a need to raise girls' depressed expectations through career guidance and information. It is necessary to identify the factors which influence girls' career aspirations in order to overcome the effects of those factors. Wessels (1981, p2) indicated that "Employers...maintain that women have a low level of work attachment and limited career aspirations, that they view their careers as an intermittent venture and that a career is unimportant to them." If this is so, it is time to ask why these attitudes exist in order that one may know how to counteract them. Whether girls' limited choice of subjects and careers is self-imposed or the degree to which it is determined by socialisation must be studied and active steps taken to counteract existing attitudes, both in girls and in society. The majority of women expect interrupted careers owing to the demands of child-care, but as has been suggested, a rethinking of fundamental attitudes towards fatherhood and motherhood, alongside a review of supportive social structures, would permit women greater freedom and men more opportunity to participate in

child-rearing. We need to prepare for changing patterns in training and employment and to address the question of whether a woman's career is as important as that of a man's.

Wessels (1974, p55) has advised the following:

> Further to the implementation of the national education program, an experimental approach is necessary to guide the planning of women's education and their employment; to consider what form the education of really intelligent girls should take; to train those more suitable for technical than higher education by diverting the stream into technical education, which is specialized as university education; to encourage women to seek new vocational training; and lastly, to introduce greater flexibility in women's education.

This research report suggests the need to investigate further the psychological and social implications of existing and changing concepts of gender roles. This applies to male as much as to female roles, because the issues raised in the report affect all human

interaction. The ways in which education influences our gender perception affect our deepest sense of self and hence they have implications for patterns of dominance and subordination, both personally and politically.

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(5) Augustyn, H. (1978) "Die rolvervulling van the getroude vrou" (MA Dissentation) Pretoria, UNISA, in Lemmer (1987, p120).

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(11) Bergmann, B.R. (1986) The Economic Emergence of Women New York, Basic Books, p305. in Lemmer, (1987, p148)

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(14) Whyte, J. et al (1985) "Editors' Introduction".

(15) Whyte, J. "Girl friendly science and the girl friendly school" in Whyte, J. et al (1985, p77).

(16) Weiner, G. "Sex differences in mathematical performance: a review of research and possible action" in Deem, R. (1980, p83).

(17) Smith, J. "Girls into Maths?" in MT (Mathematics Teaching) Dec. 1988, p5.

(18) Ibid. pp5-6.

(19) Weiner, G. op.cit. p84.

(20) Love, E. "Curriculum Issues" in MT (June, 1987, p44)

(21) Pratt, J. "The attitude of teachers" in Whyte, J. et al (1985, p24).

(22) Weiner, G. op.cit. p82.

(23) Deem, R. "Women, school and work: some conclusions". In Deem, R. (1980, p177).

CURRICULUM.

Form I.

This form follows the syllabus laid down for Standard VI. The following subjects are taken: English, Afrikaans, Arithmetic, History, Geography, Science and Hygiene.

Forms II and III.

Forms II and III follow the syllabuses of the Transvaal Junior Certificate Examination. The following five subjects are compulsory: English, Afrikaans, Mathematics, General Science and History. Six subjects must be taken. The sixth subject taken at this school is usually a third language, Latin or French. If a third language is not taken, two minor subjects must be taken. Although a considerable choice is allowed, owing to the difficulty of arranging optional subjects for small groups, the only two minor subjects that can be taken are Geography and Art.

In addition to the above-mentioned examination subjects Forms I and II take Class Singing, Needlework and Art, and Form III take Class Singing and Art.

Forms IV and V.

The following are the possible courses for the Transvaal Secondary School Certificate Examination. These courses are accepted as equivalent to the certificate of the Joint Board Matriculation Examination, which serves as an entrance to the University.

Six subjects must be taken.

COURSE A (normal course).

1. English.
2. Afrikaans.
3. Latin or French.
4. Mathematics.
5. Biology.
6. History.

COURSE B (with only two languages).

1. English.
2. Afrikaans.
3. Mathematics.
4. Biology.
5. and 6. Two of the following: History, Geography, Art, Music, ~~Book-keeping~~.

COURSE C.

1. English.
2. Afrikaans.
3. Latin or French.
4. Mathematics or Biology.
5. and 6. As in Course B.

NOTES.—When a candidate offers only two languages, both Mathematics and Biology must be taken.

PERTAINING TO THE INDIVIDUAL

The acquisition of knowledge and the development of understanding of

1.1 The function of the teenager as an individual in the family and environment, and as a consumer in respect of clothing, nutrition and housing

1.2 the selection, preparation, serving and storing of food for meals with basic food groups as a point of departure to promote good health

1.3 the nutritional needs of the pupil, with basic food groups as a point of departure

1.4 the judicious selection, care and maintenance of clothes and household textile fabrics and materials

1.5 the basic construction techniques for the construction and maintenance of clothes and household textile items

1.6 the utilisation and planning of living-spaces and knowledge of the techniques for the care of these

1.7 the rights and responsibilities of the consumer

1.8 the ways of finance transactions and application of budget planning

1.9 the homemaking and vocational role

1.10 responsible parenthood

1.11 the norms for building a sound basis for frienships

1.12 the basic management concepts and

1.13 the elements and principles of art and the application of these in the selection of textiles and clothing, and interior planning

1.14 the acquisition of psychomotor and perceptual skills

1.15 The development of creativity by means of learning experiences

GENERAL GOALS FOR TEACHING HOME ECONOMICS IN STDS 8, 9 AND 10 HG

PERTAINING TO THE ENVIRONMENT

- Introduction to institutions in society
- Development of a responsible attitude towards community involvement
- Bridging cultural gaps
- Development of a responsibility towards use of resources
- Development of an appreciation of own traditions
- Development of an understanding of the life styles of various cultural groups
- Development of an awareness of the demands of vocational and homemaking roles

PERTAINING TO THE FAMILY

- The development of awareness, knowledge and skill to enable the pupil to function within the family in order to satisfy human needs
- The development of the knowledge and ability which will enable the pupil to manage a household

PERTAINING TO THE INDIVIDUAL

The development

- of the ability which will enable the pupil to identify,
- of the ability which will enable the pupil to be a judicious consumer
- of the ability of the pupil to handle money matters and the acquisition of knowledge of consumerism
- by the pupil of own potential
- of positive values and attitudes which will enable the pupil to function within the environment

AIMS FOR TEACHING HOME ECONOMICS IN STDS 8, 9 AND 10 HG

PERTAINING TO THE ENVIRONMENT

The acquisition of knowledge and comprehension of

E 1 the elementary socio-cultural aspects of food and clothing

E 2 types of housing

E 3 the available social resources at the disposal of the family in solving problems

PERTAINING TO THE FAMILY

The acquisition of knowledge or the development of the ability to apply knowledge in respect of

F 1 the principles and techniques pertaining to food selection, preparation and serving for optimal family nutrition

F 2 the principles for the purchase of food, clothes and textiles and interior accessories with regard to labelling, price and quality

F 3 the selection and maintenance of a dwelling and of clothing

F 4 the clothing and housing needs of the family

F 5 the elements and principles of art in the selection of clothes and interior requirements

F 6 the home management principles

F 7 the principles pertaining to work that facilitate the execution of household tasks

F 8 an appreciation for home making

F 9 the principles of budgeting in the family situation

F 10 the effective cost of various ways of financing purchases

F 11 the factors influencing the behaviour of the consumer

F 12 the functioning of the family as a unit and within the environment

PERTAINING TO THE INDIVIDUAL

The use of learning experiences for

I 1 self-realisation

I 2 the development of a problem solving approach

I 3 the development of creativity

I 4 the development of psychomotor and perceptual skills

TRANSVAAL EDUCATION DEPARTMENT

SYLLABUS FOR GENERAL SCIENCE (PHYSICAL SCIENCE COMPONENT) FOR STD 5, 6 AND 7

INTRODUCTION

1. GENERAL AIMS

The aims in the teaching of General Science, like those in all science subjects at school level, are that the pupil should

1.1 acquire knowledge in respect of the world he lives in;
1.2 acquire the appropriate vocabulary and terminology relating to this knowledge and its uses;
1.3 develop the ability to

1.3.1 isolate and analyse problem situations,
1.3.2 observe objectively,
1.3.3 solve problems by applying a scientific procedure and method of reasoning;

1.4 become aware of science as an aspect of culture and of the role and implications of natural science in man's way of life;
1.5 become aware of the majesty of Creation through the acquaintance with the wonder of and order in nature and in this way develop a sense of awe and reverence for the Creator.

2. SPECIFIC AIMS

The general aims can be attained by pursuing the following specific aims:

2.1 Aims pertaining to knowledge (that is, the ability to recall):

2.1.1 Knowledge of certain essential facts and concepts in respect of the physical and biological environment
2.1.2 Knowledge of the use of appropriate instruments, apparatus and material required for investigations
2.1.3 An adequate scientific vocabulary and the ability to communicate verbally and in writing by means of this vocabulary
2.1.4 The understanding of certain basic concepts that these concepts can be applied in other familiar situations and be further extended by continued study
2.1.5 The ability to select appropriate knowledge and principles and to apply these in new but related situations
2.1.6 The introduction to the development of the ability to arrange and analyse data and to make meaningful deductions from it

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2.2 Attitudinal aims

2.2.1 To develop interest in and to obtain satisfaction from the study of natural science
2.2.2 To make pupils aware of the mutual relationship between the main components of natural science
2.2.3 To make pupils aware of the role of natural science in everyday life
2.2.4 To grasp the concept of equilibrium in nature and the particular role played by plants and animals in its maintenance
2.2.5 Exposure to and emphasis on the wonder of and order in nature
2.2.6 Objectivity in observation and in the evaluation of the validity of data and deductions

2.3 Aims with respect to

2.3.1 The acquisition of a number of necessary skills and techniques
2.3.2 The acquisition of standard experimental techniques which require more than one type of basic skill

3. EVALUATION

3.1 An equal number of marks should be assigned to each of the components, Physical Science and Biology.
3.2 Different evaluation techniques should be applied regularly on a differentiated basis.

4. REMARKS

4.1 Correct and appropriate SI units and symbols must be used.

4.2 Teachers must at all times, but especially during the practical sessions, take the necessary safety precautions. Protective clothing should be worn. This warning applies especially with respect to the storage and handling of chemicals, as well as to all types of experiments performed during which poisonous gases or vapours may be released. Examples of these are the heating of mercuric(II)oxide and the use of tetrachloromethane.

(Refer to study guide No 5 : Safety measures in the laboratories.)

4.3 Practical work is an integral part of the teaching of the subject and ample opportunities must be created for the pupils to do experiments themselves.

Practical work by pupils should be continuously evaluated and the marks allocated should be incorporated in the pupil's year marks.

PHYSICAL SCIENCE

SUBJECT POLICY

1. ATTITUDE TO SUBJECT

1.1 The teaching of Science should be visualised as a structure consisting of an orderly framework of laws and concepts, created by the tools of Mathematics on which useful facts are co-ordinated. The framework represents the scientific aspects of the subject and it serves to unite technologically useful facts.

1.2 There are two main facets of the study of science, namely as an intellectual pursuit devoted to discovering order and pattern in the physical world and as a means of providing mankind with information which is immediately useful.

2. AIMS OF THE SUBJECT

2.1 To develop in pupils the desirable scientific attitudes, such as interest in natural phenomenon, desire for knowledge, critical thinking etc. so that pupils feel a urge for more scientific knowledge and explanations.

2.2 It should lead pupils to understand the difference between seeing and observing.

2.3 It should guide pupils to discover the laws of nature and to formulate concepts that lead to the explanation of these laws, by their own observations.

2.4 It should train pupils in logical thinking in order that they may use and apply scientific principles.

2.5 It should introduce pupils to the applications of Physical Science in industry and in everyday life.

2.6 It should help pupils to obtain perspective in life, for example to develop a reverence for the Creator and an appreciation of the wonders of the creation.

2.7 It should develop in pupils the necessary skills, techniques and methods of science, such as handling of certain apparatus, the techniques of measuring, and of observation etc. Thus the study of Physical Science should promote an independent attitude with respect to the tackling and solution of problems in general.

3. GENERAL ORGANIZATION AND METHOD

3.1 SCHEMES OF WORK

A good scheme of work can be seen as an interpretation of the subject content contained in the syllabus.
Each teacher must have a scheme of work for each standard and course taught.
The scheme co-ordinates the work of various classes in the same standard.

Typing: Std Grade Syllabus for Stds 8, 9 and 10 (TED 1990)

General aims

Typing must be vocationally oriented in nature.

Particular aims

1. To develop the processes of logical thought.
2. To encourage a systematic and judicious approach to assignments and problems.
3. To contribute to the cultural education of pupils by developing the typical character traits conducive to typing as a subject and as a career, for instance self-discipline, concentration, precision, loyalty, etc.
4. To develop a pupil's insight into and understanding of typing and its relationship to, for instance, languages, accountancy, business economics, shorthand and other subjects.
5. To stress the important contribution that each typist should and must make to the smooth operation of the office.

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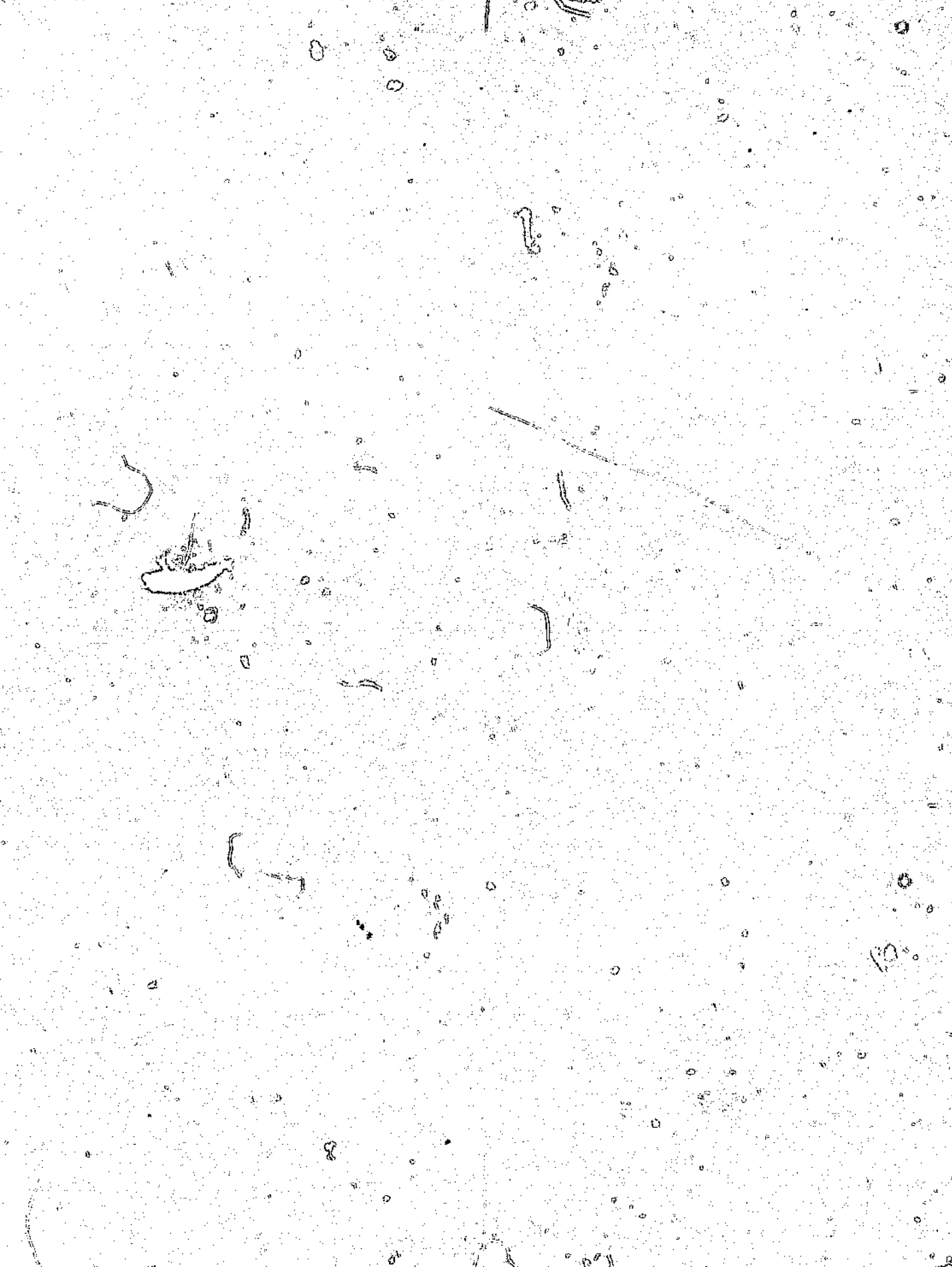
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