

**THE DEVELOPMENT AND IMPLEMENTATION OF RECORDS OF STUDENT
ACHIEVEMENT IN TECHNIKON EDUCATION**

By

Valerie Ann Potterton

**Thesis presented in fulfilment of the requirements
for the Master's Diploma in Technology: Post School Education
in the School of Teacher Education at the Cape Technikon**

Supervisor: Dr Phillip G. Parsons

August 1994

Declaration

I the undersigned hereby declare that the work contained in this thesis is my own original work and has not previously in its entirety or in part been submitted at any tertiary educational institution for a diploma or degree. I do further declare that the opinions contained herein are my own and not necessarily those of the Technikon.

Signature

Date 28th October 1996

ABSTRACT

This pilot project to develop and implement a system for introducing records of student achievement in technikon education was based on developments in the United Kingdom over two decades ago. From a small beginning in a few schools, the movement, later known as 'profiling' flourished to the point where in 1984, it was officially adopted as part of school policy.

Most teaching and learning in schools culminates in some form of assessment and evaluation. However, in many parts of the world, it has often been the custom to eliminate/exclude all but the very best pupils from any effective or beneficial forms of assessment, thereby precluding them from any practical means of evaluation. The situation was no different in the United Kingdom where up to the 1960's the majority of pupils left school with little more than attendance records. It was this unfair and biased situation that gave rise to the principal leverage for introducing profiling to the school system.

Although originating as a reaction against this prejudice, profiling in the United Kingdom has grown to encompass reporting on various attainments and activities, including academic achievement, of all school-going pupils as well as students at a number of post-compulsory education institutions. One of the many reasons given for this expansion has been the requirements of job-markets. It has long been known that industry has not always been entirely happy with the end-product from our established education system. There are

varied arguments for this, and in exploring some of these, one fairly universal problem has emerged, namely industry's apparent inability to **effectively use** the results of assessment as it has traditionally been reported by most schools and other educational institutions. A frequent criticism revolved round the 'applicability' of the reported results, with them being described as indefinite, sometimes even meaningless with reference to parameters used by industry.

Arguments with respect to firstly the influence of assessment and secondly characteristics and shortcomings of traditional assessment reporting of the results of the educational process were analyzed. The results were used to provide a framework for the possible introduction of a record of achievement scheme into the Department of Biological Sciences at the Cape Technikon. It was suggested that industry could use the kind of information that could be provided by using records of achievement.

Establishing the desirability of records of achievement in the horticulture discipline was accomplished by means of student and potential employer surveys. These were carried out towards the end of 1991 and revealed that there was indeed a genuine and practical need for **developing a different method of reporting** the results of assessment. Of the 24 final semester students questioned, 23 expressed a desire for the introduction of records of achievement. Likewise 88 of the 93 potential employers canvassed felt that traditional assessment reporting methods were inadequate and 92 of the 93 agreed that a record of achievement could be of assistance to them.

A number of the systems of profiling and records of achievement that were in use in the United Kingdom, up to 1991 were evaluated. A system was then designed which was considered suitable for implementation with third semester horticulture students in January 1992. A further proposal made was that the planned scheme would be known as **Records of Student Achievement** with the acronym of **ROSA**.

Although most schemes evaluated in the United Kingdom included personal information in the students' record it was decided that, for the purposes of the proposed pilot project, information of this nature would be excluded. The proposed record was therefore to be restricted to reporting only the results of existing assessment exercises. Finally, it was planned that the different method of reporting the results of an assessment would be based on two central factors. These were, previously defined elements within subject-specific topics which would have been related to one or more of three specified levels of achievement. The intention was to use the results attained by each student in each element, at each level of achievement to produce the ROSA. The final report would then, by means of a histogram, show the student's own achievement against the class average at each of the three levels. A summative ROSA would be given to each student at the end of their course. This document would be the property of the student who would retain the right to decide whether or not to show it to prospective employers and others.

Subsequently a number of modifications were made to the original proposals. In addition changes to the author's teaching method were necessitated as a consequence of reporting the students' results at the three different levels of achievement. The use of this method appeared to focus on learning quality and as a consequence to this (and the changes in content and teaching method), perceptible shifts in students' attitude were observed together with an improvement in the quality of student learning. It was considered possible that making explicit distinctions between levels of achievement within the existing forms of assessment could have had the effect of encouraging deeper levels of learning.

The practical considerations of implementing ROSA for both the teaching staff and the administration were taken into consideration especially with regard to very probable implications for changing the conventional approach to assessment itself. Similarly attention was given to some of the more critical requirements of implementation, such as the excessive amount of time that was required for marking the assessments.

Finally, various recommendations are made with regard to the expansion of the application of ROSA to other departments and schools in the technikon. One of the results of the introduction of ROSA was an emphasis on the need to re-evaluate current assessment practices as well as the identification of areas for future developments.

OPSOMMING

Hierdie loodsprojek om 'n stelsel vir die invoer van studenteprestasierekords in technikononderwys te ontwikkel en te implementeer, berus op ontwikkelings in die Verenigde Koninkryk meer as twintig jaar gelede. Uit 'n beskeie ontstaan in 'n paar skole het die beweging, wat later as 'profilering' bekend geraak het, opgebloeit totdat dit in 1984 amptelik as deel van skoolbeleid aanvaar is.

Die meeste onderrig en leer in skole loop op die een of ander vorm van evaluering uit. In baie dele van die wêreld is dit egter dikwels die gebruik om almal behalwe die allerbeste leerlinge by enige doeltreffende of voordelige evalueringevorms uit te skakel, waardeur hulle van enige praktiese evalueringmiddel uitgesluit word. Die situasie het geensins verskil in die Verenigde Koninkryk waar die meerderheid van die leerlinge tot die sestigerjare die skool verlaat het met weinig meer as bywoningsrekords. Dit was hierdie onbillike en bevooroordeelde situasie wat tot die vernaamste druk vir die instelling van profilering in die skoolstelsel aanleiding gegee het.

Hoewel profilering as reaksie teen vooroordeel ontstaan het, het dit in die Verenigde Koninkryk gedy om ook verslaggewing oor verskillende prestasies en aktiwiteite, met inbegrip van akademiese prestasie, van alle skoolgaande leerlinge asook studente aan 'n aantal naskoolplig-onderwysinstansies in te sluit. Een van verskeie redes wat hiervoor aangevoer word, is die vereistes

van indiensnemingsmarkte. Dit is lank reeds bekend dat die bedryf nie altyd volkome gelukkig was met die eindproduk van die gevestigde onderwysstelsel nie. Hiervoor bestaan daar uiteenlopende argumente en met die verkenning van party, het 'n betreklik universele probleem na vore getree, naamlik die bedryf se skynbare onvermoë om doeltreffend gebruik te maak van die uitslae van evaluering soos tradisioneel deur die meeste skole en ander opvoedkundige instansies in verslae vervat is.

Argumente oor, ten eerste, die invloed van evaluering en, ten tweede, kenmerke en gebreke van tradisionele evalueringsverslae oor die gevolge van die opvoedkundige proses is ontleed. Die gevolge is as 'n raamwerk vir die moontlike instelling van 'n prestasierekordskema in die Biologiese Wetenskappe aan die Kaapse Technikon gebruik. Daar is aan die hand gedoen dat die bedryf die soort inligting kan benut wat verskaf kan word deur van die prestasierekords gebruik te maak.

Die wenslikheid van prestasierekords in die tuinboubedryf is bepaal deur middel van opnames onder studente en moontlike werkgewers. Die opnames is uitgevoer teen die einde van 1991 en die uitslae het getoon dat daar inderdaad 'n werklike en praktiese behoefte bestaan het aan die ontwikkeling van 'n ander verslagmetode vir die evalueringresultate. Van die 24 finale-semesterstudente wat ondervra is, het 23 hulle ten gunste van prestasierekords uitgespreek. Insgelyks het 88 van die 93 moontlike werkgewers wat genader is gemeen dat die tradisionele evalueringsverslagmetodes

ontoereikend is en 92 van die 93 was dit eens dat 'n prestasierekord vir hulle van nut kan mees.

'n Aantal van die profileringsstelsels en prestasierekords wat tot 1991 in die Verenigde Koninkryk in gebruik was, is geëvalueer. Daarop is 'n stelsel ontwerp wat as geskik beskou is om ingestel te word vir Tuinboustudente in hulle derde semester in Januarie 1992. 'n Verdere voorstel is gedoen dat die beplande skema as ROSA ("Records of Student Achievement") bekend sal staan.

Hoewel die meeste skemas in die Verenigde Koninkryk wat geëvalueer is persoonlike inligting oor die studenterekords ingesluit het, is daar besluit dat vir die doeleindes van die voorgestelde loodsprojek inligting van hierdie aard uitgesluit sal word. Die beoogde rekord is dus beperk tot 'n verslag van slegs die resultate van bestaande evalueringsoefeninge. Daar is ten slotte beplan dat hierdie ander verslagmetode vir evalueringuitslae op twee sentrale faktore sal berus. Die faktore is voorheen omskrewe elemente binne vakspesifieke onderwerpe wat met een of meer van die drie bepaalde prestasievlakke verband hou. Die bedoeling is om die resultate wat elke student in elke element behaal het op elke prestasievlak te gebruik om die ROSA te bepaal. Die finale verslag toon dan deur middel van 'n histogram die student se eie prestasie teenoor die klasgemiddelde op elkeen van die drie vlakke. 'n Summatiewe ROSA word aan die einde van die kursus aan elke student gegee. Hierdie verslag is die eiendom van die student wat die reg behou om

self te besluit om dit aan moontlike werkgewers te toon al dan nie.

Daarna is 'n aantal wysigings aan die oorspronklike voorstelle aangebring. Boonop is wysigings aan die outeur se onderrigmetodiek genoodsaak as gevolg van die verslag oor studente-uitslae op die drie verskillende prestasievlakke. Die gebruik van hierdie metode was skynbaar ingestel op leergehalte en as gevolg daarvan (en die veranderings aan die inhoud en onderrigmetodiek) is waarneembare ingesteldheidsveranderings asook 'n verbetering in die gehalte van studenteleer waargeneem. Dit is as moontlik beskou dat die uitdruklike onderskeid wat tussen prestasievlakke binne die bestaande evalueringswyse getref is daartoe kon gelei het dat dit dieper leervlakke kon aanmoedig.

Die praktiese oorwegings van die implementering van ROSA vir sowel die onderrigpersoneel as die administrasie is in ag geneem veral met betrekking tot die heel waarskynlike implikasies vir die verandering van die konvensionele benadering tot evaluering self. Eweneens is aandag geskenk aan party van die meer kritiese implementeringsvereistes soos die buitensporige hoeveelheid tyd wat vir die nasien van werkopdragte nodig is.

Ten slotte, verskillende aanbevelings word gedoen rakende die uitbreiding van die toepassing van ROSA tot ander departemente en skole in die teknikon. Een van die resultate van die instelling van ROSA is die klem op die behoefte aan die herbesinning oor die huidige evalueringpraktyke asook die identi-

fisering van gebiede vir verdere ontwikkeling.

ACKNOWLEDGEMENTS

I would like to express my sincere gratitude towards my supervisor, Dr Phillip G. Parsons, for his unstinting guidance and support throughout the work on this thesis.

My appreciation also to:

Those Horticulture, Landscape Technology and Parks and Recreation Management students of the Cape Technikon who so willingly consented to be an integral part of this pilot project during their third semester of study.

My colleagues at the Cape Technikon who assisted in various ways. In particular the following persons: Dr C.J. Loedolff, Dr P.J. Laubscher, Mev Wilma Swanich and all members of staff in the Department of Biological Sciences, as well as all members of staff in the Cape Technikon Library.

The Centre for Scientific Development of the Human Sciences Research Council for their financial assistance. Opinions expressed and conclusions arrived at are those of the author and are not necessarily to be attributed to the Centre for Scientific Development.

My deepest appreciation to Chris for his cheerful acceptance of the day-to-day chores that became his over the years but mostly for his love and understanding, and staunch belief in his mother.

CONTENTS

	PAGE
ABSTRACT	ii
OPSOMMING	vi
ACKNOWLEDGEMENTS	xi
LIST OF TABLES	xvii
CHAPTER ONE: ASSESSMENT AND THE EDUCATIONAL PROCESS	
1.1 INTRODUCTION	1
1.2 THE INFLUENCE OF ASSESSMENT	3
1.2.1 ASSESSMENT FOR SELECTION	5
1.2.2 ASSESSMENT FOR LEARNER MOTIVATION	5
1.2.3 ASSESSMENT FOR FEEDBACK AND FORECASTING	6
1.2.4 ASSESSMENT FOR INFLUENCING TEACHING METHODS	8
1.3 CHARACTERISTICS AND SHORTCOMINGS OF TRADITIONAL ASSESSMENT REPORTING	9
1.3.1 FAILURE OF ASSESSMENT TO REVEAL THE EXTENT OF LEARNING	9
1.3.2 NEGATIVE EFFECTS OF TRADITIONAL REPORTING METHODS	10
1.3.2.1 OBJECTIVITY & RELEVANCE OF THE ASSESSMENT	11
1.3.2.2 PROCESSING OF ASSESSMENT DATA	11
1.3.2.3 APPARENT ENCOURAGEMENT OF FRAGMENTED LEARNING	13
1.3.2.4 DEGREE OF RELIABILITY AND VALIDITY OF THE FINAL MARK	15
1.3.2.5 INTERPRETATION OF THE FINAL MARK	18
1.3.2.6 PREDICTIVE IMPLICATIONS OF THE FINAL MARK	19
1.3.3 FAILURE OF TRADITIONAL REPORTING METHOD TO MEET EMPLOYERS' REQUIREMENTS	20

1.4	PRESSURES TO RETAIN THE PRESENT ASSESSMENT REPORTING SYSTEM	23
1.4.1	GENERAL OPPOSITION TO CHANGE	23
1.4.2	EDUCATIONAL LEGITIMACY AND ACCOUNTABILITY	24
1.4.3	ABSENCE OF A SUPERIOR SYSTEM	24
1.5	PRESSURES FOR CHANGE TO THE PRESENT ASSESSMENT REPORTING SYSTEM	25
1.5.1	PRESSURES FROM WITHIN THE SYSTEM	25
1.5.2	PRESSURES FROM OUTSIDE THE SYSTEM	26
1.5.3	DEFICIENCIES AND CREDIBILITY OF THE SYSTEM	26

CHAPTER TWO: ALTERNATIVE ASSESSMENT REPORTING PRACTICES

2.1	INTRODUCTION	28
2.2	CLARIFICATION OF TERMINOLOGY	29
2.3	EARLY ATTEMPTS AT RECORDS OF ACHIEVEMENT IN THE UNITED KINGDOM	31
2.4	OTHER INITIATIVES WITH REGARD TO REPORTING ON ASSESSMENT	42
2.5	A COMPARISON OF THE SIMILARITIES AND DIFFERENCES IN THE VARIOUS SCHEMES OF REPORTING ASSESSMENT	46
2.5.1	VARIABILITY IN DESIGNS OF RECORDS OF ACHIEVEMENT	46
2.5.2	COMPARISON OF CURRENT PROFILES, ADVANTAGES AND DISADVANTAGES	51
2.6	AN EVALUATION OF SCHEMES OF PROFILING AND RECORDS OF ACHIEVEMENT IN THE UNITED KINGDOM	89
2.7	DEVELOPMENTS OF RECORDS OF ACHIEVEMENT AS APPLIED TO HIGHER EDUCATION	104
2.8	SUMMARY	106

CHAPTER THREE: PROPOSED RECORDS OF STUDENT ACHIEVEMENT

3.1	INTRODUCTION	109
3.2	ESTABLISHING THE ACCEPTABILITY OF ROSA	111
3.2.1	SURVEY OF STUDENTS	112
3.2.2	SURVEY OF PROSPECTIVE EMPLOYERS	113
3.2.3	PERCEIVED BENEFITS FOR TEACHING STAFF	114
3.2.4	PROPOSED BENEFITS FROM THE IMPLEMENTATION OF ROSA	117
3.3	DESIGN OF ROSA	119
3.3.1	PROPOSED CONTENT INFORMATION OF ROSA	123
3.3.2	PROPOSED FORMAT/STYLE OF ROSA	125
3.3.3	PROPOSED PRESENTATION OF ROSA	129
3.4	PROPOSED IMPLEMENTATION	131
3.4.1	LEVELS OF ACHIEVEMENT	135
3.4.2	DESCRIPTION OF ELEMENTS	141
3.4.3	INTRODUCTION OF ROSA	144
3.5	VALIDATING PROPOSALS	148
3.6	SUMMARY OF PROPOSED ROSA	152

CHAPTER FOUR: IMPLEMENTATION OF PILOT RECORDS OF STUDENT ACHIEVEMENT

4.1	INTRODUCTION	154
4.2	STUDENT SURVEY	155
4.2.1	ANALYSIS OF THE STUDENT QUESTIONNAIRE	157
4.3	EMPLOYER SURVEY	171
4.3.1	ANALYSIS OF THE EMPLOYER QUESTIONNAIRE	172
4.4	PRACTICAL IMPLEMENTATION OF ROSA	179
4.4.1	ANALYSIS OF ASSESSMENT INSTRUMENTS	180
4.4.2	MODIFICATIONS TO THE PROPOSED SYSTEM	183
4.4.3	SYSTEM OF RECORD KEEPING	187
4.5	DISCUSSION OF RESULTS OBTAINED	189
4.6	VALIDATION OF PILOT SYSTEM	199

4.7	SUMMARY	199
-----	---------	-----

**CHAPTER FIVE: PRACTICAL IMPLICATIONS OF IMPLEMENTATION OF
PILOT RECORDS OF STUDENT ACHIEVEMENT**

5.1	INTRODUCTION	201
5.2	IMPLICATIONS FOR TEACHING	204
5.3	IMPLICATIONS FOR ASSESSMENT	210
5.3.1	CHANGING THE APPROACH TO ASSESSMENT	214
5.3.2	TIME REQUIRED FOR MARKING	219
5.4	IMPLICATIONS FOR ADMINISTRATION	222
5.5	CONCLUSIONS	225

**CHAPTER SIX: RECOMMENDATIONS FOR ROSA AT THE CAPE
TECHNIKON**

6.1	INTRODUCTION	227
6.2	INTRODUCING CHANGE TO THE TECHNIKON SYSTEM	229
6.3	STAFF DEVELOPMENT THROUGH ACTION RESEARCH	233
6.4	NEED TO RE-EVALUATE CURRENT ASSESSMENT PRACTICES	237
6.5	AREAS FOR FUTURE RESEARCH	241
6.6	SUMMARY	243

BIBLIOGRAPHY		247
---------------------	--	------------

APPENDIX A	Text of Preamble given to Horticulture Students	253
APPENDIX B	Student Questionnaire	255
APPENDIX C	Employer Questionnaire	258
APPENDIX D	Covering Letter to Prospective Employers	259
APPENDIX E	Plant Protection A Test I	260
APPENDIX F	Plant Protection A Test II	268
APPENDIX G	Plant Protection A Test III	272
APPENDIX H	Plant Protection A Examination Paper	276

APPENDIX I	List of Employers' Comments and Suggestions for Records of Achievement	288
APPENDIX J	List of Qualities proposed by Employers	291
APPENDIX K	Manual Spreadsheet of Raw Marks	292
APPENDIX L	ROSA - Students 001 - 031	293
APPENDIX M	1984 DES Policy Statement on Records of Achievement	301

LIST OF TABLES

	PAGE
CHAPTER TWO	
TABLE 2.1	CGLI PROGRESS PROFILE 64
TABLE 2.2	SCRE PROFILE, 'PUPILS IN PROFILE' 70
TABLE 2.3	COMPARATIVE AIMS AND OBJECTIVES OF SCRE AND BIPM 72
TABLE 2.4	NWCTA PROFILE ASSESSMENT SCHEME - ASSESSMENT SHEET 80
TABLE 2.5	STUDENT PROFILE ASSESSMENT 82
TABLE 2.6	COMPARISON OF SCHEMES OF PROFILING AND RECORDS OF ACHIEVEMENT IN THE UNITED KINGDOM 94
CHAPTER THREE	
TABLE 3.1	DEFINING ELEMENTS FROM A COURSE SYLLABUS 142
CHAPTER FOUR	
TABLE 4.1	SUMMARY OF AGE AND SEX DISTRIBUTION OF RESPONDENTS 157
TABLE 4.2	ANALYSIS OF STUDENTS' RESPONSES TO QUESTIONS 8 TO 16 OF THE STUDENT QUESTIONNAIRE 159
TABLE 4.3	ANALYSIS OF RESPONSES TO EMPLOYER SURVEY 172
TABLE 4.4	RESULTS OF QUALITATIVE CHANGES MADE TO SOME ORIGINAL ASSESSMENT QUESTIONS 181
TABLE 4.5	ALLOCATION OF LEVELS OF ACHIEVEMENT IN ASSESSMENT PROGRAMME 183
TABLE 4.6	SUMMATIVE RECORD OF STUDENT ACHIEVEMENT 189
TABLE 4.7	SUMMARY OF RECORDS OF STUDENT ACHIEVEMENT RESULTS 191
TABLE 4.8	COMPARISON OF STUDENTS WITH EQUIVALENT LEVEL ONE SCORES 192
CHAPTER FIVE	
TABLE 5.1	ASSESSMENT PLANNING GRID: PART OF PLANT PROTECTION A COURSE 213

CHAPTER ONE

ASSESSMENT AND THE EDUCATIONAL PROCESS

1.1 INTRODUCTION

Records of student achievement (also known as 'profiles') were initiated over twenty years ago as part of an attempt to solve some of the problems seen in the traditional but inadequate system of reporting on student assessment. It was also anticipated that these records or profiles may simultaneously reduce some of the reported negative effects and limitations of the established examining and certification systems.

As a result, examination and assessment reform became then, and still is in the 1990s, one of the main subjects under discussion. However to change for the sake of change is irresponsible and foolhardy, not to mention unprecedented in the field of education. Furthermore, "some authors (for example, Murphy, 1984; Stevenson, 1983) have warned that criticisms of one set of practices do not justify the implementation of another set without adequate research and evaluation" (Baumgart, in Broadfoot, 1986 p46). Hence the extensive research that has been conducted into the feasibility and acceptability of records of achievement and profiles as a possible means of reporting on an individual student's achievement (see, for example Broadfoot,

1986, 1987; Crooks, 1988; Garforth and Macintosh, 1986; Harrison, 1983; Klug, 1976; and Stansbury, 1978).

The aim of the pilot project, based on much of the considerable research mentioned above, was to develop and use a different method of reporting the results of assessment thereby improving the current system.

With this aim in mind the author formulated the following objectives:

- * to investigate an alternative system for reporting the results of assessment as used in other countries in the world
- * to develop a unique reporting method that could be used or easily adapted for use for all students at the Cape Technikon
- * to ensure that the system and records of student achievement would be both relevant and useful to prospective employers
- * to make certain that the system could be implemented within the current programme in the Department of Biological Sciences
- * to introduce and implement the concept of records of student achievement in such a way as to be acceptable to the students
- * to improve teaching methods and hopefully encourage a deeper level of student learning by drawing the student's attention to his specific attainment at three different levels of skills.

1.2 THE INFLUENCE OF ASSESSMENT

Assessment of student achievement has become rather a delicate issue in that it is a combination of a number of distinct but related roles within the educational process. "It performs different functions and needs to be regarded in light of the educational functions it is intended to perform" (Eisner, 1993 p224). For example one of the roles of assessment is as a 'screen' whereby in "conventional education, the purpose of assessment in general, and of examinations in particular, is to select" (Pastoll, 1992 p1). Gronlund agrees with this and suggests that one can view evaluation as "a process of obtaining information upon which to base educational decisions" (Gronlund, 1976 p24). There are, however, many modes of assessment that may be performed in order to achieve selection and placement and each should, according to Broadfoot, be "designed to allow for the best judgement of a student's performance in a given circumstance" (Broadfoot, 1986 p234).

Van Rensburg and co-authors, writing about secondary education, subscribes to the above by defining evaluating categories that can be variously "implemented with the view to assess the value (authenticity) of pedagogic actions. The assessment flows forth from and on the strength of pedagogic criteria" (van Rensburg *et al*, 1981 p270). The same belief would be true of tertiary education, as supported by Bloom who defines evaluation as, "the making of judgements about the value, for some purpose, of ideas, works, solutions, methods, etc. It involves the use of criteria as well as standards for

appraising the extent to which particulars are accurate, effective, economical or satisfying" (Bloom, in Curzon, 1985 p260). Rowntree distinctly defines assessment as, "an attempt to get to know about the student and find out the nature and quality of his learning - his strengths and weaknesses, or his interests and aversions, or his style of learning" (Rowntree, 1981 p178).

As well as definitions, there are a variable number of reasons that have, over the years been put forward for assessment. Crooks defines eight different reasons for assessment (1988 p5) and consequently eight different benefits that could be obtained by transcribing the results of assessment into records of achievement. According to Rowntree, Klug has identified thirty-two reasons for formal assessment (Rowntree, 1981 p178), whereas Rowntree himself focuses on what he regards are the six main reasons for assessment:

- * To aid in selection.
- * To maintain standards.
- * To motivate students.
- * To give feedback to students.
- * To give feedback to teachers.
- * To prepare students for 'real life' (Rowntree, 1981 p178-179).

It follows therefore that an assessment should be a flexible but quantitative measurement assigned to objects or events usually having a contingent as governed by the parameters set at that time by the particular assessor.

1.2.1 ASSESSMENT FOR SELECTION

Due to the choices and options that currently exist in the nature of assessment and because of the immense significance of 'selection' that is traditionally attached to assessment Garforth and Macintosh counsel that "*all assessments should be valid and reliable*" (Garforth and Macintosh, 1986 p24). Rowntree amplifies this by contending that the "important should become assessable, not the assessable important" (Rowntree, in Garforth and Macintosh 1986, p25). He also states that the systems of assessment and the reporting of the results of the assessment should "ensure that the 'greatest possible number' of people get maximum benefit and least harm from it" (Rowntree, 1987 p240 [Author's emphasis]). This places a very heavy onus on the various methods, especially examinations, that may ultimately be used to produce the final assessment, as the "end result of the bulk of our assessment practices will be to open certain doors to some, and close them to others" (Pastoll, 1992 p1).

1.2.2 ASSESSMENT FOR LEARNER MOTIVATION

A second role of assessment in the educational process is that in as far as the assessment relates to a student's achievement, it can provide meaningful guidance for learner motivation, especially in the realms of consolidation and structured learning. According to Crooks there is "little disagreement that for most tertiary students the very existence of assessment can be a factor which

motivates them to work harder at their studies" (Crooks, 1988 p6). Boyce is of a similar persuasion, in that the purpose of assessment in tertiary education is primarily to provide an account as to the "strengths and weaknesses of the student for his or her own benefit" (Boyce, undated p2). It therefore follows that assessment of a student's achievement should be "central to the whole teaching-learning process" (Garforth and Macintosh, 1986 p82). In other words, assessment epitomises the very core of the educational process by reporting levels of attainment. Crooks emphasizes this by claiming that perhaps "the most important function of assessment in tertiary teaching is its role in giving the students feedback on their progress and achievements" (Crooks, 1988 p8).

1.2.3 ASSESSMENT FOR FEEDBACK AND FORECASTING

The third purpose of assessment is one of supplying information to parents, sponsors, teaching staff, potential employers and other educational institutions as to the specific accomplishments of the individual student. (Broadfoot, 1987 p5). It is generally on the results of the reported assessment that the above interested persons are able to make decisions.

For parents and sponsors the feedback from the assessment is often only as important as the result itself. They are concerned primarily with whether the student has passed or failed the assessment and secondly, how well or badly has he or she passed or failed. For the teaching staff the assessment not only

allows them to identify potential problems students may have but it can also "provide feedback to teachers on the quality of their professional work" (Eisner, 1993 p225).

In conjunction with the above, the assessment may be used by prospective employers and educational institutions as a means of predicting possible future achievement (Gibbs, 1991). In essence/effect, assessment systems may be used to fulfil the function of a tollgate, ensuring that everyone who exits has the same minimum standard, therefore allowing for choice and appointment via the determination of a readiness to proceed through the certification or grading of the assessed achievement. As Crooks points out, results from "assessments carried out prior to admission to tertiary education are often used to assist in selecting students for admission to particular institutions or to individual programmes within those institutions" (Crooks, 1988 p5).

The reported information is used for selection and apportionment of projected opportunity. In other words it can be used to compare and select individuals by diagnosing abilities and attributes that will be required and on that basis make certain predictions as to the potential future of the candidate. According to Broadfoot the purpose of assessment for 'consumers' is for "fair selection and allocation of opportunity (the 'meritocracy')" as well as "feedback about the quality of a particular institution", "monitoring of national standards" and "curriculum standardisation and control" (Broadfoot, 1987 p5). Prospective

employers and the other interested parties see the role of assessment in the educational process as a means of establishing the academic worth of the student together with the educational institution and even the standard of education in a country. Eisner calls it "a temperature-taking function" which he claims can be used "to describe the educational health of the country" (Eisner, 1993 p224).

1.2.4 ASSESSMENT FOR INFLUENCING TEACHING METHODS

The final major role of assessment in the educational process is the use of assessment to focus on the merits and value of the programme that is being supplied, if "the programme's quality is poor to begin with, the quality of teaching does not matter much: if it's not worth teaching, it's not worth teaching well" (Eisner, 1993 p225). Therefore the importance of assessment here is the influence it has on the current teaching methods. Wolf talks about "assessment as a vehicle of change" and maintains that assessment "has frequently been used by English governments as a mechanism of reform because it has been something they could control" (Wolf, 1991 p552). This is in all likelihood due to the profound interest society generally shows in the educational standards of its future generation.

Throughout the United Kingdom assessment has had, and is having, a marked leverage in education. This was remarked on by Dockrell in his review of "The Changing Face of Educational Assessment" by Murphy and Torrance. Dockrell

declared that educational reform "is to be assessment-led and assessment-driven", (Dockrell, 1989 p478) a situation that must affect not only what is taught but also how it is taught and therefore teaching methods as a whole.

1.3 CHARACTERISTICS AND SHORTCOMINGS OF TRADITIONAL ASSESSMENT REPORTING

Given the vital and varied roles played by assessment in the educational process it is highly desirable that the methods of reporting the results of assessment enhance and inform these roles. Regrettably though it is often the situation that the methods currently in use do not fully realize general expectations. Much of this is due to the fact that these expectations originated inadvertently as a consequence of the acknowledged different roles of assessment. Furthermore, it is usually a particular characteristic of the method of reporting the results of assessment that is ultimately answerable for the ensuing shortcomings.

1.3.1 FAILURE OF ASSESSMENT TO REVEAL THE EXTENT OF LEARNING

Traditionally, in higher education, study/learning is prescribed for a specified time period, at the end of which, written and/or practical examinations are undertaken in order that a single mark or symbol can be allocated to the prescribed work. This single mark, commonly known as the 'assessment' is intended to indicate the extent to which the learned material was mastered

or understood. Unfortunately however, most of higher education uses tests or examinations that do not adequately measure changes in knowledge (Gibbs, 1991 p3). The results of those assessments cannot therefore be appropriately used for showing an extent of mastery of the learned material.

Part of the reported problem may also be that an assessment is often erroneously taken to be an evaluation, which it is not. Evaluation "implies a process of both measurement and assessment but carries the process one step further to the formation of *value judgements*" (Meyer and Veenstra, 1980 p59).

Eisner tends to look at the situation slightly differently in that he professes that "despite its salience, the term *assessment* is more an aspiration than a concept that has a socially confirmed technical meaning". He explains this by saying that, the "older term, *evaluation*, while not particularly ancient in the literature of US education, is no longer as popular as it once was; *assessment* has given it a gentle but firm nudge" (Eisner, 1993 p219). Notwithstanding the above, evaluation should not be confused with the process of assessment. Rather it is the judgement placed on the outcome of an assessment, by assigning a value or worth to the assessment.

1.3.2 NEGATIVE EFFECTS OF TRADITIONAL REPORTING METHODS

A second reason for the observed failure of assessment to fulfil its potential

may be that insufficient care or attention is currently being directed towards the **methods** used to report on the results of assessment, and this is why it so often seems to fail to meet its educational objective. The negative effects of reporting assessment as is currently practised are evident in at least six different areas.

1.3.2.1 OBJECTIVITY AND RELEVANCE OF THE ASSESSMENT

In the first instance there are the innate problems of the **objectivity** and the **relevance** of the conventional examination system. As far as objectivity is concerned the content of an assessment is governed by the assessor, and therefore the "acts of choosing what to cover, what questions to ask, and which performance criteria to apply are all highly subjective, depending very much on the state of mind, values and priorities of the examiner" (Pastoll, 1992 p2).

The relevance to 'real-life situations' of the well-known constraints of examination conditions is also in doubt. "Conventional three-hour unseen exams, with no access to books, notes or other resources, are a rather curious way of testing ability. Students will probably never face the same kind of test of memory under such extreme time pressure in any subsequent work" (Gibbs *et al*, 1986 p55).

1.3.2.2 PROCESSING OF ASSESSMENT DATA

The second major negative aspect relates to the traditional system whereby

"class teachers routinely process assessment data in a variety of ways; they convert marks to grades, combine marks and change marks to different scales" (Engel Clough, Davis and Sumner, 1984 p202). The sum of this reorganization of the various assessment data is then subsequently reduced to a solitary final assessment that awards a single mark, grade or symbol to represent a student's achievement in a specific subject.

Although used extensively, this method of reporting an assessment as a single mark, grade or symbol does not appear to serve as good an indicator of a student's individual achievement as would be desired by pupils, teachers and consumers. Gibbs, is of the opinion that the conventionally established assessment methods do not achieve their aims. "If we are assessing students primarily to provide employers with useful information then we are making a bad job of it" (Gibbs, 1991 p1).

To substantiate this, Gibbs has mooted a number of myths about assessment as it is typically reported. One of these myths is that "assessment enables employers to select graduates" (Gibbs, 1991 p1). In his exposé of this myth Gibbs alleges that prospective employers interviewing graduates judge them on "their presentation of self, articulacy, quick-wittedness and work experience" (Gibbs, 1991 p1), rather than on the reported assessment results of their formal education. Gibbs further argues that the only object the current methods of reporting assessment has achieved is to ensure that only the students with adequate, good or above average marks or symbols actually get

to the interview stage and "this is largely because employers have no other evidence to go on" (Gibbs, 1991 p1).

1.3.2.3 APPARENT ENCOURAGEMENT OF FRAGMENTED LEARNING

The third problem is that for many students learning is associated with accumulating 'fragments' of knowledge which will need to be repeated (regurgitated) in an examination. This is the so-called "back-wash effect on teaching methods and on students' study and learning habits" (Boyce, 1987 p1). Associated with this is the fact "that it is common for pupils to receive only a mark or grade for a piece of work without any explanatory comment, written or verbal" (Engel Clough, Davis and Sumner, 1984 p202). In other words much of the assessment that is actually carried out is completely valueless with regard to guidance and therefore pupil motivation. Accordingly it is highly likely that the conventional method of assessment and assessment reporting actually stimulates the belief expressed by Säljö that "many people who had attended school only until the minimum leaving age saw learning in incremental terms. Learning, to them, involved a process of accumulating bits of knowledge, like bricks in a wall" (Entwistle, 1992 p597).

This sentiment is echoed by Pastoll who admits that he can "remember cramming for days to pass an examination in a subject in which I was not in the slightest interested (but which was a requirement), only to forget within three days of the exam everything I had studied for it" (Pastoll, 1992 p2). This admission should not be altogether surprising to anyone associated with

education, in fact it is very likely that we have all shared this experience at one time or another. We adopt this approach because we know that our learning outcome will be reported by means of a single quantitative measure - it does not matter what we know, or how well we know it, or even where we can apply it, it only matters how much we know at that particular moment in time. In fact Pastoll sums it up very lucidly by saying that one "cannot help but marvel at our dogged preoccupation with short term memory" (Pastoll, 1992 p2).

There is also the almost standard requirement of every examination that a certain arbitrarily predetermined mark or grade must be achieved in order for the candidate to proceed to the next level of learning. Very often the predetermined mark is set at 50% (which could be taken to mean that the other 50% of the work being tested or examined is possibly unnecessary). However, more often, this can be viewed as an enticement by the student to only submit what he/she considers is worth 50% and then stop, although he/she is capable of substantially more. Along the same lines the examination system causes "students to study with blinkers, paying attention only to what might be examinable. There is no incentive for them to study 'off at a tangent' that which they discover to be interesting" (Pastoll, 1992 p3).

Closely coupled to the above is the fact that students are well aware that they are only likely to be 'put to the test' in a one-off three hour examination, as "the assessments we use are the 'viewfinders' students use in choosing

what and how to study" (Crooks, 1988 p10) in order to pass the assessment successfully.

Kirsch, asks the question, "when will we design examinations that will encourage deep, retentive learning and a system of marking that rewards those who have understood what they have learnt more than those who simply regurgitate facts?" (Kirsch, 1992 p587).

1.3.2.4 DEGREE OF RELIABILITY AND VALIDITY OF THE FINAL MARK

A fourth effect relates to the fact that historically the final mark or grade that is assigned has been accorded a relatively high degree of reliability. Gibbs, however, is of the opinion that assessment, as it is typically reported, is not as reliable as has been commonly believed. He remarks that as educators we are often aware of the "sheer unreliability of most of our assessment methods differences between markers, even differences in the quality of students' handwriting, account for more variation in marks than do differences between students" (Gibbs, 1991 p1). Another angle to this problem of reliability is that often the basis for comparison of marks of grades does not remain constant. This is substantiated by Engel Clough and co-authors who state that in a survey on assessment "63% of teachers said they compared pupil performances with the individual's previous work, but 80% of these same teachers also compared performances with those of other children in the class" (Engel Clough, Davis and Sumner, 1984 p202).

Analogous to the above is the variability (spread) of marks that has a significant effect that, as Crooks points out, can often be overlooked. For example a subject often combines a written component with a test of practical performance. "Both components are marked out of 100, and are supposed to count equally in the final grade. However, while the average marks for the two components are very similar, the written examination marks are much more variable than the clinical performance.... The end result is that if the two sets of marks are simply added, the written exam result tends to be the dominant factor in the final grade, with students who do well on the written exam getting above average grades (regardless of their clinical marks), and students who do poorly on the written exam getting below average grades (also regardless of their clinical marks)" (Crooks, 1988 p15-16). A similar situation arises when course work, marked as a semester or year mark, is given a percentage mark and then combined in a percentage split with an examination mark to produce one final mark.

Another aspect to the variability of marks is pointed out by Broadfoot who claims that "traditional subject examination is also limited in its own terms in that it obscures what may be very significant differences in the levels achieved in the various components of different subjects" (Broadfoot, 1987 p13 [Author's emphasis]). The various parts of an examination, structured questions, essay answers and practical components have very little resemblance to one another as different candidates vary considerably in the way in which they achieve examination success (Broadfoot, 1987 p13).

Along the same lines, Gibbs claims that he has seen "assessment questions concerning statistical error estimation marked with complete disregard for the principles sought in students' answers" (Gibbs, 1991 p1). He emphasizes this still further by adding that statistic students "who simply added scores generated from different scales, with different statistical properties, as we do in aggregating grades, would deserve to fail their degrees" (Gibbs, 1991 p1 + 3).

These views of the inherent unreliability of most of our efforts at assessment are shared by Parsons, who states that we "attempt to salve our consciences by tightening up the statistical procedures that we employ, by standardising marks before combining them, by weighting certain aspects of the course to reflect their relative importance (to us, always), and generally by tightening up the procedures by which we arrive at the final grade" (Parsons, 1985 p1).

The problem with regard to the reliability of a final assessment mark or grade is generally disregarded and we are led to believe that the final mark is not only creditable and therefore reliable, but that assessment is trustworthy. As a result we find ourselves expending futile effort into distinguishing 54% from 55% and making ludicrously strict rules about degree classification where an averaged score of 69% can't be awarded a first (Gibbs, 1991 p1). The consequence of all of the above has been to convince us that 63% as a final mark certifies that percentage of competence; it has authoritative significance, as it is after all, the final mark.

A consequence of the problem of reliability relates to the concurrent validity of the reported mark or grade. As Crooks states, the challenge to the validity of a mark or grade "is the issue of how to combine appropriately the marks from several different assessments to produce a composite mark which can be used in assigning course grades" (Crooks, 1988 p15). Conventionally, the single mark or grade that is reported at the end of a course of study is made up in one of two ways. Either it is a percentage mark combined from various year or semester tests, tutorials and projects, (which represent different areas of knowledge, skills or abilities) which are then added to one or more examination marks achieved in the customary three hour examination, or the final mark may be simply the result of a single examination which seeks to test a similar range of knowledge skills and abilities.

However it is derived, one is forced to the conclusion that such an aggregate mark or symbol is unlikely to validly represent the individual's performance across this range, nor, for that matter does the reporting system satisfactorily reflect the variable learning experiences that were possibly assessed. In this regard it is highly probable that certain available information is 'lost' through not being appropriately or adequately reported.

1.3.2.5 INTERPRETATION OF THE FINAL MARK

The fifth effect relates to the interpretation of the result in terms of the knowledge, skills, etc., that it is meant to reflect. The customary method of reporting on an assessment as a single mark or grade appears to result in little

more than a numerical list of ability which does not have any value other than that it places students in order. Stansbury professes that it is "ridiculous to 'qualify' pupils by putting them all on a single rank order of academic worth" (Stansbury, 1978 p6). Stansbury's statement suggests that the traditional, established methods of reporting the results of an assessment which are purported to provide excellent norm-referenced discrimination between candidates, do in fact only rank ability, and do not achieve their aim of serving as an indicator to inform students, teachers, parents and prospective employers as to the knowledge and skills of a particular candidate. If one of the roles of assessment in the educational process is to provide a means of being able to distinguish comparative differences in diverse students' capabilities, and this is not being accomplished, then possibly it is the way in which the assessment is reported that is at fault.

1.3.2.6 PREDICTIVE IMPLICATIONS OF THE FINAL MARK

A further shortcoming with regard to the established use of the traditional method of reporting success or otherwise, is the legitimacy it has in the eyes of the public as a basis for estimating future accomplishment in post-secondary education. Contemporary work indicates that there appear to be misgivings about the predictive validity of this parameter as well. Gibbs is of the persuasion that "A-level results are very poor predictors of degree results and degree results are very poor predictors of success in any aspect of adult performance - even postgraduate study!" (Gibbs, 1991 p3). This view has been echoed by the British Schools Council, who, according to Harrison, have

expressed "growing concern, both within and outside the education system, that public examination results provide insufficient information on the attainments of candidates" (Harrison, 1983 p7 [Author's emphasis]). It is significant to note, at this stage, that the British Schools Council is criticising not the examination system *per se*, but the results that are reported.

1.3.3 FAILURE OF TRADITIONAL REPORTING METHOD TO MEET EMPLOYERS' REQUIREMENTS

From the above it would seem as though the present methods of reporting assessment are at least partially responsible for the dissatisfaction that is expressed and are in turn, accountable for the content and process of assessment coming under the spotlight. Many programmes are presently being launched towards improving the methods of reporting these results. As a consequence this has tended to illuminate further the shortcomings of the traditional examination system as well.

To add to all of this are the results of various studies carried out in the past to find out what sort of information employers would like to receive on job applicants. Industry has, for example, voiced dissatisfaction with the abilities of students as expressed by the Confederation of British Industry (CBI) in evidence to the Select Committee on Education Science and the Arts. They voiced a desire to see more importance attached to personal qualities, such as motivation, ability for original thought and ability evaluate and solve

problems. According to them these qualities do not necessarily come out in some of the applicants they get (Parsons, 1987 p1).

Tate quoting the CBI argues that the "outcomes from all training and vocational education....should include the following core elements:

- * values and integrity;
- * effective communication;
- * applications of numeracy;
- * applications of technology;
- * understanding of work and the world;
- * personal and interpersonal skills;
- * problem-solving, and positive attitudes to change" (Tate, 1991 p8).

A comparable list of attributes produced by the British Institute of Personnel Management reads as follows;

- (a) literacy;
- (b) numeracy;
- (c) communication;
- (d) organisation of work;
- (e) working with colleagues;
- (f) working with people in authority;
- (g) analytical ability and problem-solving;
- (h) judgement and decision-making;
- (i) adaptability;
- (j) responsibility, self-awareness and maturity; (Broadfoot, 1986 p4).

If the above two examples accurately reflect what employers would like to receive, then current indications would tend to vindicate the accusation that the amount of help provided to prospective employers by the present systems of reporting assessment, appears to be decisively limited. In fact what "emerges is a clear information gap between academic results on the one hand and school references and private references on the other" (Stratton, in Broadfoot, 1986 p112). This is indeed an omission, possibly one that is the result of the original design of academic assessment as it was traditionally conceived.

Consequently there appears to be a rationale for devising a more comprehensive method of reporting the results of student assessment by supplementing the traditional procedure with additional information derived from the variety of discrete types of achievement that are subsumed in current assessment methods.

If substantially more information on the traditional assessment could be made available to the various end-users, by employing a different method to present the report of the final assessment, it is envisaged that the supplemented assessment record could greatly facilitate the evaluation of the progress and worth of a particular student's achievement. This is particularly important when consideration is given to the future of education where "the next decade will see a substantial rise in the participation rates in higher education" (Race, 1992 p2). In further discussion one of the scenarios envisaged by Race

is, "more assessment (of the traditional kind)" (Race, 1992 p3). If there is indeed going to be 'more assessment', it behooves teachers and lecturers to ensure that it is not of the 'traditional kind' and that the value of an assessment truly serves as an indicator to inform students, teachers, parents and prospective employers as to an individual's knowledge and skills.

1.4 PRESSURES TO RETAIN THE PRESENT ASSESSMENT REPORTING SYSTEM

If the present system is apparently so flawed, the obvious query is, why has it persisted, largely unchanged, until today? This question is echoed by Broadfoot who asks why "formal examinations (with their pernicious effects) are allowed to continue in the face of such cogent arguments against them" (Broadfoot, 1986 p4). There appear to be three principal reasons that emerge from the literature, demonstrating sufficient justification for the continued use of a system that does not seem to fulfil its purpose effectively.

1.4.1 GENERAL OPPOSITION TO CHANGE

Foremost is the oft-reported claim that the educational process in general opposes forms of change and innovation. This criticism of education and the educational process is described by Dockrell as "its inertia, its lethargy, its predilection for procrastination, its reluctance to respond to outside demand, its general resistance to change" (Dockrell, 1989 p480).

1.4.2 EDUCATIONAL LEGITIMACY AND ACCOUNTABILITY

The second argument may be ascribed to the fact that any system or procedure within an educational programme has to be accountable for its actions and decisions. It is society's customary condition that it needs to know what we are attempting to do in assessing educational achievement. In other words the policy that is adhered to must be not only valid and reliable, but it must also be legitimate.

Educational legitimacy is vital for the continuing belief in an educational programme and all the more so when it is concerned with "the question of legitimacy in the selection process, and the need for objectivity to militate against bias and injustice in the allocation of life chances" (Broadfoot, 1986 p4). Until comparatively recently this legitimacy was implicitly assumed, being based on historical acceptance from the time of Plato and Socrates. However the contemporary examination system is not necessarily legitimate, objective or militating against bias and injustice, and consequently it is currently being subjected to critical evaluation.

1.4.3 ABSENCE OF A SUPERIOR SYSTEM

The third and probably most overwhelming reason why the situation as regards reporting on assessment has remained unchanged for so long, is that to date, we do not appear to have been able to develop a significantly

improved proposal to supplant that which is currently in use. According to Broadfoot, it is because "external examinations are the best means so far devised of meeting the criteria of comparability, reliability and legitimacy that they have enjoyed such continuing popularity, despite their negative effects on the learning process and their inefficiency in providing the information employers really wish to know" (Broadfoot, 1986 p5 [Author's emphasis]).

1.5 PRESSURES FOR CHANGE TO THE PRESENT ASSESSMENT REPORTING SYSTEM

It should be apparent that, notwithstanding the reasons for the historical and current state of educational assessment, there are pressures to correct the situation with regard to enhancing the reporting of assessment. These forces started to develop over twenty years ago and are indeed occurring in many educational systems throughout the world, with the motivation for the pressure founded in a deep concern within and without education systems.

1.5.1 PRESSURES FROM WITHIN THE SYSTEM

From within the system, assessment reports have been labelled 'unjust' and 'inconsistent' by students who have become dissatisfied with being continuously admonished to try harder, while simultaneously receiving little benefit for extra effort that is eventually reflected as a single final mark with a comparable value that means nothing other than the mathematical

difference between 61% and 67%. Similarly, teachers also criticize traditional assessment procedures saying that they constrain natural initiative, curb enterprise and are generally a poor measure of a student's competence.

1.5.2 PRESSURES FROM OUTSIDE THE SYSTEM

In synchrony with the above and from outside the system, consumers such as prospective employers are demanding a valid meaning to the mark of, for example, 78% in terms of knowledge, ability, practicality and evaluative skills, particularly in relation to rote learning and pure memorization versus analysis and understanding. In other words, they are calling for "broadening the range of assessment by emphasizing skills and/or understanding and application rather than just knowing" (Dockrell, 1989 p478). Eisner underlines this by stating that, the "tasks used to assess what students know and can do need to reflect the tasks they will encounter in the world outside schools, not merely those limited to the schools themselves" (Eisner, 1993 p226).

1.5.3 DEFICIENCIES AND CREDIBILITY OF THE SYSTEM

The feeling is, that in general, traditional examination results do not provide sufficient information and that the information may also be invalid and unreliable. This is possibly why there has been a recent spate of books and a sudden upsurge of interest in educational assessment (Dockrell, 1989).

Eisner also asks the question, why are "we now turning to an interest in what is called assessment, indeed not only assessment, but *authentic assessment*" (Eisner, 1993 p223). If education as a whole is to retain its established credibility and prestige, the author believes that the challenge in the above question will have to be recognized very soon.

Most of the details quoted in this Chapter were in reference to the secondary school system in the United Kingdom. It stands to reason however, that what is true at secondary level is equally true at tertiary level. This is especially so when it is considered that for most of us, educational assessment "is confined to a fairly small proportion of our life-span. But it often has a disproportionate effect on what happens in the rest of it" (Rowntree, 1987 pxii).

[Note: the author would like to record that, where relevant, the use of the pronouns 'him', 'his' and 'his/her' have been taken to be synonymous with regard to their meaning in the text].

CHAPTER TWO

ALTERNATIVE ASSESSMENT REPORTING PRACTICES

2.1 INTRODUCTION

The widespread dissatisfaction with the present reporting system which fails to reflect, in an adequate manner, a record of the student's achievement during his period of formal education has, according to Harrison, led to various methods that "could provide more explicit information on the skills mastered, and the level of understanding reached, by candidates who have obtained a given grade" (Harrison, 1983 p7).

It was within the above circumstances that, in the United Kingdom, records of achievement and profiles were designed for pupils in secondary education. The original concept of the records was to report on a wide range of achievements and experiences in themes or aspects of subjects that were not currently covered by examinations. From this basis and with reference to Chapter One, it was considered that there was no inherent reason why in the tertiary sector, a student's record of achievement could not be more usefully reported. It was therefore contemplated that it would make good sense to try to institute a similar method parallel to the established and traditional examination system.

2.2 CLARIFICATION OF TERMINOLOGY

Before discussing the history behind and the current uses of **profiles** and **records of achievement** the author would like to clarify the two terms. According to Baumgart the "word '**profile**' has been used over a long period in the literature on measurement and evaluation in education to describe the presentation of an individual's achievements or characteristics on multiple dimensions" (in Broadfoot, 1986 p42). Contrastingly, '**record of achievement**' is a term used to "describe school-leavers' documents, which may include the results of a variety of examinations, graded tests and other assessments, and other information about a student, as well as internal records compiled by teachers and/or students and covering the total education progress of the student" (Broadfoot, 1986 p238).

Therefore, a '**record of achievement**' is a system of reporting information obtained from a number of different types of assessment that may be made throughout a course of study. It is **not** a method of assessment to replace or compete with traditional examinations, it is merely a logical and informative system of reporting the assessed achievement. The record may be presented in such a way that it could be of value in the formative process, as a means of feedback to the student, as well as being a summative record as a possible predictor of future success. The reason for this is that it could provide different information about a students' capabilities over a varied range of abilities which have in fact been tested and assessed but which are not

currently reported on by traditional assessment reporting methods.

The above presupposes that for 'records of achievement' to be of use, they must record a wide and diverse range of assessments of knowledge, skills, and evaluative experiences which can not be aggregated, averaged or subjected to any other reductionist techniques of educational measurement.

By contrast, 'profiles' can "merely comprise a series of test measurements on scales which can be statistically processed" or the "well known batteries of aptitude and personality tests which produce profiles based solely on test scores" (Mansell, in Broadfoot, 1986 p27).

Garforth and Macintosh use the words 'profile' and 'records of achievement' synonymously and state that they encompass "a formative process of recording information which could assist someone while still a student, and a summative statement of achievements made on completion of studies" (Garforth and Macintosh, 1986 p1).

Harrison also explains that there is a distinction to be made between "profiles which are intended to give more detailed information about examination performance and those concerned with 'the whole person'" (Harrison, 1983 p11). Francis (in Harrison, 1983 p11) describes the one type of profile report as "showing the grades or marks achieved by candidates in the separate components of a single examination", whereas Balogh (in Harrison, 1983 p11), depicts profile reports as, "public documents which provide more or less

comprehensive statements of pupils' educational experiences, competencies and interests at the end of their period of compulsory education".

It is because of the differences in emphasis on the content, as noted above, that in this particular study the term 'profile' will only be used in discussions with reference to the literature. For the purpose of this study, with students in tertiary education at the Cape Technikon, where the reporting of distinct components of each examination is the focus, the term **Records of Student Achievement (ROSA)** has been preferred. (The concept will be formally introduced in Chapter Three).

2.3 EARLY ATTEMPTS AT RECORDS OF ACHIEVEMENT IN THE UNITED KINGDOM

The focus of the following historical study is the United Kingdom, which is due to the fact that the initial work on records of achievement originated in the United Kingdom with Don Stansbury and a number of other teachers at a school in Swindon. The underlying reason for this first scheme being started by this (concerned) group of teachers was a sincere attempt to rectify the then current situation whereby so many children, left school after 'x' number of years with nothing much other than an attendance record.

This was due to the fact that in the United Kingdom the 'public examination system' had at that stage (up to the early 1960s) only been for those few

pupils of the highest academic ability (see later in this Chapter). This had not been the case for countries such as the United States of America, where education had not only evolved around a much broader curriculum but assessments of value had been available to all pupils at some point, within the breadth of the numerous curricula. This served to ensure that all the children who had attended school were able to achieve some type of certificate or other qualification. In short the need for something like 'records of achievement' schemes in the United States of America has simply never arisen.

This is in relatively sharp contrast to the situation in, for example, Scotland where work on profiles during the 1970s "was largely due to the absence of examinations appropriate to pupils of an ability range served by the CSE [Certificate of Secondary Education] in England and Wales" (Pearson, in Broadfoot, 1986 p34). In what had apparently been an analogous situation in the United Kingdom in 1943, the Norwood Committee had argued for a school certificate rather than formal examinations for less academic pupils.

It is rather difficult to pin down the exact origins of the use of records of achievement, however a number of authors as well as de Groot, refer to Don Stansbury's influence as "a key figure in the early days of RPA [Record of Personal Achievement] and, subsequently, the developer of Records of Personal Experience (RPE)" (de Groot, in Broadfoot, 1986 p92). As to the reasons for their development, Broadfoot claims that, as "early as 1911 the

Consultative Committee of the English Board of Education rehearsed the first of many arguments in favour of the provision of a school certificate rather than formal examinations for all but the most academic pupils" (Broadfoot, 1986 p16). Garforth and Macintosh add that it was since the time of the final Norwood Report in 1944, that virtually all major reports on secondary education referred to the need for information in addition to that provided by public examinations. According to them the development of profiles was as a response to these reports but also as a direct result of the "inadequate information about pupil performance provided by public examinations" (Garforth and Macintosh, 1986 p11).

Chronologically notable in the development was the ratification by the Secondary Schools Examinations Council in 1947 of the 1944 Norwood Report which advocated the introduction of school certificates. This was further endorsed in 1959 by the Crowther Report. However, in spite of all the recommendations and approval, very little was accomplished and it is Broadfoot's view that all the "arguments and evidence put forward were powerless against massive public pressure, which led to a proliferation of rather than a reduction in the number of examinations in the 1950s and 1960s" (Broadfoot, 1986 p16).

The first of these public examinations was the General Certificate of Education (GCE) Ordinary ('O') level in 1951, which was targeted at about 20 per cent of the academic 16-year-olds, and interestingly had "a failure rate of

about 50 per cent of the entries" (Mortimore and Keane, in Broadfoot, 1986 p67). This was followed by the introduction of the Certificate of Secondary Education (CSE) examinations in 1965, which now provided an examination for a further 40 per cent of 16-year-old pupils, but without much improvement in the pass rate or in the methods used for reporting the assessment (as will be discussed later).

In 1978, on the basis of a report from the Waddell Committee, the government changed to a new 16+ examination, the joint GCSE examination (General Certificate of Secondary Education) which involves seven levels of awards or grades based on distinct grade-related criteria. However, according to Baumgart, advocates "of profiling have cautioned that the new 16+ examinations amount to little more than tinkering with the old system rather than providing a genuine restructuring" (Baumgart, in Broadfoot, 1986 p43). In other words, the GCSE examination still has a pass/fail result, which means that a notable number of 16-year-olds still leave school without any certificate, whereas bona fide "records of achievement are geared to success. Whatever the level of achievement, success can be celebrated" (Mortimore and Keane, in Broadfoot, 1986 p67).

Therefore, in terms of practical records of achievement, one of the earliest approaches (as mentioned above) was the Record of Personal Achievement (RPA) developed by Stansbury together with a "dedicated band of teachers who created RPA in Swindon in the late 1960s" (de Groot, in Broadfoot,

1986 p89). Basically the scheme revolved around a number of card headings which were filled in by the pupils, and retained, to eventually form a Record Book which could be of use to prospective employers. "The RPA placed the onus on the student to record events, achievements and experiences in descriptive fashion with a teacher or other adult having a role in validation, but not in assessment per se" (Baumgart, in Broadfoot, 1986 p44).

Due to the observed value of an RPA, especially to more vocational pupils, in 1970 the Wiltshire Education Committee encouraged schools in the county and any interested schools elsewhere to adopt the same scheme using their own list of eleven crucial components. (Details of this scheme will be discussed later in this Chapter).

This initiative was followed by the Schools Council who, based on Swales' independent 1979 evaluation of the Swindon RPA scheme, "agreed in 1980 to support a pilot development programme in south west England" (de Groot, in Broadfoot, 1986 p92). It was also at this time that the historical purpose of an RPA, that of providing more meaningful goals for less academic pupils, as stated earlier, was queried and it was decided:

(a) that personal recording should mainly aim to promote confident personal development and self-awareness;

(b) that it is invidious and illogical to regard personal recording as an educational scheme limited to certain sections of an academic population (de Groot, in Broadfoot, 1986 p92).

At the same time it was argued "that the term 'achievement' in RPA was at best superfluous and at worst misleading, as there was no attempt made to screen, to measure or to assess the file entries against objective standards" (de Groot, in Broadfoot, 1986 p92). The title was therefore changed to 'Personal Records' "from which PPR (Pupils' Personal Records) was coined as the distinguishing title for the development project" (de Groot, in Broadfoot, 1986 p93).

The Local Education Authorities (LEA) of Avon, Cornwall, Devon, Dorset, Somerset and Wiltshire as well as Oxfordshire (from outside south west England) all agreed to take part in the Schools Council regional initiative of personal records and to 'subscribe' to the 'key criteria' that were to be used for the PPR (see later in this Chapter). The above project was founded on the four purposes of the 1984 Policy Statement on Records of Achievement (DES, 1984) (see Appendix M) and had the following as its overall aims and objectives:

"(a) to explore approaches to recording pupil achievement within the five curriculum areas of the Dorset curriculum policy statement (language; mathematics; science; personal and social education; aesthetic, creative and physical education), together with the areas of cross-curricula skills, personal and social skills and extra-curricula achievements and experiences;

(b) to explore the implications of records of achievement with regard

to the learning and assessment process in schools, institutional structures and practices and examination board practice" (Garforth, in Broadfoot, 1986 p137).

Simultaneously, in 1980, the British Schools Council established a three year project consisting of five separate programmes. Programme 5, 'Improving the Examinations System', was to encompass activities related to assessment, examinations and the presentation of results in such a way so as to provide more information about different kinds of achievement within a subject (Harrison, 1983 p7). By analogy, Programme 5 examined schools in regard to school leavers' records and profiles, reporting of examination results and the current commercial utilisation of examination reports, profiles and other forms of reporting, by prospective employers.

The survey of schools, carried out by Balogh in 1980/81 indicated that, fewer than "100 schools (less than 1 per cent of all secondary schools) offered anything more than a structured testimonial, and scarcely 25 school profile reports appeared to meet the four basic criteria proposed by the Council's staff" (Pearson, in Broadfoot, 1986 p36). (These basic criteria will be discussed later in this Chapter).

A similar survey was conducted into the use made of profile reports by examining boards in late 1981. It showed that the "two boards giving details of component grades within all subjects do so on numerical scales. This extra

information is not recorded on candidates' certificates, but is provided for the benefit of centres (schools and colleges entering candidates)" (Harrison, 1983 p14).

The reasons for the above situation were, according to the Joint Matriculation Board (JMB), attributed to the report on the study undertaken by them in 1978. The study, "based on an empirical investigation of the board's recent A-level examination results in six subjects spread across the curriculum, showed that a profile of these results would not be worthwhile because the reliability of the information provided would not be satisfactory. The results for the components were not accurate enough and the differences between them not great enough to justify the separation" (Harrison, 1983 p13).

For these examples of remissness by schools and examining boards and the resultant squandering of information to have taken place, was lamentable in every respect and only goes to, "add much weight to the arguments of those who maintain that some of this country's most important educational innovations have failed for want of planned dissemination strategies" (de Groot, in Broadfoot, 1986 p90).

However, all had not been lost. Late in 1982, the **Oxford Certificate of Educational Achievement (OCEA)** was established mainly because many "leading educationists had for some time been concerned that all five years at secondary school achieved for the vast majority of children was a

recognition of failure" (Willmott, in Broadfoot, 1986 p127). The OCEA initially consisted of three parts; results of external examinations; graded assessments and a record of the student's achievements and experiences. It is interesting to note that the OCEA was "one of the earliest schemes to combine exam board, local authority and university interests" (Willmott, in Broadfoot, 1986 p127). It is now one of the Department of Education and Science (DES) funded pilot schemes (see later in this Chapter).

The **City and Guilds of London Institute (CGLI)** developed their profile scheme in association with the Further Education Unit (FEU) using their Curriculum Model, '**A Basis for Choice**' which was published in 1979. It described individual student profiles as "records of achievement, constructed in part or wholly by responsible tutors and/or supervisors collectively or individually, involving a measure of student/trainee participation and, hopefully, accompanied by counselling and guidance (FEU, 1981)" (Mansell, in Broadfoot, 1986 p25).

The three aims of their profiling scheme as set out by the City and Guilds were as follows:

- (a) to develop a system which would record students' progress within the current curriculum;
- (b) to promote students' maturity, self-confidence and general awareness of their situation; and
- (c) to generate a reliable profile report.

At that point in time the City and Guilds' initial interest was in aim (c) and towards this end a committee was established, whose objective was to formulate principles with regard to the proposed contents of the final report. (Stratton, in Broadfoot, 1986 p112).

The original groundwork from the FEU led to "a two-year project supported by City and Guilds, the MSC, [Manpower Services Commission] and Oxfordshire and Lancashire Local Education Authorities" and "involved about a thousand students each year" (Stratton, in Broadfoot, 1986 p112). Interestingly this work later led to additional support for the use of profiles in further education, via reports from both "the City and Guilds of London Institute (CGLI) and the Royal Society of Arts which found their work in validating pre-vocational courses was greatly facilitated by the use of profile reporting" (Baumgart, in Broadfoot, 1986 p45).

In 1983 the Department of Education and Science (DES) took over the promotion of profiles from the defunct Schools Council and in July 1984 their policy statement "expressed a wish for more work on records of achievement and to this end it had financed nine pilot schemes in local education authorities (LEAs) throughout the country" (Pearson, in Broadfoot, 1986 p37). These schemes were collectively known as PRAISE (Pilot Records of Achievement in Schools Evaluation). One of these pilot schemes was the OCEA scheme described earlier and another was the Essex Records of Achievement Pilot Scheme, both of which will be discussed later in the

comparison of schemes which follows.

The actual policy statement on Records of Personal Achievement that was issued from the Department of Education and Sciences' Welsh Office in July 1984 stated that, "The Secretaries of State hope that it will be possible by the end of the decade to establish throughout England and Wales arrangements under which all young people in secondary schools will have records of achievement and will take with them when they leave school a summary document of record prepared within a framework of national policy which leaves scope for local variations" (Garforth and Macintosh, 1986 px).

According to Burgess and Adams this statement represented "a major initiative in improving the experience of young people at school, the standards they reach and the quality of what it is they have to show for their years in compulsory schooling" (Burgess and Adams, in Broadfoot, 1986 p76).

Notwithstanding the work on records of achievement in England, in 1972 the Headteachers Association of Scotland set up their own initiative, as a consequence of which the **Scottish Council for Research in Education (SCRE)**, issued the research report **Pupils in Profile** in 1977. The resultant 'Pupil Profile' "was intended to be accommodated within existing assessment and certification practices in Scotland and called for ratings by teachers on a range of basic skills, subject achievements and personal qualities" (Baumgart, in Broadfoot, 1986 p44).

Comparable work was carried out in Wales, which has only eight local education authorities, and in September of 1984 they began work on a model national profile with the following key elements;

- * a statement of attendance;
- * a personal comment by the form tutor;
- * teachers' comments on the pupil's personal qualities;
- * communication, practical and numerical skills;
- * a personal contribution by the pupil describing his or her interests and achievements and service to the school and community;

(Evans, in Broadfoot, 1986 p180).

2.4 OTHER INITIATIVES WITH REGARD TO REPORTING ON ASSESSMENT

In the late 1970s the National Union of Teachers (NUT) in England entered the debates on profiling with the view that "it would be inadequate and inappropriate to introduce such an important reform for only 60 per cent of the age group, and to have nothing of substance or value for the rest" (Evans, in Broadfoot, 1986 p170). This was followed by national conferences and seminars as well as a discussion document published in 1983 just prior to the definitive policy statement produced by the Department of Education and Science in 1984.

The support for the development of profiles by NUT was attributed to their conviction of "the inadequacy of the public examinations system as a means

of assessment" (Evans, in Broadfoot, 1986 p171) and "the principle that all the work of all the pupils in a school is worthy of being assessed and recorded" (Evans, in Broadfoot, 1986 p172). It was considered by NUT that the examination system could not do justice to almost half of the 16-year-olds and yet "profiles, if given the necessary status and importance by the schools and by users, would help to ensure that all pupils receive parity of esteem in terms of the professional time and effort devoted by teachers to the assessment of their work" (Evans, in Broadfoot, 1986 p172). Hence the backing NUT gave to the profiling movement in the late 70s and early 80s.

A second initiative came in the early 80s in the form of a grant from the Gulbenkian Foundation which established a small pilot project for over twenty schools in five LEAs to set up their own Validating Boards with a view to establishing a national system of external recognition for the work of local Accrediting Boards. The local boards would "act in the manner of external examiners, to guarantee the objectivity of the procedures used to produce records and the reliability of what was recorded" (Burgess and Adams, in Broadfoot, 1986 p85-86). It was envisaged that the end result of the project would be the creation of a 'National' Accrediting Council for Education.

Yet another initiative by one of the larger LEAs was the **London Record of Achievement** proposed in 1984 by the Inner London Education Authority (ILEA), which includes graded tests and profiles in the report that takes the form of a "portfolio containing details of examination passes, other

achievements in school and a profile compiled by teachers, parents and the pupils themselves" (Nuttall and Goldstein, in Broadfoot, 1986 p200), as well as graded test results in mathematics, English and other selected subjects.

Within the realm of the further education sector, it is the vocational and pre-vocational education initiatives of the Manpower Services Commission which, according to Garforth and Macintosh have made the most use of profiling for some time. (See previously in this Chapter, the original two-year project initiated by FEU). This opinion is supported by Broadfoot, who believes that it was the application by the vocational training schemes that "led to a rather different set of developments" (1987 p15), where the courses had profiling as an integral and core element, it was no longer considered "an appendage to conventional arrangements but had a key role to play in both the curriculum and communication aspects of the new courses" (Broadfoot, 1987 p15). This was supported by the fact that a number of further education examination boards such as CGLI, RSA and the Business and Technical Council (BTEC) had concurrently begun to incorporate records of achievement as part of their certification process. It is in this context that profiling grew from being a complementary form of recording and reporting to a form which, "like public examinations, made its own requirements" (Broadfoot, 1987 p15).

As a succession of the above it is Garforth and Macintosh's perception that profiling systems are "becoming a part of everyday life for managers, lecturers and tutors in Colleges of Further Education" (Garforth and Macintosh, 1986

px). Most of the schemes that identify with 'profiling' fall within the parameters of what are loosely known as 'course-related profiles', which are those profiles developed for certificate courses such as the Certificate of Pre-Vocational Education (CPVE), the Technical and Vocational Education Initiative (TVEI) or the Royal Society of Arts' (RSA) Certificate of Vocational Preparation. These profiles pertain to specific further education courses and the resultant 'Profile Certificates' consist of a series of statements of what the student is able to do as a consequence of following the particular course.

These initiatives in the United Kingdom were (timeously) paralleled by similar developments in **Australia**, where the six states and two territories all issue certificates to students at the end of year 10 (legal school-leaving age), and at the end of year 12 (admission to tertiary education). The certificates provided at the end of year 10 are basically derived from school assessment whereas those given at the end of year 12 include external examination results in selected subjects.

Based on these original certificates, developmental work on profiling has been carried out by the Education Department of Western Australia since 1984. However, they originally used statistical moderation "in an effort to achieve comparability across schools, across subjects and between internal and external assessments" (Baumgart, in Broadfoot, 1986 p55). Ironically, it is just this type of statistical 'fiddling' that the exponents of profiling and records of personal achievement oppose. "Such techniques have been viewed

with suspicion in England, and the research of Nuttall, Backhouse and Willmott (1974) documents the difficulties of achieving comparability of standards between subjects" (Baumgart, in Broadfoot, 1986 p55).

The result of these statistical problems was that New South Wales abandoned the adjustments across subjects. After all, the very basis for profiles and records of personal achievement is that they are a factual reflection of each individual candidate, and therefore cannot be statistically adjusted. As Baumgart explains, difficulties of this kind "would be greatly magnified if statistical moderations were applied to profile reports with their multiple measures and small numbers of students" (Baumgart, in Broadfoot, 1986 p55).

2.5 A COMPARISON OF THE SIMILARITIES AND DIFFERENCES IN THE VARIOUS SCHEMES OF REPORTING ASSESSMENT

2.5.1 VARIABILITY IN THE DESIGNS OF RECORDS OF ACHIEVEMENT

Original support for profiling in Britain was founded on "a concern to recognise the attainments of those students who have traditionally not received examination certificates and to recognise accomplishments beyond those measured in formal examinations" (Baumgart, in Broadfoot, 1986 p53).

As a result clear distinctions in intent can be seen between the various profiles and records of achievement that have evolved over a lengthy period

of time. This is confirmed by Broadfoot who says it is "characteristic of the 'profiles' movement that good ideas have spread from school to school and group to group. Very little development work has been centrally directed or funded and, in consequence, there exists a great diversity of practice" (Broadfoot, 1987 p1).

However, it is also true that, "nearly all the profiles currently being used or developed reflect the same basic intentions" (Broadfoot, 1987 p17) with regard to reporting on assessment. The major distinction is the specific format/style of the record, being either **formative** or **summative** depending on the ultimate intention of use. Formative records of achievement may be designed to:

(a) form the basis of negotiation in a learning contract in which teachers and students jointly agree to the learning objective to be followed for a period of time. Then at the end of the period of study (month, term, semester or year) the resultant report forms the basis for the next set of learning objectives, again negotiated between the teacher and the student.

(b) be diagnostic, where the curriculum is integrated but without the element of negotiation as above. The diagnostic record of achievement is normally subject based and is designed to provide detailed monitoring of a student's progress through a course of study. Feedback is provided for teacher and student as a basis for remedial action.

(c) be pastoral, which is complementary to course-based records of achievement in that they are student based and record a wide range of different items of information from academic to personal.

(d) be the basis of the reports usually sent to parents, whereby some or all of the above information may be used to form the basis of the report.

On the other hand summative records of achievement may be designed to:

(a) acknowledge achievement, whereby the record encompasses a whole range of activities, experiences, achievements and qualities that the student has shown throughout his/her period of education. It is generally regarded that such a record of achievement is a way of improving a student's motivation and self-respect.

(b) form the basis of a report for all interested parties, that is potential employers and other tertiary educational institutions, whereby a different emphasis is given to the report such that it provides a comprehensive picture of the student's total achievements (Broadfoot, 1987 p17-18).

As can be seen from the above, profiles range from those that include comments about attitudes, educational experiences, interests and character based on personal judgement, to those that aim to increase pupils'

understanding of assessment and permit them to gain insight into their shortcomings by involving them in their own assessment profile (Engel Clough, Davis and Sumner, 1984 p202), to those that merely report the results of examination assessment in greater detail than was previously traditional.

On the whole, therefore, there does not seem to be much consensus as to a blueprint for records of achievement which is borne out by Mortimore and Keane's statement that it "is evident, however, from the very varied formats of the records of achievement currently being developed in schools and colleges, that quite different styles are possible" (Mortimore and Keane, in Broadfoot, 1986 p69). In the final judgment it is very likely that the format/style is of less significance than that there is indeed, a record of achievement being made available. As Rowntree has plainly said, whatever "the span encompassed, a profile and especially one that includes narrative analysis, helps *humanize* the reporting response. Even the simplest of profiles differentiates the student from other students who share the 'same' total but 'add up differently' from him" (Rowntree, 1987 p236).

It is the "humanising" of the report that appropriately fulfils one of the alleged purposes of assessment, that of getting to know students in addition to being able to discern the depth and quality of their learning. The mere act of producing a profile allows for representative examples of the uniqueness of each students' abilities to be displayed. It permits a "window" into part of the

distinctive and individual components that go towards making up a students' original inventory of abilities. Rowntree likens this process of separating the students out from one another to "the opening out of a fan" "with a view to showing that each is in a class of his own" (Rowntree, 1987 p236).

Basically, the significance of profiles and records of achievement is that they can be designed to show **how** a student obtained a certain average mark or grade from a number of different assessments. In essence what the reports could do is to enable a student's usually less discernible characteristics to be reported on and therefore be accessible for appropriate evaluation. From this aspect it is easy to understand why so many reports and recommendations have in the past attempted to suggest the addition of 'something else' to the traditional single examination result.

This is also possibly why there seems to be this diversity between authors, in, not only the ideas and proposals for the 'contents' but also in the uses of profiles and records of achievement. Garforth and Macintosh, for example, agree with Broadfoot and others that profiles vary greatly in content as well as presentation. Likewise, they recognize that there are certain similarities and characteristics or features that show a commonality within the variation. Notwithstanding the differences they affirm that there are three basic components that should be addressed regardless of the format/style of the profile:

Firstly, a "list of items forming the basis of the assessment. These may be called 'criteria' and may be in the form of a list of skills or qualities or may be embodied within a course description" (Garforth and Macintosh, 1986 p2). This requirement is echoed by recent developments in "criterion-referencing to emphasize actual levels of achievement rather than 'order of merit'" (Dockrell, 1989 p478).

Secondly, the profile should have some "means of indicating the level and/or nature of performance reached for each item in this list" (Garforth and Macintosh, 1986 p2). The method used to depict the level can be entirely arbitrary and is often peculiar to the particular profile and its' intent. (Examples will be provided later in this Chapter under ILEA Profiles).

Finally, in order to vindicate the criteria and levels shown in the profile there must be must be an "indication of the evidence used to arrive at the description provided to indicate the context in which a particular skill is assessed" (Garforth and Macintosh, 1986 p2).

2.5.2 COMPARISON OF CURRENT PROFILES, ADVANTAGES AND DISADVANTAGES

Record of Personal Achievement (RPA)

The 'Record of Personal Achievement' (RPA) was initiated by Don Stansbury in Swindon in the early 1970s for those "pupils too often labelled 'less able'"

(Pearson, in Broadfoot, 1986 p35). It is one of the "well-known versions of a particular type of approach to the recording and reporting of student experience which removes the teacher entirely from an assessment role" (de Groot, in Broadfoot, 1986 p88).

Each pupil produced a description of his or her own events, achievements and experiences on a series of twenty-eight different card headings. The descriptions were validated by a responsible adult and the completed cards placed into a Record Book. The pupils could reserve the right to remove cards at any time.

The scheme had considerable impact on less academic pupils by firstly giving them a goal to aim at and secondly by allowing them a contributory role in their education. This in turn enhanced the pupils' attitudes towards teachers and adults in general as borne out by de Groot's comment; "we found that there was a change in the pupils caught up in the scheme. We could feel the build-up of positive relationships between tutor and pupil.....we noticed more heads held high among a sector of our population who had formerly been marked by very defeatist attitudes" (de Groot, in Broadfoot, 1986 p89).

Because this scheme amounted to little more than a self portrait "it was rarely considered useful by busy employers when work was plentiful (Swales, 1979)" (Pearson, in Broadfoot, 1986 p35). Secondly because the scheme was aimed at the less academic pupil "higher-achieving students were dubious

about the virtues of personal records" (Baumgart, in Broadfoot, 1986 p54) which meant that unfortunately an educational stigma came to be attached to the original RPA.

Wiltshire Education Committee Scheme

The Wiltshire Education Committee promoted the original RPA scheme within the county's schools for ten years during the 1970s. The system they used was similar to the RPA scheme as discussed above, with the Wiltshire Committee listing the scheme's crucial components as:

1. emphasising personal development;
2. having a system of recording and organisation;
3. providing a factual record of whatever the pupil takes a pride in having done as opposed to teacher assessment;
4. all items to be validated by a responsible adult who is in possession of the facts;
5. no truthful item to be vetoed by an adult if the pupil wants it recorded;
6. all items to be factual and not contain any subjective or value judgements;
7. items can refer to objective standards of performance;
8. any pupil who completes two years (4th, 5th) is entitled to take away his Record Book;
9. the actual finishing date of each set of Record Books is flexible and is a matter for each school to decide upon;

10. pupils who take RPA may also take examinations;

11. RPA is not restricted to pupils in any ability group and may be taken in mixed ability groups (de Groot, in Broadfoot, 1986 p90).

The advantage of this scheme was its accent towards nurturing self-respect, as verified by the actuality that recorders' "personal development did receive a boost wherever the scheme was given an appropriate place of honour in a school's priorities" (de Groot, in Broadfoot, 1986 p91).

The negative side to the scheme was that many schools and unfortunately teachers missed the point that RPA was a **procedure** and not a course. According to de Groot the "RPA was viewed by a number of schools as being somewhere between a palliative and a panacea, to be applied in suitable doses to the recalcitrant, less academic teenagers" (in Broadfoot, 1986 p90). This misunderstanding resulted in the scheme not fulfilling its rightful potential and eventual abandonment in some cases.

Schools Council Involvement in Recording Schemes

Following the commissioned evaluation of RPA in 1979 the Schools Council held the viewpoint in 1981 that "a record of achievement might include a profile which delineates a few personal qualities and some basic skills" (Mansell, in Broadfoot, 1986 p24). At this time the Department of Education and Science requested the Schools Council Examination team to encourage the development of school leaving profiles in schools in Suffolk, Liverpool and

the Inner London Education Authority. The four basic criteria proposed by the Council's staff were that a profile "was to be non-confidential; was to be available to all pupils irrespective of ability; was to include assessments of cross-curricular skills and some personal qualities; and was to be in a structured format common to all pupils in the one school" (Pearson, in Broadfoot, 1986 p36).

At the same time the Schools Council Programme Two helped finance a two-year research study in Wales, in association with the Welsh Joint Examinations Council (WJEC) and the Schools Council Committee for Wales. Similarly, as has been previously mentioned, the Council "also gave a grant to a group of schools in eight southwestern counties to enable them for two years (1981-83) to pioneer a new version of RPA under the title 'Pupils' Personal Recording' (PPR)" (Pearson, in Broadfoot, 1986 p36).

Finally the School's Council produced a document with the four 'profiling principles' that were first identified by Balogh in her survey for them in 1982:

- "(a) the recording of skills and personal qualities as well as traditional subject attainment;
- (b) the presentation of roughly equivalent information for all pupils;
- (c) the provision of an open document for school-leavers;
- (d) the availability of the profile to *all* pupils" (Evans, in Broadfoot, 1986 p173).

Local Education Authority Schemes (LEA)

Dorset LEA had been interested in profiling over a number of years and in 1983 a school-focused INSET (In Service Education and Training) workshop manual was published, "designed to assist individual schools in the design and implementation of schemes for recording pupil progress and achievement" (Garforth, in Broadfoot, 1986 p136).

This resulted in the LEAs of Avon, Cornwall, Devon, Dorset Somerset and Wiltshire as well as Gloucestershire promoting **Pupils' Personal Records (PPR)** as opposed to the original RPA.

The laid-down key criteria for the PPR were as follows:

- "(a) In principle, the opportunity to keep a Personal Record shall be available to all pupils
- (b) Entries are pupil-decided
- (c) Entries are pupil-controlled
- (d) Records are designed for use from the Fourth Year of secondary schooling
- (e) Record files are of good quality material and appearance
- (f) Records are pupil-controlled during development and on completion
- (g) Personal Record schemes are procedures, not courses" (de Groot, in Broadfoot, 1986 p94-95).

The success of this was borne out by the fact that in cooperation with the

Southern Regional Examinations Board (SREB) the **Assessment and Profiling Project** was started which involved all Dorset schools for a period of four years from September 1984 onwards. Following this in November 1984, with the cooperation of 24 institutions in the county of Dorset, the Dorset Education Authority and SREB initiated a 'National Profiling Network'. It grew faster than was expected and by "June 1985 it had acquired over 200 members" and by "November over 75 schemes had been described" (Pearson, in Broadfoot, 1986 p39).

In the final analysis, and notwithstanding the growth rate of the 'National Profiling Network', the advantage of the original Dorset LEA scheme was that the key criteria were based on the supposition that pupils complete their Personal Records because they wanted to do so. "The acid test of a Personal Records scheme lies in the dignity it gives to the recorder" (de Groot, in Broadfoot, 1986 p95).

However, as has been mentioned earlier, the teachers and tutors involved in this scheme as with many others have had to readjust, in some cases extensively, to show considerable empathy and "strike a fine balance between 'just listening' and 'interfering'" (de Groot, in Broadfoot, 1986 p95).

Avon Student Profile

The Avon Student Profile contains four sections and exemplifies the belief of the Secretaries of State that the internal processes of profiling should "cover

a pupil's progress and activities across the whole educational programme of the school, both in the classroom and outside, and possibly activities outside the school as well" (Broadfoot, 1987 p30).

The first of the four sections is Personal achievements, the student is encouraged to write about things he/she has done in or out of school where they feel they have achieved 'something worthwhile'. The entry is elucidated by the student and then commented on by an adult for the purposes of validation.

The second section concerns Personal qualities and here the student is asked to scrutinize a list of qualities each with a relevant question (see examples below) and to think about his or her own personal qualities in any given area. The student is asked to write down some of the qualities that they think they possess and again ask for an adult's comment.

Example of some of the Personal Qualities from the Avon Student Profile:

* Self Reliance, Resourcefulness, Independence

How much am I able to do things for myself without expecting others to show me or help me?

* Initiative, Leadership

How willing am I to take the lead or think of things to do?

* Responsibility, Reliability

How much do I take on something to do, and do it as well as I can without being checked up on?

* Perseverance, Determination

How much do I stick at something even if it is difficult? (Broadfoot, 1987 p31).

Thirdly, Basic skills are assessed in the three areas of communication - oral, written, graphical; numerical; and practical. The tutor uses a comment bank to select key statements that he feels to be descriptive of an individual (Broadfoot, 1987 p30).

The final section is based on School subjects, the pupil makes a list of subjects and of subject objectives (gained from the teacher) and comments on his achievement of these, the teacher then comments on the same basis of the pupil's achievement of the set objectives.

According to Broadfoot the most interesting section of the Avon Student Profile is the section on personal qualities. The full list comprises 12 qualities from which the student is asked to select those that appear relevant or desirable to him or her. The novelty in this approach is that the student is free to choose what to comment about with regard to their personal qualities and in this respect the scheme "goes a long way towards avoiding some of the potential hazards of value judgement and stereotyping currently causing concern to many" (Broadfoot, 1987 p31).

Profile Reporting by Public Examination Boards

In general, public examination boards have been fairly restrained in their endorsement of profiles and records of achievement in as far as they relate to the reporting of examination marks. After investigations, a number of exam boards and Schools Council reports came to similar decisions, that in the case

of examinations, more problems were created than solved by detailing the marks (Harrison, 1983 p12-15). However, in 1980 the Normal and Further (N&F) examinations proposal received formal responses, reported on by the Schools Council which "showed that there was a measure of support for profile reporting but little detailed consideration of the implications" (Harrison, 1983 p13). Some of these implications had been previously outlined by other committees and panels such as the following four problematic issues which were enumerated by both the Associated Examining and Joint Matriculation Boards (U.K.) in the mid to late 1970's in response to proposals of profile reporting existing examination results. These four concerns were made, according to Harrison, in reference to the Associated Examining Board's (AEB) experiments in various subjects between 1975 and 1978, as well as studies in 1978 by the Joint Matriculation Board (JMB, U.K.) and were an example of some of the obstacles to profiling examination results:

"how to distinguish and define the elements which are to be reported on separately (are they skills, or tasks, or the content of a given paper, or a method of working such as practical manipulation or written analysis?) and how to describe them without ambiguity for all those concerned, candidates, teachers, examiners and users;

how to ensure that the assessment of each element is reliable enough for it to have a meaning separate from the examination as a whole;

whether profiles can be provided on the basis of existing examination

syllabuses and assessment methods, or whether different ones need to be devised specially with profile reporting in mind;

what use can be made of results reported as a profile (in what way are they more helpful than a global grade to pupils, teachers, those concerned with admission to higher education, and employers?)” (Harrison, 1983 p15).

It would appear that until these areas of contention can be resolved to the various examining board’s satisfaction, very little assistance will be forthcoming from the boards to the profiling movement. What could in fact be of benefit would be for the advocates of the use of records of achievement, to provide testimony firstly to the effect that the records are a means of providing more meaningful assessment. Secondly, especially with regard to public examinations that those concerned with admission to higher education and employers could indeed benefit from more detailed reporting of the results.

The Oxford Certificate of Educational Achievement (OCEA)

Possibly due to its origins the OCEA has received more publicity than any other single ‘records of achievement’ scheme (Willmott, in Broadfoot, 1986 p127). The collaborators in the OCEA are the Oxford Delegacy (the University of Oxford Delegacy of Local Examinations-the Oxford GCE Board), the University of Oxford Department of Educational Studies, and four London

Education Authorities (LEAs)-Coventry, Leicestershire, Oxfordshire and Somerset. The first pilot schemes for the OCEA began in September 1985 and by September 1987 the scheme was nationally available to any interested school.

Willmott describes the Oxford Certificate of Educational Achievement scheme as being made up of three parts - 'E', 'G' and 'P'. The 'E' component consists of the record of results of external examinations, such as GCE, CSE, music grades, and BTEC (Business and Technical Education Council) awards. The 'G' component is made up of graded assessments in English, mathematics science and modern languages and the 'P' component is a record of a students' achievement and experiences, formative during the years at school, and summative when leaving or changing school/college (Willmott, in Broadfoot, 1986 p128).

The validation and accreditation within the OCEA for the 'G' component is determined by the Examination Board by means of defining a number of levels within the basis for assessment and the 'P' component has been produced according to an accredited system, with the 'E' component already having its own validation. In 1983 it was "agreed that, much as some might wish to see these three parts as being separate, basically they were three facets of the same thing. The student is a person and the certificate is a collation of the summative information about him or her" (Willmott, in Broadfoot, 1986 p131).

The prodigious significance attached to the student being assessed by the OCEA as a 'person' is, in the author's opinion, of prime importance in the design of any system of student profile or record of achievement. Furthermore, it represents a major breakthrough of one of the historic barriers that has persisted in education for far too long.

City and Guilds of London Institute Profile Scheme (CGLI)

The CGLI scheme, known as the **Progress Profile Report**, is one of the types of profiles which demonstrates the use of all three of the basic components that have been proposed by Garforth and Macintosh (1986) (see earlier in this Chapter).

In the CGLI Progress Profile Report illustrated in Table 2.1 the level of performance is indicated by selecting an appropriate statement from the five options given under 'progress in abilities', while the blank section under 'examples of abilities' may be used by the tutor to give evidence of the context in which the particular skill was demonstrated. This profile has been developed specifically by CGLI for reporting the outcome of training students for specialized skills in diverse fields of practical technology.

TABLE 2.1 CGLI PROGRESS PROFILE

Progress Profile

Name of Centre and Course:
 Period covered by this Review From: To:
 Signed: (Trainee/Student) Signed: (Supervisor/Tutor)

EXAMPLES OF ABILITIES		PROGRESS IN ABILITIES	
COMMUNICATION	TALKING AND LISTENING	Can make verbatim copies when spoken to	Can follow and give simple descriptions and explanations
	READING	Can read words and short phrases	Can understand a variety of forms or written materials
	WRITING	Can write words and short phrases	Can write reports describing work done
	USING EQUIPMENT	Can use equipment safely in simple tasks under guidance	Can set up and use equipment to produce work to standard
	NUMERACY (1)	Can read and write simple numbers	Can add, subtract and convert decimals and simple fractions
	WORKING IN A GROUP	Can cooperate with others in a task	Can be an active and effective member of a group
SOCIAL	ACCEPTING RESPONSIBILITY	Can follow instructions for simple tasks and carry them out under guidance	Can follow a series of instructions and carry them out independently
	PLANNING	Can identify the sequence of steps in a simple task, with prompting	Can check task given and check the list of instructions
	COPING	Can cope with everyday changes	Can cope with unexpected or unusual situations
DECISION-MAKING	OBTAINING INFORMATION	Can ask for needed information	Can extract and assemble information from several given sources
	ADDITIONAL	Can help someone to carry out clients requests	Can suggest new alternatives from scratch
WORKING WITH CLIENTS	Can accept everyday sign and symbols	Can carry out clients requests under supervision	Can negotiate and help clients needs from existing resources
USING SIGNS AND DIAGRAMS	Can identify patterns in tasks involving simple numbers, decimals and simple fractions	Can make use of simple drawings, maps, timetables and graphs	Can interpret and use basic graphs, charts and technical drawings using
NUMERACY (2)	Can understand safety instructions	Can identify and use safety signs	Can assess a problem in terms of a simple formula and solve it
SAFETY	Can understand safety instructions	Can explain the need for safety signs	Can apply safe working practices independently
COMPUTER APPRECIATION	Can understand everyday uses of computers	Can set up software to gain access to data	Can identify practical applications for computers

(Copied from Braadfoot, 1987 p45)

One of the disadvantages of this type of profile is the aversion some educationists have to selecting or ticking an item that could be considered most appropriate to a particular student. All too often the student, as an individual, falls between the given options and by forcing the assessor to choose one only, the result is, once again, not a true reflection of the particular students' capability. It also must be noted that the Department of Education and Science 1984 Policy Statement on Records of Achievement also "rejects 'ticks in boxes or number or letter gradings'" (Burgess and Adams, in Broadfoot, 1986 p78).

Impact of the Department of Education and Science on Schemes

The Department of Education and Science did not introduce any profiling or records of achievement schemes as such. However they were almost completely responsible, especially after the demise of the Schools Council in 1983 (Pearson, in Broadfoot, 1986 p33) for the advancement of profiling and records of achievement schemes. They suggested "that the introduction of records of achievement would help schools 'to identify the all-round potential of their pupils and to consider how well their curriculum, teaching and organisation enable pupils to develop the general, practical and social skills which are to be recorded'" (Evans, in Broadfoot, 1986 p172).

Regardless of their suggestions mentioned above, of greater significance was the influence behind their Policy Statement of 1984 referred to in section 2.2. The advantage of this authority was that DES was able to make the

"commitment that, by the end of the decade, *all* school-leavers should be provided with such a 'record of achievement'" (Broadfoot, 1987 p1). In other words this was now a serious introduction in secondary schools which was not limited to academic ability or school-leaving age. The result of this is "that all secondary schools, as well as a good number of further education institutions, are likely to become caught up in the profiling movement, even though many feel far from ready to undertake such a commitment" (Broadfoot, 1987 p1).

Herein lies one of the disadvantages of the DES association with the reform assessment, and that is the fact that even with the DES supporting and organising funding for re-training, workshops and similar aids to schools and teaching staff, the "DES initiative will make enormous demands on teachers' skill and goodwill, as well as institutional resources and ability to change" (Broadfoot, 1987 p1).

Some of these demands can be seen in the fairly expansive suggestions that the DES have made, since their involvement from July 1984 onwards, in reference to their expectations as to the presumed benefits and repercussions of the implementation of records of achievement:

- * improve student motivation;
- * prompt schools to change the curricula;
- * be a positive statement of achievement, not a prediction;
- * provide a more rounded picture than is offered by a list

of examination results;

- * provide records which are valued and recognized;
- * involve students in the production of the records;
- * ensure the record becomes the property of the student;

(Hitchcock, in Broadfoot, 1986 p150; Evans, in Broadfoot, 1986 p172-173; Hargreaves, in Broadfoot, 1986 p205).

At this stage, the author would like to make the point that during the initial phases of the introduction of any new scheme or idea it is often the case that powerful bodies are enlisted in order to bring potential stragglers into line. However once this has occurred it is also often the case that these bodies then start to exert undue influence. It is often this point which unfortunately heralds the beginning of the end for the original scheme.

Within this context, not only is the above a daunting list of aspirations to be brought about in one initiative, but with the variations in types and format/style of the current profiling and record of achievement systems, mentioned earlier, it is impossible to say "whether the DES will succeed in bringing all such record of achievement schemes within its national guidelines when it has drawn them up" (Broadfoot, 1986 p230). It may be that having ratified the use of records of achievement schemes by their 1984 Policy Statement, they will find it more appropriate to relinquish the reins to the various LEAs and their examining boards. This sensitive issue of 'power' or 'red tape' is also raised by Broadfoot who warns that if "national guidelines

are successfully imposed, the effect may be to dampen the grass-roots enthusiasm so characteristic of the early stages of the movement and still vital to its proper implementation as part of the teaching-learning relationship" (Broadfoot, 1986 p 230).

Essex Records of Achievement Pilot Scheme

The scheme introduced in Essex aspired to recognize achievement while simultaneously stimulating motivation and personal development by employing a number of principles. Many of these principles and their basics were at this time relatively new to the profiling movement, for example, accomplishing the recognition of achievement through communication and encouraging motivation and personal development by way of the curriculum. According to Broadfoot, records that try to recognize achievement and encourage motivation are likely to be comparable in content to the following from the Essex scheme which supports:

- (i) the recognition of performance/ability in areas of interest to employers to provide more information than is currently available on the traditional certification;
- (ii) the notion that the records be an intrinsic part of the learning package;
- (iii) the identification of cross-curricular skills;
- (iv) the fact that the records should suit all ability ranges;
- (v) the facilitation of curriculum change where appropriate;

- (vi) the involvement of regular dialogue with pupils in both the assessment and recording processes;
- (vii) the inclusion of all pupils from the end of the primary phase onwards;
- (viii) the notion that pupils, their parents and teachers, can regularly examine the progress of individuals to assess areas where special attention is needed;
- (ix) the fact that the records are student centred;
- (x) the facility of monitoring the individual's progress through the course as well as the report given at the end of the course;
- (xi) reporting on positive aspects of an individual's development;
- (xii) that the records be criterion-referenced (Broadfoot, 1987 p13).

Scottish Council for Research in Education Scheme 'Pupils in Profile'

The 'Pupils in Profile' scheme designed by the Scottish Council for Research in Education (SCRE) in conjunction with the Headteachers' Association of Scotland (as set out by their Interim Report of 1973) was one of the earliest prototypes of profiling systems used in the United Kingdom. It did not achieve a widespread effect in schools but was instrumental in introducing the concept of profiling to a vast number of educationalists in the United Kingdom and internationally.

TABLE 2.2

SCRE PROFILE, 'PUPILS IN PROFILE'

CLASS ASSESSMENT SHEET FOR PUPILS	01	02	03	04	05	06
CLASS GROUP	30	30	30	30	30	30
Skills	2	3	2	4	1	3
Listening						
Speaking	2	4	1	3	3	2
Reading	1	2	2	3	2	1
Writing	2	3	1	4	3	1
Visual understanding and expression	4	3	1	3	4	3
Use of number						
Physical coordination						
Manual dexterity				4		2
Performances	1	4	3	4	3	1
Knowledge						
Reasoning	2	3	2	3	2	1
Presentation	3	3	1	3	4	2
Imagination	2	4	1	1	3	2
Critical awareness	2	3	2	2	4	1
COMPOSITE GRADE	1	3	2	4	4	1
Perseverance						
Enterprise	3	4	1	1	3	1
Subject/Activity	HS	HS	HS	HS	HS	HS
Teacher						
Date						

(Adapted from Broadfoot, 1987 p23)

The SCRE aim was to develop a secondary school assessment method for all pupils that could be accommodated within their existing assessment and certification practices and that would meet their needs for self-knowledge and curricula and vocational guidance. The design was basically a 'grid' made up of ratings made on four-point scales (see Table 2.2). The ratings were norm-referenced and the scale points were also anchored to descriptive labels which had been previously evolved with participating teachers (Baumgart, in Broadfoot, 1986 p44). The 'grid-style' report that was finally designed also allowed for teachers to "enter on a class assessment form their assessments of those categories for each pupil, of which they have knowledge, and includes blank optional categories which can be labelled as appropriate for each activity" (Broadfoot, 1987 p22).

The assessment was to be cumulative, continuing from year to year using a variety of assessment techniques including tests and examinations. The final profile would be comprehensive and balanced with no suppositions in regard to major and minor subjects, and include all areas of school life, community work and leisure activities.

As far as the design was concerned, the 1977 SCRE publication indicated that the profile forms should be practicable, requiring a minimum of clerical work and that the assessment techniques should be flexible enough to allow all secondary schools maximum freedom in achieving the common objective of a meaningful and efficient assessment. Finally, moderation between schools

would provide regional or national standards to allow the profiles to be comparable and of value beyond the school (Broadfoot, 1986 p241-242).

TABLE 2.3

COMPARATIVE AIMS AND OBJECTIVES OF SCRE AND BIPM

SCRE (1977)	BIPM (1984)
Reading; Writing;	(a) literacy
Use of number;	(b) numeracy
Listening; Speaking;	(c) communication
Physical coordination, Manual dexterity;	
	(d) organisation of work;
Visual understanding & expression	(e) and (f) working with colleagues and people in authority;
Knowledge; Reasoning;	(g) analytical ability and problem-solving;
Presentation; Imagination;	(h) judgement and decision-making;
Enterprise;	(i) adaptability;
Critical awareness; Perseverance.	(j) responsibility, self-awareness and maturity.

The advantage of the Scottish Council for Research in Education scheme was that their objectives and aims published in 1977 appeared to be very much in line with the definitive list of what employers were looking for in recruiting staff that was subsequently published by the British Institute of Personnel Management (BIPM) in 1984 (see Table 2.3). Agreement on eight of the

original ten items with the exception of the SCRE 'physical coordination/manual dexterity' and the BIPM 'organisation of work' meant that not only have the 'lists' of requirements remained virtually unchanged from 1977 to 1984, but for the contents to have survived over this period of time tends to indicate that they must also be fairly realistic of what is actually required by prospective employers. Interestingly, the BIPM list has already been compared and likened to the index of core elements that was produced by the Confederation of British Industry (CBI) in 1989 (see Chapter One).

Welsh Joint Education Committee Scheme

Wales provides a most interesting pilot study for the implementation of records of achievement on a national scale (Broadfoot, 1986 p229). This is because, as stated previously, there are only eight LEAs in Wales and as such they were able to settle more easily on a basic framework for a national profile with the key elements as described in section 2.2. "The main advantage of such a national scheme is its potential credibility with employers" (Evans, in Broadfoot, 1986 p180) due to the fact that it was implemented nationally from the start. From this national position the schools themselves will have to become seriously involved in researching their own particular designs for the final profiles.

The model profile evolved from four different pilot programmes and was developed by Jenifer Jones for the Schools Council in Wales. The first programme graded a range of skills listed under headings such as written

language and mathematics. The second programme used written comments for the same list of skills, the third used norm-referenced graded assessments of the range, and the fourth, paralleled the hierarchical 'grids' that had been developed by the FEU and the City and Guilds (Evans, in Broadfoot, 1986 p175-176). The final national model that was developed by Jones uses "comments drawn from a computer bank and linked together to form statements of continuous prose" (Evans, in Broadfoot, 1986 p176).

Inner London Education Authority (ILEA) Profiles

Once again, there are definite similarities in the list produced by the Inner London Education Authority (ILEA) in a report on the curriculum and organisation of secondary schools in 1984, to the list of requisites published by SCRE in 1977. The ILEA list distinguishing four different aspects of achievement that should be assessed, are;

(a) written expression, organisation of material, memorisation and similar academic achievements traditionally measured in formal examinations;

(b) practical skills, the application of knowledge, oral and investigative skills (the application of knowledge acquired under (a), only limited parts of which have traditionally appeared in formal assessment);

(c) personal and social skills, communication and relationships, working in groups, initiative, responsibility and other such personal

qualities not normally explicitly measured in traditional assessments;

(d) motivation and commitment, perseverance, self-confidence and self-image (Broadfoot, 1986 p6).

As well as the four aspects of achievement that ILEA assess, the scheme also specifies that the following levels of a student's learning can be recorded:

1. **Knowledge** - factual content, basic concepts of the subject, recall of relevant facts pertaining to application in the subject.

2. **Understanding** - ability to relate the factual to the conceptual content of a subject.

3. **Analysis** - skill involving the examination of a collection of data in a way which requires the student to go beyond the presented evidence and to apply past experience as well as factual knowledge and understanding.

4. **Synthesis** - involves the student putting together separate elements, data, concepts or possibilities into a connected whole or in the form of a system or theory. Can also be the drawing of conclusions or the framing of a hypothesis.

5. **Practical skills** - those which clearly involve the students in doing

things. e.g. writing, drawing, assembly, organising, physical agility and communication.

6. Creativity - a skill measurable in all areas of the curriculum, can include the use of imagination, original expression, and the inventive use of a medium or a material.

7. Aesthetic appreciation - involves a student making an evaluation, assessment or judgement which goes beyond a stereotyped response. Often takes the form of criticism and may be addressed through a variety of different forms such as drama, music, painting, photography and craft work.

8. Cross-curricular skills - include both study techniques and processes, collecting, analysing and summarising information; communicating with others; and planning and organising one's own work.

9. Personal and social skills - may include working in a group; showing awareness of self and of others; initiative; taking responsibility; and working with those in authority.

10 Student's activities and experiences - may include membership of organisations; athletic interest; practical pursuits; musical interests; institutional responsibilities and employment.

Further Education Sector

Following on from the various school and LEA schemes above it was essentially initiatives within the further education institutions that "developed an emphasis on profiling as a formative dialogue" (Broadfoot, 1987 p15). This development originated from transforming the primary concern of 'profiling' from one of simply providing a summative document, to instituting the formative procedures that are typical of the profiles of the further education sector.

'Profile Certificates' that are issued by the various institutions providing vocational and pre-vocational education such as those associated with the Manpower Services Commission (MSC), - the Youth Training Scheme (YTS) and the Certificate of Pre-Vocational Education (CPVE), amongst older schemes like the Royal Society of Arts (RSA), record the objectives which the student successfully achieves on a final summative certificate. For example, the RSA Vocational Preparation (Clerical) Course is intended for those initially seeking employment at operative or equivalent levels. It comprises the following five components;

1. Handling Mail
2. Record Keeping
3. Office Machinery
4. Telephone and Reception Skills
5. Security, Health and Safety.

These schemes are seen as confidence-builders for those students who have previously had little or no success in conventional examinations and the results are given in the form of a profile-certificate which states that the candidate has demonstrated competence in the skills within each component (Harrison, 1983 p43). Each component entails the ability to perform a number (approximately six) of pre-specified tasks or items such as the following for number 1. **Handling Mail:**

- * Sort and distribute mail;
- * Collate and check contents of envelopes;
- * Use a variety of equipment common in the mail room;
- * Make postable packets and parcels with correct, legible addresses;
- * Weigh packets and parcels to calculate the required postage;
- * Use franking machines (Garforth and Macintosh, 1986 p10).

The further education sector has also been partially responsible for designing methods whereby computers can be profitably be used in the compilation of both formative and summative profiles. In 1983, The Further Education Unit produced a publication entitled 'Computer-assisted Profiling' which was based on the use of comment banks. An example of this was the scheme used by the North Warwickshire College of Technology and Art Profile (NWCTA), which makes use of a 'master profile' designed to cover all the initial low-level, courses presented by the college (Broadfoot, 1987 p40).

The design of the scheme required each member of staff to produce a 'profile' grid for their specific subject area. The technique that was used was to split each subject into its component parts and skills, which were then known as 'objectives' and to define four levels of achievement by means of concise statements of what a student could reasonably be expected to do at each of these levels. The policy was for the staff to write the four descriptors/statements in positive cumulative terms. This, meant the students would build on each level in order to reach the next. Furthermore, due to the cumulative nature of the descriptors it was implicit that attainment of a certain level presupposed achievement at the previous levels. Finally, the descriptors were written in language familiar to the students concerned and the interval between the levels of achievement were not so great as to, from a student's standpoint, make real progress unreasonably difficult to achieve.

Table 2.4 below shows the lay-out of the NWCTA profile assessment scheme, the list on the left-hand side describes the subject areas chosen to be included on the course. Each subject area can then be split into 20 sub-sections or 'objectives'. In the example given in Table 2.4 the shaded areas represent objectives not being used on that particular course. Each staff member has a separate sheet for each student and is required to fill in an assessment (numbered one - four to match the descriptors) for each relevant objective. In the example given several staff have filled in assessments for various aspects of literacy, whereas only one member of staff filled in the section on home economics.

While "assessment is a continuous, on-going process, ideally involving the student in a meaningful dialogue about progress made" (Broadfoot, 1987 p40), it is intended that assessment sheets are formalised at regular intervals, preferably through a process of consultation and negotiation between the teaching team and the student concerned. Subsequently the course tutor collates the grades onto one sheet which the computer translates back into displayed descriptors as required.

TABLE 2.4

NWCTA PROFILE ASSESSMENT SCHEME - ASSESSMENT SHEET

COURSE TITLE: Pre-caring																				
STUDENT:																				
DATE:																				
COURSE SYLLABUS:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Literacy	1	2	2	3	2	2	2	2	3	3	3	2	2	2	2	2	3	3	2	3
Numeracy	1	1	2		4		1	3		4										
SLS	2	2	3	3	3	3	2	4	3		n/a	3	3	3						
Job Seeking	2	2	2	3	2	2	2													
Personality	2	2	2	1	1	1	1							1	2					
Phys. Ed.						2														
Gen. Prac. Skills	2				2	2	1	2												
Home Econ.	1	2	2	1	2	2	2	3	2	2	3	2								

(Adapted from Broadfoot, 1987 p41 and 42).

(With reference to Table 2.4 above Broadfoot reported that four levels of achievement were chosen as it was considered that three levels would give insufficient scope and five would become too unwieldy. Level one is high and level four is low) (Broadfoot, 1987 p40).

The most obvious problem with this type of computer-assisted profiling is that although the use of the computer programme saves collation and administrative time, the scheme requires that each staff member fill in an assessment sheet for each student which means that "there is always the possibility that two or more staff may disagree on the level of achievement of a student on a particular objective" (Broadfoot, 1987 p41). The reasons for the disagreement could be a variety of well-known factors however the differences have to be resolved for a single mark to be included on the sheet. In other words this type of profile does not allow for the individual differences in staff 'opinion' that may be due to the student's variable ability within a variety of different subjects and possibly not in fact due to teaching methods; subjective elements in the assessment process or tutor-student relationships amongst other reasons often cited for staff differences.

Once the grades from the various staff assessments have been collated the computer transforms the numbers back into the original descriptors so that a printout of the students' profile assessment can be obtained. An example of the final profile with reference to the collated information shown in Table 2.4 for parts of the subject areas - **Literacy** and **Numeracy** is given in Table 2.5.

TABLE 2.5

STUDENT PROFILE ASSESSMENT

Course Title: Pre-caring	
Student:	
Date:	
LITERACY	
1	READING Reads fluently without hesitation, and in an intelligent manner, a wide variety of reading material including books newspapers etc.
2	INTERPRETING WRITTEN MATERIAL (PROSE) Can understand a variety of written material if written in straightforward manner.
3	INTERPRETING DIAGRAMMATIC MATERIAL Understands most forms of diagrammatic presentations, but unsure about the more complex systems.
4	DRAWING DIAGRAMS Can produce simple sketch maps or diagrams.
5	HANDWRITING Handwriting is clear and easy to read in joined script. Fluent in execution.
NUMERACY	
1	FOUR RULES Can perform a range of skills - perhaps using a calculator for more difficult examples.
2	TABLES Can utilise most tables up to 12 times with acceptable degree of accuracy.

(Adapted from Broadfoot, 1987 p43)

As can be seen from the example of the final profile shown in Table 2.5, although it is long and very detailed, due to the origin of the descriptors (four per each objective) the resultant prose of the final profile tends to be slightly vague -

Literacy

2 'if written in a straightforward manner' -

3 'most forms of.....more complex systems' -

Numeracy

1 'a range of skills'-

2 'with an acceptable degree of accuracy' -

The question which remains unanswered is what, in the assessor's mind is a 'straightforward manner', 'most forms of', 'more complex systems', 'a range of skills', 'an acceptable degree of accuracy' and so forth. Without a reference or key to the comments used in the comment bank, the profile may well be acceptable and understandable to the staff and students using it but would probably tend to lose credibility with regard to potential external users of the final summative profile. This is a drawback seen with most of the computer-assisted profiling schemes and can only really be solved by supplying a copy of the objectives plus all four associated descriptors for each of the twenty objectives, this would obviously result in a cumbersome document which would be totally user unfriendly and certainly do very little to advance the aims of the profiling movement.

Still within the realms of the further education sector, one of the most recent

developments in profiling has been in the area of 'modular profiling systems'. This is where courses are divided up into modules or units, with distinct objectives and assessment criteria. The student has the option to select their own curriculum with the final 'record of achievement' containing any number of elements - units completed and information on personal and work experience. Under these circumstances, "profiling is no longer simply a record of assessments made, it becomes also the curriculum and the scheme of work" (Broadfoot, 1987 p51). Very significant examples of this type of modular profiling system seen in the further education sector are the Certificate of Pre-Vocational Education (CPVE), and the Youth Training Scheme (YTS). Both these qualifications have a common core which is based on experiential learning (i.e. learning acquired from work, life and other experiences) (Mansell, in Broadfoot, 1986 p31).

CPVE is a one-year full-time pre-vocational course run by a joint board of the Business and Technical Education Council (BTEC) and City and Guild representatives. The certificate comprises the following ten compulsory core areas: Communications; Numeracy; Science and Technology; Industrial, Social and Environmental Studies; Information Technology; Personal and Career Development; Problem Solving; Practical Skills; Social Skills; and Creative Development.

All ten of the above core studies are delivered against one or more of the following five vocational bases:

Business and Administrative Services;

Technical Support Services;

Production;

Distribution;

Services to People.

Finally, all of the modules are offered on three different levels:

1. Introductory.

2. Exploratory.

3. Preparatory.

The students have to follow at least four modules within the choice of occupational categories and may choose from one or different levels. The profiling is intended to be a formative activity which eventually leads to the final summative statement. At the end of the year course the student is awarded the following;

a Certificate;

a Profile;

a Record of Activities undertaken.

It is interesting to note that the CPVE profile is based on a bank of statements obtained from one to six descriptors which (as was the case with the NWCTA above) are intended to be hierarchical, with the statement that goes on the final profile the one that indicates the final level of achievement. It may

therefore be stated that the CPVE profile is "course-centred in that it reflects course objectives by means of standardised statements of achievement" (Stratton, in Broadfoot, 1986 p125). The fact that the system is course-centred instead of student-centred makes additional demands on staff "as tasks set for students must be analyzed absolutely, rather than relatively, with regard to the profile statements" (Stratton, in Broadfoot, 1986 p125). The argument of additional staff demands is valid, however, in the broader context of the realisation of the aims of the profiling movement, Broadfoot, claims that the CPVE "incorporates one of the most far-reaching and novel profiling schemes so far developed" (Broadfoot, 1987 p52). Within the same context it is also an illustration of how the development of profiling schemes has become considerably more complex when compared to some of the original schemes such as Don Stansbury's RPA.

Although the Youth Training Scheme (YTS) is a two year certificate, their Record of Achievement is similar to the CPVE. Part 1 provides a summary of achievement in respect of objectives, modules or other qualifications achieved. Part 2 provides details of the trainee, the training programme and the YTS programme in which the qualifications/achievement were awarded. Part 3 of the certification provides a summary of the progress and achievement of the candidate in respect of the following four 'outcomes' of **Occupational Competence:**

1. Competence in a range of OCCUPATIONAL SKILLS.

2. Competence in range of transferable CORE SKILLS.
3. ABILITY TO TRANSFER skills and knowledge to new situations.
4. PERSONAL EFFECTIVENESS (the ability to get results).

In 1987 the YTS Record of Achievement qualification was validated by the Manpower Services Commission (MSC), however the proposal was for the MSC to enter into a partnership with the major validating bodies of City and Guilds, BTEC, and RSA to form a Youth Certification Board (YCB) who would take over the YTS certification and the issuing of the qualification from the MSC. The objective was that the YTS competence-based qualification would be complementary to and integrated with the qualifications presently issued by those national bodies (Broadfoot, 1987 p55).

One of the key areas that has been emphasized in further education and in associated schemes is the promotion of personal and social skills to take precedence over the development of certain academic skills. Garforth and Macintosh are of the opinion that increased "large-scale long-term youth unemployment" (Garforth and Macintosh, 1986 p11) has been partially responsible for the greater emphasis being placed on, amongst others, an individual's personal qualities and characteristics as well as the "identification, description and assessment of clusters of basic, preferably transferable, skills that young people should acquire to make them more easily employable" (Garforth and Macintosh, 1986 p11). It is as a result of these types of developments that 'profiling' systems have extended from the original

government policy applicable to schools and school-leavers to the pre-vocational and vocational domains of further education.

Correspondingly Garforth and Macintosh believe that the skills of, "communication, problem-solving and decision-making are likely to be essential for surviving in a rapidly changing world" (Garforth and Macintosh, 1986 p28). These skills are regarded as core components in courses such as the CPVE, YTS and the Technical and Vocational Education Initiative (TVEI) developed in association with the MSC and other validating boards, as well as in courses from the more established schemes of the City and Guilds and the Royal Society of Arts.

Finally, in relation to the CPVE and YTS Mansell has stated that better access to skill training for adults "will rely on some form of 'portfolio' assessment, recording acquired skills, knowledge and experience. The potential of the profile to provide an adequate base for the recording of these experiences and skills is now recognised" (Mansell, in Broadfoot, 1986 p31).

Profile System in Australia

Baumgart reports that "students leaving Australian schools currently receive limited formal recognition of their accomplishment. In spite of the diverse aims of schooling, system-based certificates of secondary education typically provide highly condensed information on achievement in academic subjects" (Baumgart, in Broadfoot, 1986 p250).

As mentioned previously in section 2.3, year 12 subjects, particularly those categorized as relevant to tertiary entrance, are subjected to various elaborate statistical moderation practices. This basically means that the system is more in line with a profile as defined by Francis (1980, in Harrison, 1983 p11) and is not really a record of achievement.

The current situation in Australia is that certificates are issued by most schools, but they "typically summarise achievements in school subjects and some give information on competence in selected basic skills" (Baumgart, in Broadfoot, 1986 p249). This means that employers are still left with having to "value global academic prowess above specialised skills or other personal qualities" (Baumgart, in Broadfoot, 1986 p250).

Therefore the success of the Australian scheme will possibly depend on not trying to establish parity between non-academic and academic values and finding a way to give public recognition to alternative forms of assessment by establishing general acceptance of the worth and standing of records of achievement of individual students and schools.

2.6 AN EVALUATION OF SCHEMES OF PROFILING AND RECORDS OF ACHIEVEMENT IN THE UNITED KINGDOM

Before commenting on the features of the various schemes established in the United Kingdom (see Table 2.6), the author would like to review the basic

types of profiles and records of achievement that have been, or are currently in use, in the United Kingdom. The author would like to note here that although Mortimore and Keane mention five different types of records of achievement (in Broadfoot, 1986 p69), there is argument for a sixth, that of 'pupil self-recording' since one of the original schemes, the RPA devised by Don Stansbury, is based exclusively on pupils reporting their own experiences and achievements. Similarly, there are schemes such as the OCEA that do not really use any of these models, and with reference to Table 2.6, they have been noted as 'other'. The large degree of variability observed in the different schemes is due to "the enthusiasm that has been generated in the development of profiles" and this "stems from their 'locally driven' nature. Teachers feel more committed to a scheme they have helped develop" (Mortimore and Keane, in Broadfoot, 1986 p70).

- 1. Open reporting sheet - both teachers and pupils enter comments on the basis of agreed criteria.**
- 2. A matrix grid of skills and subjects - assessors (teachers) tick the appropriate box(es).**
- 3. The use of 'comment banks' - assessors select suitable comments from a 'bank' of possible responses.**
- 4. The use of a checklist of items - assessors tick the appropriate series of items.**
- 5. The use of a hierarchically designed grid - assessors select and tick a particular 'step' on the grid.**

6. Pupil self-recording - pupils themselves record events, experiences and achievements.

The open report sheet, also described as pupil-teacher negotiated assessment, is where both teachers and pupils enter comments. This allows for a maximum amount of individual achievement but it lacks uniformity and therefore is unlikely to be suitable for programming, computer storage or comparative analysis.

The matrix and hierarchically designed progress grids present the information simply, with clear identification of the 'steps' involved which can provide motivation for the student to proceed to the next level. Achievement at a specific level automatically implies knowledge of all preceding levels. The designs are flexible enough to allow for individual institution and assessor aims, as well as easy programming, storage on computer and comparative analysis. Similarly, with a 'grid', administrative time can often be saved via computer collation and where prose is used on the final profile, translation of the codes into prose (see the example given earlier for the NWCTA profile).

However, the disadvantage of any 'grid' system is that it tends to implicitly give equal weight to each section, objective or element (depending on the terminology used). Similarly, where subsets are used there is again "an implied equal weighting so that the user, in the absence of specific guidelines, presumably will attach equal weight to the selected elements" (Nuttall and

Goldstein, in Broadfoot, 1986 p190). Generally this implied equality is inappropriate as the measurement of reliability of some elements may be low, it is possible that the same skills may even be measured several times in different guises, likewise some assessments may have a more powerful validity than others. All of this serves to emphasize the fact that without more information about the profile itself, the use of 'grids' can be misleading to the end user (Nuttall and Goldstein, in Broadfoot, 1986 p190).

The use of prepared comment banks or a bank of descriptors allows for greater comparability between topics or subjects. Where computer assisted programmes are used to report the banks there is a considerable saving of administrative time. However, unless even numbers of descriptors are used this method runs the risk that assessors will only use the middle range comments, thereby establishing a norm which negates the intent of the scheme.

Comment banks of descriptors can also run into the problem mentioned previously in connection with the NWCTA, CPVE and to a certain extent the YTS schemes, whereby, due to computer assisted programming and the use of a small number of descriptors the final statements can end up being vague and therefore meaningless especially to external users of the profiles or records of achievement.

The method of ticking a checklist of items is simple and relatively quick to use but it leaves no room for any discrete achievements or variables which may not be included in the specific list, hence it can become stereotyped and tend to resemble the traditional primary school report.

Pupil self-recording is obviously as variable as the open report sheet, allowing for maximum scope over contents and levels of achievement and is therefore the only scheme which is truly personal. However it, too, lacks any uniformity and therefore comparability. It does however have verification, this usually being furnished by a responsible adult who verifies the validity of the reported information.

TABLE 2.6 COMPARISON OF SCHEMES OF PROFILING AND RECORDS OF ACHIEVEMENT IN THE UNITED KINGDOM

SCHEME	R	W	P	S	E	A	D
	P	E	P	C	R	V	L
	A	C	R	R	A	O	E
		S		E	S	N	A
TYPE							
Open reporting sheet (pupil-teacher)	*	*	*		*	*	*
Matrix grid of skills and/or subjects				*		*	
Comment bank of general descriptors					*		
Checklist of items (pre-specified)							
Hierarchical progress grid							
Pupils' self-recording (self-assessment)	*	*	*	*	*	*	*
Other, e.g. 'master' or modular profile							
FORMAT / STYLE							
Formative & Summative	*	*	*	*	*	*	*
Originally Summative only #				*	*		
CONTENT							
General basic skills				*	*	*	*
Specific skills					*		
Specific achievements	*	*	*	*	*	*	
Personal experiences / interests	*	*	*	*		*	*
Personal achievements	*	*	*	*	*	*	*
Attitudes & dispositions / personal qualities				*		*	*
Activities in school / further education	*	*	*	*		*	*
Content elements / objectives				*		*	
Specific abilities							
Cross-curricular skills	*	*	*	*	*	*	*
Examination results		*		*			
Levels of achievement				*			
Blank optional categories	*	*		*			
VERIFICATION							
Observed activities / adult validation	*	*	*	*	*	*	*
Self-reported activities	*	*	*		*	*	*
Formal internal graded tests		*		*	*	*	*
Formal external examinations		*		*			
External moderation / regional or national accreditation		*		*	*	*	*

SCHEME	I L E A	W J E C	N W T A	C G L I	O C E A	C P V E	Y T S
TYPE							
Open reporting sheet (pupil-teacher)	*	*		*		*	
Matrix grid of skills and/or subjects						*	
Comment bank of general descriptors		*	*	*		*	*
Checklist of items (pre-specified)	*			*	*		*
Hierarchical progress grid		*	*	*		*	*
Pupils' self-recording (self-assessment)	*	*				*	
Other e.g. 'master' or modular profile			*		*	*	*
FORMAT / STYLE							
Formative & Summative	*	*	*	*	*	*	*
Originally Summative only #		*					*
CONTENT							
General basic skills	*	*	*	*	*	*	*
Specific skills	*	*	*	*	*	*	*
Specific achievements	*		*	*	*	*	*
Personal experiences / interests	*	*			*	*	
Personal achievements	*	*			*	*	*
Attitudes & dispositions / personal qualities	*	*	*	*	*	*	*
Activities in school / further education	*	*	*	*	*	*	*
Content elements / objectives	*	*	*	*	*	*	*
Specific abilities	*			*	*	*	*
Cross-curricular skills	*	*	*	*	*	*	*
Examination results	*			*	*	*	
Levels of achievement	*	*	*	*	*	*	
Blank optional categories		*		*			*
VERIFICATION							
Observed activities / adult validation	*	*	*	*	*	*	*
Self-reported activities						*	
Formal internal graded tests	*	*	*	*	*	*	*
Formal external examinations	*	*	*		*		
External moderation / regional or national accreditation	*	*	*	*	*	*	*

RPA - Records of Personal Achievement
WECS - Wiltshire Education Committee Scheme *
PPR - Pupils' Personal Records

SCRE - Scottish Council for Research in Education
ERAS - Essex Records of Achievement Pilot Scheme *
AVON - Avon Student Profile *
DLEA - Dorset Local Education Authority Scheme *
ILEA - Inner London Education Authority
WJEC - Welsh Joint Education Committee Scheme
NWT A - North Warwickshire College of Technology and Art Profile *
CGLI - City and Guilds of London Institute
OCEA - Oxford Certificate of Educational Achievement
CPVE - Certificate of Pre-Vocational Education
YTS - Youth Training Scheme

Note 1: The acronyms used for the various schemes in Table 2.6 are either those currently in use in the literature or they have been chosen by the author for the purposes of the Table (*).

Note 2: Schemes are not necessarily in chronological order; although the Table does start with RPA which was the start of profiling; rather they are grouped according to education sector in order to facilitate parallel comparisons. The Table commences with the secondary school schemes, followed by the older, established, further education sector schemes and concludes with the more recent further education sector schemes.

Note 3: Headings are based on the table provided by Stratton (1985) (in Broadfoot, 1987 p21) but only those dimensions relevant to tertiary education have been used.

Note 4: Format/Style has been preferred to the "function" used by Stratton (1985) (in Broadfoot, 1987 p21) since the majority of authors (see for example Garforth and Macintosh, Crooks, Harrison and Broadfoot) use these terms to differentiate between formative and summative assessments.

Note 5: Format/Style, all of the schemes reflected in Table 2.6 currently have both a formative and summative function, however some of them started with the intent of producing a summative document only and this was possible due to the influence of the original requirement of a school leaving certificate for those pupils who under the regulations of the time were not permitted to write examinations (#).

Note 6: Table 2.6 is an amalgamation of information from various authors; (Baumgart, Broadfoot, de Groot, Evans, Garforth, Mansell, Mortimore & Keane, Nuttall & Goldstein, Pearson, Stratton and Willmott in Broadfoot, 1986, as well as Garforth and Macintosh, 1986 and Broadfoot, 1987) for this reason the details given cover both the original and current (up to 1991 - see Chapter One) developments in the compared schemes.

OVERVIEW OF PROFILING AND RECORDS OF ACHIEVEMENT SCHEMES:

From Table 2.6 it is evident that there is an appreciable escalation in the number of 'features' represented in the profile schemes from the original secondary school 'Record of Personal Achievement' (RPA) scheme to the further education schemes such as the Youth Training Scheme (YTS). The reason for this is self evident, as the profiling movement has gained momentum and been found to be of significant benefit to all concerned so the extent of the schemes' features have increased.

Contrary to the tendency mentioned above is the evidence that the individual schemes seem to have evolved very specific (and therefore) distinguishing numbers of levels or abilities that each uses to assess their students. The ILEA scheme specifies ten levels at which a student's learning can be recorded; the OCEA scheme uses three entirely separate components; the CGLI scheme classifies fifteen abilities under four main categories, whereas the SCRE scheme 'Pupils in Profile', arranges their list of abilities (ability levels) into two main groups, 'Skills' and 'Performances' (see 2.5.2).

TYPES OF PROFILES OR RECORDS OF ACHIEVEMENT:

As mentioned previously there were originally five to six different types of profiles/records of achievement, (Mortimore and Keane, in Broadfoot, 1986 p69). However, with the advent of time and the increasing use of profiling, so the 'types' have evolved accordingly towards the 'master' or modular profiles developed in the further education sector. The modular type of profile

is particularly well suited to the pre-vocational and vocational training of the further education sector especially in consideration of their specific aims and objectives with respect to training for appropriate employment.

Only three of the fourteen schemes included in Table 2.6 do not have either pupil-teacher negotiated open reporting or pupil self-recording (NwTA, OCEA, and YTS). This factor sustains one of the initial 'promises' that the originators of 'profiling' and records of achievement schemes made, which was to ensure that students would be actively involved in their own profiles/records of achievement. The three schemes that do not have this type of student involvement have either a 'master' profile or operate on a modular basis. The reason for this difference is firstly that both these types of profiles/records of achievement have a large degree of student choice, which ensures similar active involvement on the part of the student. Secondly, they are all schemes developed for the further education sector where there is naturally less of an emphasis on self-assessment and more emphasis on the definite and appropriate abilities and personal qualities required for a particular occupation.

The use of comment banks, matrix and/or hierarchical grids and pre-specified checklists of items, are options that have 'grown' with the profiling movement. Some of them, in an effort to allow for a greater choice and degree of adaptability, have selected a fixed basis in specially designed software programmes. Naturally those options simultaneously save administrative time by ensuring quick and easy transcription of the numerous

parameters reported on by these types of profiles/records of achievement.

Evaluating the different 'types' of profiles or records of achievement it is apparent that all of them have definite advantages seen in the light of the contrasting situations in which they are employed. Equally, they all have incontrovertible disadvantages, when considered for use in different contexts.

FORMAT/STYLE OF PROFILES OR RECORDS OF ACHIEVEMENT:

The term 'format' or 'style' is the terminology used by the majority of authors to describe what is referred to as the 'function' of recording schemes by Stratton (1985) (in Broadfoot, 1987 p21). The summative record should be designed to "provide a final record and assessment of a pupil's achievement and abilities at the end of a course" (Evans, in Broadfoot, 1986 p173), whereas, formative records of achievement are "developed continuously over a period of time, regularly updated, and are intended to form an integral part of the learning process" (Evans, in Broadfoot, 1986 p173).

These distinct differences between the two formats/styles of records of achievement are stressed by most authors, especially Broadfoot who defines formative recording as a "process involving some discussion between teacher and pupil, affecting both the course to be followed and the pupil's progress" (Broadfoot, 1986 p235); and a summative record as "a compendious statement of what students have achieved during their time at school or college, designed in such a way that it may be useful to prospective

employers or establishments of further and higher education" (Broadfoot, 1986 p239).

However it is common for most systems to have a degree of both formats/styles with the relative emphasis given to each significantly influencing the ultimate framework of the scheme (Broadfoot, 1987 p19). This view of the importance of **both** formats/styles being used in the report is endorsed by the Department of Education and Science in the United Kingdom who contend that records of achievement should be both formative and summative (Mortimore and Keane, in Broadfoot, 1986 p73).

From Table 2.6 It can be seen that, without exception, all the schemes in the United Kingdom adhere to the Department of Education and Science's recommendation and produce a final summative assessment report while also using formative assessment as part of the teaching programme. In some instances, especially in computer-assisted schemes, the formative information may be collated to form part of the summative document. This is also in accordance with the Policy statement issued by DES in 1984, with regard to the format/style of records of achievement (see Chapter Three/Appendix M).

What is interesting to note is that four of the schemes originally chose to produce a summative document only, (see note 5 above). However it would appear that the benefit of formative records of achievement has since been acknowledged by the promoters of all the schemes.

CONTENT INFORMATION USED FOR PRODUCING PROFILES AND RECORDS OF ACHIEVEMENT:

Content is the one part of the various records of achievement schemes where there is the least common ground between schemes. Reasons for this have already been referred to, namely that the majority of schemes have been developed by staff from within the schools or LEAs with distinct objectives, hence the diversity, and as the schemes have gained momentum so more and more information has been added to the records.

It is of interest to note that virtually all of the schemes place emphasis on general and specific skills as well as personal achievements, experiences and interests. The degree of latitude is also still as important with the more recent schemes as it was with the first RPA schemes. This is indicated by the inclusion of blank optional categories which can be used at the discretion of either the school or institution, or the student. What is pleasing to note, is that all the schemes use cross-curricular skills in reporting their assessments which is precisely what prospective employers are looking for in a school or other leaving report.

Only six of the fourteen schemes make use of examination results within their final documentation. The reason for this is probably due to the fact that these schemes were originally introduced as a substitute for the lack of examination results, for most of the pupils leaving secondary school, and therefore they could not have been included in the final document. Nevertheless, over time,

the usefulness of reporting the results of examinations has been recognized, hence the use of these results, especially with those schemes developed by the further education sector such as the larger LEAs and the CGLI, OCEA, and the CPVE that also have external moderation or regional or national accreditation.

The importance of the above to the proposed pilot study to develop records of student achievement in technikon education, is that in all of the above cases not only was the reporting of examination results in addition to the other contents but the results themselves were not a part of the record as such, they were merely reported on in the traditional manner. The best example of this is seen in the OCEA scheme where the examination results are reported separately, as one of the three components of their scheme.

This separation of examination results from the rest of a profile report is supported by the results of work carried out in 1978 where the JMB, in the United Kingdom, undertook a study of A-level examination results with a view to reporting them as a profile. It was established that this was not feasible due firstly to problems with the reliability of the information. Secondly the differences in the results between individual candidates for each of the six subjects spread across the curriculum were insufficient to warrant the division. (Harrison, 1983 p13). (see earlier in this Chapter under 2.3). A possible reason for these problems was that the JMB (U.K.) attempted to profile the examination results after the examination had been written. In

other words there had possibly been minimal distinguishable differences in the original examination questions to start with, which was displayed once an attempt was made to profile them.

This aspect is important when one looks at the second to last category under 'contents', that of 'levels of achievement'. Apart from the SCRE and WJEC schemes, both of which are secondary school schemes from Scotland and Wales respectively, it is only the further education sector schemes, (ILEA, NWTa, CGLI, OCEA, and CPVE) that make use of levels of achievement with reference to their content elements or objectives. This is in all likelihood due to the fact that many of these further education qualifications were designed either with profiling in mind or adapted to conform to the basic requirements of 'profiling' and records of achievement.

VERIFICATION OF PROFILES OR RECORDS OF ACHIEVEMENT:

Although all the compared schemes use 'observed activities' to verify some of the content of the records, apart from the two schemes that are almost exclusively concerned with pupil self-recording (RPA and PPR) the rest also use either formal internal graded tests or formal external examinations (or in some cases both), as evidence of verification.

Those schemes that have pupil self-recording and/or open reporting sheets for pupil-teacher negotiated assessment also use 'self-reported activities' as evidence. However in most of these cases there is a further stipulation that

the 'self-recorded activity' is verified by a responsible adult (see 2.5.2).

Lastly, it is interesting to note that apart from RPA and PPR all the schemes compared have some form of external moderation or accreditation. Although it is not apparent from Table 2.6 this form of 'verification' does vary from scheme to scheme. Some of them enjoy national accreditation, as in the case of CGLI, OCEA, CPVE and YTS, whereas others have regional accreditation, for example SCRE, the WJEC, and the NWT A and most of the LEA controlled schemes which have local or county accreditation. What is also not apparent from Table 2.6 is the fact that without exception all of the compared schemes have in some way or another affiliated themselves to the proposals under the 1984 DES Policy Statement.

Despite the similarities and diversities in particular areas, it appears to be of paramount importance to the success of all the schemes, that the principle intention is to provide the students with records of their own personal achievements, whether academic or non-academic, with the primary purpose of aiming to improve the individuals' future.

2.7 DEVELOPMENTS OF RECORDS OF ACHIEVEMENT AS APPLIED TO HIGHER EDUCATION IN THE UNITED KINGDOM

The use of records of student achievement has been comparatively slow in the post secondary sector, despite the many and varied schemes that have

been initiated in schools throughout the world. One of the reasons for this situation is the observation that the wheels of education turn very slowly, especially when they have to toil against the historical influence of tradition. It is therefore consistent that in the area of further education, which is largely free of the constriction of historical tradition, records of student achievement have blossomed. A similar viewpoint is held by Broadfoot, in that she claims that it is this sector of the education system that "is most free to design novel assessment procedures which will reinforce its equally novel curricular goals" (Broadfoot, 1986 p19).

This move should be strengthened by the fact that schools and universities have begun to commit themselves jointly (as in the case of the OCEA) to schemes related to assessing educational achievement at the secondary school level. It is therefore time to take the process one step further, that is, to institute methods of reporting assessment in higher education that would result in similar records of a students' achievements which could (in time) be afforded the same degree of public recognition and accreditation.

To reinforce her claim above, Broadfoot states that it is fortunate that the growth of profiling has been assisted by new initiatives (see previously in this Chapter, 2.3 Groundwork from FEU, 2.4 and 2.5) from bodies involved in the further education sector such as the Manpower Services Commission (MSC), who have been associated with the Certificate of Pre-Vocational Education (CPVE), the Youth Training Scheme (YTS) and the Technical and Vocational

Education Initiative scheme (TVEI) together with the more traditional City and Guilds and Royal Society of Arts (RSA), where profile assessment is a characteristic feature of these qualifications (Broadfoot, 1986 p19).

In a similar vein Broadfoot asserts that the Certificate of Pre-Vocational Education (CPVE) "is likely to prove one of the most significant 'seed beds' for profiling" (Broadfoot, 1987 p118) due to the flexibility which allows it to be operated differently in each institution. Garforth and Macintosh also maintain that there are some "national course-related profiles whose number could increase as a result of developments in the Certificate of Pre-Vocational Education (CPVE), Technical and Vocational Education Initiative (TVEI) and the General Certificate of Secondary Education (GCSE)" (Garforth and Macintosh, 1986 p9). Most of these predictions by the various authors come about due to the fact that all of these schemes have an inherent versatility which permits them to be used differently in diverse institutions.

2.8 SUMMARY

It appears that a major feature of schemes and designs for profiles or records of achievement is that they address the present imbalance and inadequacies of the traditional methods of reporting on assessment. The final objective is that of providing an informative and varied report that could be considered to be of more value to consumers, prospective employers and pupils themselves than the traditionally accepted academic report.

Together with the main objective it must be remembered that these proposals and schemes require new and sometimes radical re-organisation in education with novel tasks for students, teachers and parents. If these changes are not taken into account from the start, the records will become burdensome and that might signal the end for 'profiling' and records of achievement. This forecast is further underlined by Burgess and Adams who claim that the promise of these schemes can only be realized if the teachers and schools are resourceful and if the records and recording schemes give credit for what students have achieved, and do not become merely another set of marks or grades to add to the existing practice (Burgess and Adams, in Broadfoot, 1986 p77 [Author's emphasis]).

In regard to the foregoing, it is the author's proposal that the use of different levels of achievement to be attained by candidates in an examination could allow for meaningful diversity that could in fact be adequately reported on in records of student achievement. It is this proposal which will be expanded on in the following Chapter.

Finally it is suggested that any practical implementation of records of achievement in the technikon situation could avoid many of the above problems to a large extent by taking cognizance of the difficulties and warnings given by those who have executed such schemes in both the secondary and further education sectors. Most especially, heed should be taken of the counsel to ensure that, at the time of the proposed

implementation, all who are to be involved in the scheme **know** what to do and are **fully** aware of what will be expected of them.

CHAPTER THREE

PROPOSED RECORDS OF STUDENT ACHIEVEMENT

3.1 INTRODUCTION

When considering any new proposal in the realm of assessment it must be borne in mind that the "aspects of pupils' performance that schools choose to assess reflect very clearly the functions a particular educational system is required to fulfil" (Broadfoot, 1979 p11). If this is the case, it follows that there could be an invitation to institute records of achievement schemes in tertiary education to better fulfil the function of reporting on assessment. It is the tertiary sector of education that has, as one of its roles, a primary responsibility to the job market which, as was outlined in Chapter One, badly needs the kind of information that can be provided by using records of achievement to report the results of student assessment.

The above invitation should be bolstered by the consideration that it should be a relatively easy task to develop an appropriate scheme to establish the use of records of achievement to report the results of assessment at technikons. Technical training at the secondary level began in South Africa as early as 1884 with the start of the Natsale Spoorweë in Durban. This was followed in 1890 and 1897 by respectively the Kaapse Spoorweë in Salt River

and the De Beer-mynmaatskappy in Kimberley. Subsequently, ensuing developments in education culminated in the Act on Advanced Technical Education in 1967 that renamed the four existing large technical colleges in Pretoria, Johannesburg, Durban and Cape Town as well as a further two in Port Elizabeth and the Vaal Triangle as Colleges for Advanced Technical Education. The promulgation of Act 43 of 1979 adjusted the level of training given at what had been previously known as Colleges for Advanced Technical Education to tertiary and the colleges became known as Technikons.

Therefore without a long record of educational tradition and with the chequered history as outlined above, there should be little impediment to change; especially as the proposal is not really a change as such, merely a supplement to the methods currently in existence. Similarly, as with the CGLI, RSA, CPVE, YTS and other comparable training programmes in the United Kingdom, technikons in South Africa also train students for technical careers. This makes them ideally suited to the development of a system of reporting student achievement as a means of improving the information available to staff, the students themselves and prospective employers.

A second factor in favour of the relative ease of introducing a different reporting system into technikon education is that various associations and group training centres have embarked on corresponding developments. The Association for the Study of Evaluation in Education in Southern Africa (ASEESA) was established in 1974 primarily with the aim of stimulating

interest in the study and problems of assessment and evaluation (Shaw, 1991). Comparably the Johannesburg Consolidated Industries (JCI) group training centre endorses a scheme of reporting assessment differently. One of the parameters of their programme is the formation of a continuously updated Development Record for each graduate to "systematically track his progress but also so that at the end of 2 to 3 years he will have the necessary documentation for registration as a professional engineer" (Krige & Duke, 1992 p20). This practice has recently spread to a number of secondary schools in the Cape Peninsula, who have introduced modified assessment profile reporting systems as records of ability.

The scheme of reporting student achievement that would be introduced into the Department of Biological Sciences - Horticulture - at the Cape Technikon, would be known as **Records of Student Achievement** with the acronym of **ROSA** to distinguish it from past and present schemes in the United Kingdom and other parts of the world.

3.2 ESTABLISHING THE ACCEPTABILITY OF ROSA

At this stage, it was considered that it would be appropriate to establish what records of achievement could accomplish for students while still remaining within the context of the Horticulture section's current system of assessment. The proposal was to split the study into three dimensions that correspond roughly with the three principal bodies interested in assessment in education;

the students, the prospective employers and the teaching staff.

3.2.1 SURVEY OF STUDENTS

In order to establish the benefits that a system of records of achievement may have for students it was submitted that student opinion should be canvassed, firstly by means of a questionnaire, and secondly through informal class discussion. The aim of the questionnaire would be to assess the opinion of all students as to the need, desirability and, from their perspective, the potential use of formative and/or summative records of academic achievement.

It was planned that the questionnaire would be designed to be given to a total of 243 students, all of whom were currently registered in the Department of Biological Sciences at the Cape Technikon. These were first, second and (as the diploma was then structured), third semester students, as well as higher diploma students in both the Horticulture and Nature Conservation sections of the Department of Biological Sciences. The horticulture diploma referred to above was changed in 1991 from three semesters tuition with three semesters experiential training to four semesters tuition with two semesters experiential training.

The suggestion was that prior to completing the questionnaire the students would be given a brief preamble (Appendix A) which would define the aims, contents and the proposed method of compiling the records of achievement.

Following this explanation the students would be asked to complete the questionnaire (Appendix B). It was further suggested that this should take place in the last week of lectures in November 1991, in order that the results of the survey (if positive) would be available in time to prepare to launch the proposed project early in 1992.

In order to further appraise student opinion, it was proposed that the author would suggest one period for informal class discussions, or more if the demand warranted it, with reference firstly, to the questionnaire and secondly to the proposed project itself.

Finally, it was recommended that those students who were currently in their final third semester, the higher diploma students, as well as all of the Nature Conservation students, should be warned to bear in mind that they would not be involved in the proposed project. However their viewpoint was required in order to gauge as broad a student opinion as possible. All the other students (future third and fourth semester for 1992) would be told that, depending on the outcome of this survey and other research, it might be possible that they would be asked to participate in the proposed pilot project in 1992.

3.2.2 SURVEY OF PROSPECTIVE EMPLOYERS

The following proposal was aimed at establishing the opinions of potential employers of horticulture diplomates as to the usefulness of the proposed

ROSA. A second questionnaire was compiled (Appendix C) and it was planned that it would be posted out, together with a reply-paid envelope and a covering letter (Appendix D) explaining the basis for the proposed research project. The aim was to mail the questionnaires to as wide a cross-section of potential employers of horticulture diplomats as possible throughout South Africa.

3.2.3 PERCEIVED BENEFITS FOR TEACHING STAFF

It was anticipated that there could be benefits for teaching staff as a result of using records of achievement schemes as a means of reporting the results of their student assessment. Due to the fact that the author was unable to interview any teaching staff with a working knowledge of, or experience in, the use of records of achievement schemes in tertiary education in South Africa, it was proposed that a review would be made of the benefits for teaching staff as given in the literature by various authors, many of whom are also teaching staff.

Although details and, significantly, numbers of motivations vary from scheme to scheme and hence from author to author (see Chapter Two) the main chronicled benefits for teaching staff for utilizing records of achievement schemes remain constant throughout. Fundamentally, these are associated with the fact that the assessment itself becomes a more detailed and constructive activity. (Broadfoot, 1987 p17). This is of immense benefit to

the teaching staff as more detailed results can more clearly indicate to each teacher the extent to which their teaching has been effective and in which areas of the syllabus more or possibly less detail may be required.

Essentially, the motivations for all the benefits of reporting on assessment by means of records of achievement reflect very closely the variable reasons that have, over the years, been put forward for assessment itself. Consequently, it was suggested by the author that the benefits that could be obtained would be almost identical especially since the proposal that will be considered is to simply transcribe the results of established assessment into more detailed records of achievement.

With regard to the proposed review, it was reported in Chapter One that Rowntree emphasizes six main reasons for assessment (Rowntree, 1981 p178-179). The author suggests that the use of records of achievement schemes could benefit all six. If, for example, the records were to report in more detail the results of students' achievements it could enable the teacher to see exactly where a particular student's strengths and weaknesses lie, which could in turn aid in improving student selection. The additional detail could also be of significant assistance to the teaching staff in the preparation of the customary mid- or end of term and/or semester reports to the students' parents or sponsors.

The same could be said of the facility to pinpoint areas of importance for not

only feedback from the teaching staff to the students but as self-evident feedback to the students themselves to motivate them to maintain or improve their marks. This could transfer some of the onus of student motivation from the shoulders of the teaching staff to the students themselves.

Crooks in his book 'Assessing Student Performance' gives an additional role to assessment, that of evaluating the teaching by focusing on the performance of the whole class. According to him, by examining how well class members have grasped certain key concepts and whether or not there is any confusion or any misconceptions can indicate whether or not there are problems that may have arisen during the teaching procedure (Crooks, 1988 p9).

In a slightly different approach Harrison concerns himself with the workload generally associated with records of achievement. He queries whether the extent of the merit or worth derived by the various interested parties warrants the extra work involved in profiling examination results. Fundamentally what Harrison is asking here is, with all the difficulties that have up to date been experienced in content definitions, technical requirements, testing procedures, and time (see Chapter Two), are there in fact a sufficient number of good reasons to make the profiling of examination results worthwhile? (Harrison, 1983 p37).

Although his answer is tempered by the obvious drawback to profiling only

the final examination results, Harrison affirms that "there is great value in profiles for diagnostic purposes, both for pupils and teachers" (Harrison, 1983 p37). It is this diagnostic benefit to teachers that has been referred to before by other authors that marks what is, in the author's opinion, the greatest benefit to teaching staff from the use of records of achievement to report the results of assessment.

The influence that teachers have on the ultimate course of a student's career can often be overlooked. Analogous to this is the consideration of the possibility that records of achievement schemes could assist a teacher in helping a student to contemplate and select an appropriate avenue within a specific vocation. In this respect Harrison states that "information about skills related to a particular element (such as practical or oral work) which did not show in the overall grade might help an applicant for a particular job or course in which these skills were required" (Harrison, 1983 p37).

3.2.4 PROPOSED BENEFITS FROM THE IMPLEMENTATION OF ROSA

As can be seen from the above as well as the literature survey in Chapter Two there are varying perspectives held by teaching staff as to the possible benefits of schemes of records of achievement. On the basis of these it was proposed by the author that apart from the main consideration of the provision of more useful information to potential users in the horticulture and allied industries in South Africa, consideration would also be given to the

following possible benefits from the implementation of ROSA:

- * the enhancement of the student's ability to learn, and understand what has been learned, through the incentive of self-competition which might be engendered by ROSA;
- * the encouragement for each student to become fully responsible for his/her own learning;
- * the fostering of the self-esteem of the individual student;
- * the fostering of the student's ability to self-criticise both his/her individual effort - input as well as the standard of their own, and the course work;
- * the cultivation of good, productive lecturer-student relationships;
- * an improvement in the relationship between assessment, learning and the curriculum.

It was therefore contemplated that, based on the anticipated results of the two questionnaires, together with the views of various authors the introduction of ROSA would be justified. [The author would like to point out that this pilot project to develop and implement records of student achievement in technikon education was undertaken in 1991 and that the design was informed by developments in the field of profiling and records of achievement prior to that date (see Chapter Two)].

3.3 DESIGN OF ROSA

According to Broadfoot the three main elements with which educational assessment is concerned are, "assessment for curriculum; assessment for communication; and assessment for accountability" (Broadfoot, 1987 p5). On the basis of this it was proposed that the main purpose of the pilot project of ROSA would be primarily based on assessment as it pertains to communication; with the principal objective of aiding in the selection and placement of students, as this had appeared to be the element most unfulfilled by the current methods of reporting assessment.

[The author would argue that it is likely that the proposed project, if implemented successfully, could influence the remaining two elements mentioned by Broadfoot as well].

It was decided when proposing the design, that as a basis, attention would be given to Broadfoot's suggestion that records of achievement should take into consideration the following three components of:

- * justice
- * relevance of information (both formative and summative)
- * practicability (Broadfoot, 1987 p14).

The intention was that the design should result in practical, useful records of achievement that should contain as wide a range of information as would be

useful to all potential users. Secondly the information should be reliable and relevant and thirdly the recorded information should be easily collected and simply interpreted once assembled.

With the above in mind it was proposed that the design of ROSA would encompass the following aims and objectives, which partially reflect those that have been suggested by Broadfoot (1987 p17-18) (see Chapter Two).

- (a) to be the basis of a learning contract in which the lecturer and the students jointly agree to learning objectives;
- (b) to be diagnostic, by providing details of the student's progress in the course, and using feedback as a basis for corrective action;
- (c) to recognize achievement, whereby it was anticipated that the records of achievement could enhance student motivation and self-respect;
- (d) to be the basis of the usual report sent to parents and sponsors and the basis of a report for all other interested parties, such as potential employers and other tertiary institutions, by providing a more comprehensive picture of the student's total achievements.

Prior to establishing the proposals for the design of ROSA it was deemed necessary that the problem of referencing should be addressed. Traditionally norm-referenced assessment, such as examinations, have predominated over both ipsative and criterion-referenced assessment in higher education. This

has been attributed partly to society's preoccupation with competitiveness and partly to the fact that norm-referenced examinations afford "discrimination between candidates, and a high degree of reliability and legitimacy in the eyes of the general public" (Broadfoot, 1987 p7 [Author's emphasis]). It is interesting to note, therefore, that in the opinion of Hambleton criterion-referenced tests "are presently receiving extensive use in schools, industry, and the military in the United States because they provide information which is valued by test users and different from the information provided by norm-referenced tests" (Hambleton, 1990 p113).

According to Hambleton, one of the original "articles on the topic of criterion-referenced testing appeared in the *American Psychologist* (Glaser 1963)" (Hambleton, 1990 p113). Glaser was interested in "assessment methods that would provide necessary information for making a number of individual and programmatic decisions arising in connection with specific objectives or competencies" (Hambleton, 1990 p113).

Similarly, Popham (1978) stated that criterion-referenced tests "are constructed to permit the interpretation of examinee test performance in relation to a set of well-defined competencies" (Hambleton, 1990 p113). In Hambleton's estimation, "there are three common uses for criterion-referenced test scores: (a) to describe examinee performance, (b) to assign examinees to mastery states (e.g., "masters" and "nonmasters"), and (c) to describe the performance of specified groups of examinees in program evaluation studies"

(Hambleton, 1990 p113).

For these reasons it is clear why Nuttall and Goldstein suggest that "for both profiles and graded tests, criterion-referenced assessment is commonly *advocated*" (Nuttall and Goldstein, in Broadfoot, 1986 p186). A similar sentiment is echoed by the National Union of Teachers (NUT) in the United Kingdom who presented the NUT discussion document on pupil profiles (NUT, 1983) which expressed the strongest support for criterion-referencing while still recognising that in practice there would have to be a balance between norm-referencing and criterion-referencing (Evans, in Broadfoot, 1986 p177).

With this as background, the proposed Records of Student Achievement in this project are described as reports recording the results of an individual student's assessment in greater detail than is usual. However, because they merely report the *results of traditional (norm-referenced) assessment* in a different way they cannot be classified as criterion-referenced in the same way as some of the previously reported schemes (see Chapter Two). It was therefore proposed that for the purposes of comparability each reported record, would be referenced to the class averages for each of the particular courses within each semester (see later 3.3.3).

Finally, the proposal for the design of ROSA was to appraise the various contents as well as the format/style of different records that were currently being used and lastly consider suitable methods of presenting the final report.

3.3.1 PROPOSED CONTENT INFORMATION OF ROSA

From the beginning it was submitted that unlike many of the various profiles and records of personal achievement reported on in Chapter Two, this pilot project was primarily concerned with proposing a different method of reporting the results of existing assessment in the form of Records of Student Achievement (ROSA), without any reference to personal information.

The above decision regarding the exclusion of personal information from the proposed ROSA was necessitated by the fact that, typically, a large number of lecturers are normally associated with the student over the standard four semesters with a relatively short period of time and hence association (6 -12 months) for each subject. For this reason, it was recommended that for this project it would be invalid to try to include information on personal qualities. This decision was taken, even though it had been clearly established that in the United Kingdom and South Africa this type of personal information was in fact 'part and parcel' of what was desired by prospective employers (see Chapter One).

Moreover, in taking the above decision to exclude personal information from ROSA, cognizance was also taken of the customary practice of supplying diplomates on completion of their studies with a departmental testimonial covering their duration of study, which was felt to cover some of those personal aspects.

Secondly, with regard to the contents it was decided that the pilot scheme must reflect the projected final proposal as closely as possible, especially if there was going to be any thought of expanding the scheme to the Cape Technikon as a whole and potentially to the broader spectrum of higher education in South Africa. With this in mind the proposal was to select and include only those contents presented in Table 2.6 in Chapter Two that would be able to be adapted relatively easily to all subjects and disciplines taught at technikons.

Consequently it was suggested that the contents that would fulfil the above parameters would be the following:

- * general skills required in the particular subject/discipline;
- * specific skills acquired in the particular subject/discipline;
- * specific abilities accumulated as a result of the above skills;
- * examination results on the subject/discipline;
- * content elements of the subject.

Finally it was planned that two central factors would form the backbone of the proposed records of achievement which would be derived in the following way. The reports on the results of the assessments would be founded firstly on previously defined elements within each of the subject-specific topics (see 3.4.2). Secondly each of the defined elements would be related to one or more levels of achievement (see 3.4.1). The intention was to obtain the relevant raw data for ROSA by analysing the results attained by each student

in each of the elements, at each level of achievement for the topics that had been assessed via the usual tests, assignments, projects and tutorials, as well as the final examinations.

3.3.2 PROPOSED FORMAT/STYLE OF ROSA

The second issue, that had to be decided was that of the proposed format or style of the record. The terms 'format' or 'style' of records of achievement refer to the function for which the records are designed. Usually the records are intended for a specific reason and depending on the reason the design will be different. (The terms 'format' and 'style' are used synonymously in the literature, but Stratton, (1985) uses the term 'function' to describe the ultimate intention or use of records of achievement).

Basically the three options that can be considered are, **formative, summative or both**, with the decision resting on the ultimate intention of the record. Rowntree describes formative assessment as, "using assessment to help form the students' learning" and summative assessment as "using the assessment results to sum up and report on what is known of the student" (Rowntree, 1981 p221). Essentially then where the profile is formative the primary audience is internal and where it is summative the primary audience is external, including those concerned with guidance and selection.

Taking the obvious differences apart, it was submitted that when considering

the proposed format/style for ROSA neither formative nor summative records of achievement would be worth as much on their own as they would be jointly but reported separately as two distinct documents. This was in accordance with Evans's views that "a summative profile might of course be based on a formative profile, but it is unlikely that a single document can perform both functions" (Evans, in Broadfoot, 1986 p174).

There is also a problem when the single document is the summative record of examination results only (see 3.2.3). On its own, one would have to agree with Harrison's statement (1983 p37) that under those circumstances a summative report would obviously have no feed-back action. It is important to note that Harrison's comment was in regard to **profiled final examination results** being too late for corrective action. The fact that profiled examination results should not stand alone but should form a part of summative records of achievement is corroborated by Hitchcock who states that "the incorporation of existing assessment and reporting procedures offers the opportunity for both school and pupil to benefit from the keeping of fuller, more accurate records. This in turn leads to a more complete summative report" (Hitchcock, in Broadfoot, 1986 p153).

Baumgart is also of the opinion that there is a conceptual problem with the relationship between summative and formative records of achievement. He states that "in the literature on profiles, clear conceptual distinctions are made between formative and summative profiles, but it is a dubious assumption

that the latter can be compiled through some simple aggregation or condensation of the former" (Baumgart, in Broadfoot, 1986 p48). This same point is also referred to by Willmott in discussion about the specific intention of the three components that are used to produce the final OCEA records (see Chapter Two). According to him the particular components in the OCEA records are intended for different key people and that this "raises the issue of the formative/summative link and the fact that the formative documentation is not the summative document" (Willmott, in Broadfoot, 1986 p130).

To add to the 'confusion' in summarizing a number of authors with regard to the formative-summative dichotomy Lewy claims that "two decades of utilizing these terms produced little consensus concerning their distinct features" (Lewy, 1990 p28). According to Lewy, Scriven, who is the originator of the two terms, defines formative evaluation as evaluation that can be conducted **during** the improvement or development of a programme and summative evaluation as that executed **after** the programme has been concluded usually for the interest of an external audience. In essence both are intended to evaluate the merit of a particular entity with the only important variances being the timing, the audience requesting the evaluation; and the way in which the results could be used (Lewy, 1990 p27).

Therefore, after careful consideration of the above it was suggested that authentic records of achievement could only be justifiably implemented if they served **both** purposes by having **both** formative and summative formats/styles,

although not in the same document. Accordingly it was proposed that the pilot project of ROSA in the Department of Biological Sciences would include both formative and summative functions. However, the greater emphasis would, in the initial stages, be placed on the summative function, as this was considered to be the area that seemed to contribute to the major problem that this thesis was trying to address -the lack of sufficient detailed information on student achievement being freely available to prospective employers.

[The above decision was analogous to that taken by the original designers of some of the schemes shown in Table 2.6 in Chapter Two (see note 5). When some of those original schemes were first initiated the emphasis was on producing a summative document. However, with the passage of time all of them ended up including the formative format/style. It is envisaged that a similar situation might occur with this pilot study].

Additionally, it was proposed that the recommendation would be for the formative component of the record to report the individual student's score at each of the three levels of achievement against the discrete elements (see 3.4.2) defined from topics within a syllabus. The norm-referenced 'balance' referred to by NUT above (see 3.3) would be provided by the traditional method of reporting the test, assignment, project and examination results with a comparison to the performance of the group as a whole.

Finally, it was contemplated that the main emphasis of a fully implemented

scheme would be to provide first, second and third semester students with **formative** records of achievement, while it was anticipated that the final fourth semester students would receive **summative** records of achievement upon completion of their diploma.

3.3.3 PROPOSED PRESENTATION OF ROSA

The last aspect to be considered was the presentation of the final report. The majority of the schemes reviewed in Chapter Two not only reported on a wide range of contents (up to as many as twelve), but most of them also used two or more diverse types of reporting which was subsequently verified by as many as three or four different procedures (see Table 2.6, Chapter Two). The net result of this is that the ensuing document became relatively bulky, in some instances over five pages in length (see YTS).

Since one of the primary objectives of the pilot project was to introduce records of achievement as an aid to prospective employers for student selection it was proposed that at this stage it would be disadvantageous to have either a lengthy or an involved document. In addition it had already been proposed that the records of achievement would currently only reflect the results of academic assessment (see 3.3.1) and it was envisaged that this information should not exceed one page.

As a consequence of the above the recommendation was to produce shaded

computer-generated histograms reflecting the individual student's performance on the three levels of achievement, with class averages provided by way of comparison.

If at a later stage the offer of ROSA was accepted by the whole technikon, these computer-generated histograms would allow for uniformity as well as comparability between reports produced for students registered for particular courses or semesters within the various disciplines. It was also thought that this type of system is inherently adaptable and would therefore permit different lay-outs to be easily evolved. Eventually each system could be associated with a particular diploma or even identified with a specific faculty at the technikon.

In the interim period it was proposed that the computer-generated histograms could easily be inserted into a personal portfolio. The student may also record particulars of extra-mural activities and/or sporting and other achievements as well as final examination results to make the portfolio a more complete report of their personal achievement; i.e. a supportive document to their curriculum vitae.

Finally, taking into consideration that ROSA would be a personalised document, it was envisaged that it would be the property of the individual student and as such it was suggested that it would be given to the student in conjunction with his/her traditional end-of-semester final examination

results. As was recommended by the 1984 DES Policy Statement in the United Kingdom, it was also decided that the student would retain the right to decide whether or not to show it to prospective employers and others, while the Cape Technikon would reserve the right to hold the master copy, a copy of which would be supplied to a third party only with the specific student's written permission.

3.4 PROPOSED IMPLEMENTATION

The recommendation was that the records of achievement reports would be derived from 'separating' all of the currently subsumed marks that form the traditional final assessment mark or grade as it is familiarly reported. In other words instead of merging all separate assessments into a final mark or symbol the records of achievement would retain the marks or symbols of performance separately and would categorize them in terms of levels of ability or achievement.

From the perspective of purely using examination results for this, Harrison suggests "building up the profile" by "extracting the relevant assessments from each paper and gathering them together into elements which are to be reported on separately" (Harrison, 1983 p33). However it has already been mentioned that to 'profile' examination results 'after the event', is not only rather difficult in terms of defining the content elements and distinguishing the levels of achievement but that it has been previously proved to be not worth

the effort (see 2.3).

Consequently, it was proposed that in order to accomplish this separation, the marks achieved by each student from all of the methods of assessment - tests, tutorials, projects, assignments as well as the final examination(s) - for the individual subject (throughout the appropriate period of study, in this case a semester) would be re-apportioned. The re-apportioning would take the form of dividing the marks which would then be allocated to different levels of achievement within pre-determined elements of the specific subject or topic (see 3.4.1 and 3.4.2). This proposal was consistent with Crooks' suggestion that it is often "useful to classify assessment items on two different dimensions: the topic or section of the course to which the item relates, and the type of skill which the student is asked to display" (Crooks, 1988 p18).

However it was envisaged that, if calculated retrospectively, as suggested by Harrison above, the procedure would be exceptionally time-consuming. (The effects of this were highlighted in Chapter Two (2.5.2) Impact of DES on schemes and (2.8) Summary). So the recommendation was for the various methods of assessment to be classified into the appropriate levels and elements prior to being given as an assessment to students. This would facilitate the proposed marking and allocation of separate marks to each element and level of achievement.

Notwithstanding the above proposal, it was recognized from the beginning

that this pilot project would in all probability encounter certain administrative problems when it came to implementation. One of the first problems that would have to be considered would be the problem of the author's allocation of time to, for example, student feedback. It is one of the underlying principles of existing records of achievement schemes in the United Kingdom that 'the individual student' is acknowledged as such, in contrast to being an 'examination number'. Quite obviously in a class of sixty plus students (not uncommon in tertiary education) this could create problems of insufficient time. "Hitherto, education has been a matter of classes, forms, sets and streams. The individual has been overlooked. There has been too much acquisition and repetition of inert knowledge, too little development of competence and capacity" (Burgess and Adams, in Broadfoot, 1986 p80). This unfortunately is very true, and it is partly because of it that the various schemes of individual records of (diverse) achievement have been received with such enthusiasm. However, it was this emphasis on the individual as such, that could, introduce some practical problems.

The author's fears were supported by Hargreaves who states that the "problem of finding teacher time for records of achievement has already been widely discussed in the literature on pupil profiles..... and is one that Her Majesty's Inspectorate have also identified as placing major constraints on teachers' involvement in innovation more generally" (Hargreaves, in Broadfoot, 1986 p221).

Broadfoot gives a break-down of the hours spent on pupils' records from a secondary school in the United Kingdom across a range of thirteen different subjects as: 17,5 hours spent at departmental meetings, 94 hours spent compiling comment banks, 35 hours spent by form tutors and 210,75 hours spent writing the profiles; the total 'extra' time was 357,25 hours for 151 pupils in their fourth year (Broadfoot, 1987 p83).

In addition, there is a second part to the above obstacle of time and that is that nearly all the reported schemes lay a great deal of importance on either the range or the levels of abilities to be recorded from the numerous assessments. This was also noted by Her Majesty's Inspectorate (HMI) who remarked on the "difficulties of undertaking sustained evaluation and planning of the curriculum *and at the same time* meeting the pressures and demands of teaching and administration in a school" (Her Majesty's Inspectorate, 1983 p16).

Therefore it was suggested that there might have to be certain re-adjustments made to the method of presenting the statutory contents of certain syllabi in order to obviate the constraints of time. This recommendation becomes especially significant if the size of classes that are normally accepted into tertiary education is taken into account. This suggestion is consistent with Hargreaves's comment that "unless teacher-pupil ratios are substantially improved and non-teaching periods increased, one might expect,..... that shortage of time over and above that allocated to ordinary class demands will

create major problems for teachers and schools in the administration of records of personal achievement" (Hargreaves, in Broadfoot, 1986 p221).

In a review of all the constraints that need to be considered when introducing records of achievement systems, Hargreaves claims that it is essential that "schools are provided with sufficient resources and teachers with sufficient time to administer personal recording with the sensitivity it requires" (Hargreaves, in Broadfoot, 1986 p222). This belief conforms to Mansell's statement that difficulties "will not be resolved without some re-allocation of teachers' time. This calls for a re-appraisal of teaching priorities, strategies and timetabling" (Mansell, in Broadfoot, 1986 p29).

Accordingly it was proposed that implementation of the pilot scheme would be undertaken by the author only, and that definite records of time would be kept throughout, in order to establish the actual extent of this potential obstacle. The objective for this was twofold: one to accurately verify the requirement of additional time and two, to try to evolve measures to reduce the need for additional time.

3.4.1 LEVELS OF ACHIEVEMENT

According to Entwistle students come into "higher education with different beliefs about what learning itself actually involves" (Entwistle, 1992 p597). The results of an interview study on 'learning' carried out by Säljö (1979), on

adults with a wide range of ages and educational backgrounds produced a hierarchy of conceptions of learning as developmental change, these were as follows:

"Reproducing

- A. Increasing one's knowledge
- B. Memorising and reproducing
- C. Applying facts and procedures

Transforming

- D. Understanding
- E. Seeing something in a different way
- F. Changing as a person" (Entwistle, 1992 p597).

This hierarchical list translates into a discernment that "understanding depends on transforming the knowledge presented by relating it to what is already known and making sense of it in personal terms" (Entwistle, 1992 p597). However it is seldom that the above would be perceived by students entering tertiary education; rather the situation is that students "study with blinkers, paying attention only to what might be examinable" (Pastoll, 1992 p3). Consequently, it was submitted that to make clear distinctions between levels of achievement apparent to students, within the existing forms of assessment, might encourage a deeper level of learning, as well as provide a better means of reporting the results of assessment.

Crooks claims that the majority of schemes to determine levels of

achievement are derived from the six categories of intellectual activity that were identified by Bloom and his colleagues (Bloom, 1956). However while the six categories make good theoretical sense, according to Crooks "many people who have tried to use them to classify the skills demanded by assessment items have found it difficult to distinguish among the higher categories" (Crooks, 1988 p18). As a result of this Crooks suggests that the categories can be compressed from six to three but warns that this should only apply to assessment of intellectual skills as additional categories would be required, for example, for interpersonal and physical skills (Crooks, 1988 p18).

It is clear from Chapter Two that different schemes have developed a number of different levels that could, by their terms of reference and for their own educational objectives, distinguish definite achievement within elements of the assessed topics. Nevertheless, none of the researched schemes would fit in with the objective of this pilot project. It was therefore decided that for ROSA, the proposal would be to establish a system with three levels of achievement, that could be easily defined (as per Crooks), that would be suitable in tertiary education and adequately reflect the intention of more detailed reporting on the results of assessment.

At this stage of the pilot project it was considered that the following three levels of achievement could be described with relative ease from the existing methods of assessment;

Level 1 Knowledge

Level 2 Application (of that knowledge gained from level 1)

Level 3 Evaluation (which was deemed to subsume analysis
and synthesis).

These partially reflect those suggested by Crooks which are;

1. "Recall or Recognition"
2. "Comprehension or Simple Application"
3. "Critical Thinking or Problem Solving" (Crooks, 1988 p18-19).

[Note: the author would like to record that the preference, as given above, to use broad, evidently distinguishable levels of achievement, was decided upon despite the modern tendency in the natural sciences to move away from Bloom's specific classical taxonomy and towards the skills that have been listed under the science processes. The reason for this decision was firstly that one of the author's stated aims (see Chapter One) was to ensure that the developed system would be both relevant and useful to prospective employers. In the author's opinion this implied that employers, who could be lay-public coming from different backgrounds, should all be able to use the system effectively, clearly understanding the different skills required to fulfil the parameters of each of the three chosen levels.

Secondly, as mentioned above, Crooks states that considerable difficulty, especially with the higher skills, has previously been experienced (Crooks, 1988 p18). In consideration of the aim to develop a system that could be

used throughout the technikon, the author wished to ensure that ordinary teachers, who may not have had the benefit of progressive didactic principles, would find the system user-friendly, it was decided to employ a structure similar to the one used by Crooks].

The proposal was for the author to systematically grade as levels one, two or three all the elements (see 3.4.2) with regard to the skills that are being assessed also taking into account how each element related to the course contents (syllabus). This meant that the levels of the learning skills could not be graded in isolation when setting the assessments. Rather the levels would have to be selected to adequately represent the learning tasks, within the teaching-learning environment. If the assessment was to be graded in the above way it follows that the teaching **would have to reflect** these chosen levels, and not, as is very often the case, simply level one (knowledge). According to Crooks "the assessment in many tertiary courses tends to overemphasize recall or recognition of course material". He goes on to say that knowledge which "is not associated with genuine understanding and/or skills in applying the knowledge is of little enduring value" (Crooks, 1988 p19).

An illustration of what is proposed in grading the elements (see later 3.4.2) within each topic into levels of achievement can be taken from the Plant Protection A course. Firstly the various topics would be demarcated from the syllabus. For instance the insect alimentary canal (digestive system) could be

considered (from the syllabus) as a separate topic. Some of the elements within this topic would be 'feeding', 'assimilation', 'growth and development' and 'chemical control'. Those questions that require the student to name, draw, or describe the insect's digestive system or mouthparts would be graded as level one. Questions that require different types of food plants and methods of feeding and ingestion to be related to extent of observable (or described) plant damage, would be graded as level two. Lastly, those that require the development of an effective, situation-specific spray programme, based on insect characteristics of mouthparts, absorption in the alimentary canal and economic damage levels would be graded as level three.

It is clear from the above proposal that grading into levels of achievement previously constructed test questions, as well as other forms of assessment such as projects and assignments and of course examination questions, would require a deep insight into and extensive knowledge of the subject content itself. Understandably, the same would be true with regard to the formulation of new questions, projects and other assessment material. This observation supports the suggestion (see 3.4.3) that for the pilot project only the two subjects with which the author is fully conversant could be used. The plan for only the author to be involved in the pilot project is corroborated by Crooks, who states that grading of levels "must be done by the teacher, or at least in close consultation with the teacher, because many items can only be properly classified by considering how the item relates to what was covered in the course" (Crooks, 1988 p19).

3.4.2 DESCRIPTION OF ELEMENTS

One of the motivations behind the movement to develop records of achievement has been to provide students, teaching staff and prospective employers with more detailed information on the results of student assessment. The method of providing this supplementary information as proposed required some form of breakdown of the global marks that are conventionally obtainable from student assessment.

The term 'element' was originally recommended by Harrison to describe the "parts which form the profile", he claimed that they could be "skills (such as the use of calculators), tasks (asking for a cup of coffee in German), methods of working (a science practical), an aspect of the subject (mapwork in Geography) or an objective as classified in a taxonomy (Comprehension)" (Harrison, 1983 p17).

It was suggested that Harrison's description of elements most closely fitted what was proposed for the pilot project for the authors' own subjects. Similarly, it was considered that the term would probably also be appropriate for other subjects and courses at the technikon if the proposed project was to be extended in the future.

Table 3.1 shows the proposed recommendation for defining the individual elements within separate topics from the Structure and Function section of

the course known as Plant Protection A.

TABLE 3.1

DEFINING ELEMENTS FROM A COURSE SYLLABUS

Plant Protection A syllabus: Part 1 - Structure and Function	
TOPIC	ELEMENTS
* Insect integument	structure, composition and coloration; advantages and disadvantages.
* Insect tagmata	head, thorax, abdomen - functions; feeding, movement and reproduction.
* Insect morphology	mouthparts, legs, wings and genitalia; adaptations to micro and macro environment.
* Insect alimentary canal	feeding, assimilation, growth and development; chemical and autocidal control, damage levels.

It was apparent that the defined elements were virtually identical to the divisions typically employed by teaching staff derived from lecturer's guides to design the standard methods of assessment such as tests, projects, assignments etc. This feature was considered significant to the planned project for two reasons. Firstly, it sustained the original recommendation with regard to the intention to retain virtually all the existing forms of assessment that had previously been established in the department. Secondly, the above example (Table 3.1) depicts a relatively broad way of dividing the various topics into elements. This is in accord with Harrison's view that problems can be encountered if there are too many elements. In discussing examination syllabuses he states that they can "become more unwieldy and difficult to interpret as they become more detailed, and the same problem of

interpretation applies to elements in a profile" (Harrison, 1983 p23). Nuttall concurs by stating that attempts by Cambridge Schools Examination (CSE) boards to specify grade descriptions have also incurred problems. These being that at the one end, they are "so general and so vague that they can be safely ignored, and at the other by being so detailed that they can neither be assimilated by examiners or employers nor be met in practice by candidates" (Nuttall, 1981 p5 [Author's emphasis]).

On the same basis Harrison argues that the division into elements can only be valid "if each paper assesses an element which is not only distinct from every other, but is also worth reporting on separately" (Harrison, 1983 p17). The original intention was to report on the assessment of each element at each of the three levels of achievement. However with regard to the classification of the elements as defined in the example above (see Table 3.1) it can be seen that not only are they insufficiently distinct from each other but they are also not worth reporting on separately for the benefit of prospective employers.

Therefore with regard to the elements as defined, and in view of the opinions of Harrison and Nuttall, it is important to stress that for the purposes of ROSA it ^{would} ~~was~~ not have considered worthwhile to report on each of the defined elements.

Nevertheless, the separate elements could be used for the formative stage of ROSA to provide the students and teachers with feedback from the results of

an assessment. Furthermore the definition of the elements from topics within the syllabus greatly facilitated separating assessment questions into levels of achievement as described in 3.4.1.

In conclusion it was acknowledged that at this proposal stage, unlike the examination board systems described by Harrison and Nuttall (see above), the final report of the student's results in his/her ROSA would only show the respective student's performance at the three levels of achievement. The information with regard to the elements as defined above was considered to be of the nature of that described by Nuttall as being too detailed to be adequately assimilated by prospective employers, parents, sponsors or in fact persons outside of the particular teaching milieu. This information would only be of benefit to students and teaching staff as part of the proposed formative (feedback) report as described previously (see 3.2.3, 3.3 and 3.3.2).

3.4.3 INTRODUCTION OF ROSA

With regard to the proposal for a method of introducing ROSA to the students it was recognized from the outset that the students who would be chosen to participate in the pilot project may, depending on the types of reporting on assessment they were exposed to at secondary school, have little or no idea of the parameters of the proposed project. Therefore it would be necessary to provide initial instruction in the form of an introductory lecture. This would outline the aims and potential ultimate benefits that it was hoped would be

obtained from reporting the results of their usual assessment in this different way, as well as an explanation of a number of pertinent educational terms such as formative and summative. It was not foreseen that the above proposal would be any more burdensome than the current orientation to tertiary education; if anything it may even assist those students who currently experience difficulty with the system as it now stands.

The proposal was that all third and fourth semester students enrolled for the National Diplomas in Horticulture, Landscape Technology and Parks and Recreation Management at the Cape Technikon from 1992 - 1993 would be provided with ROSA for the subject Plant Protection A in their respective courses on completion of their studies.

The recommendation for the introduction of ROSA to the students would be for an introductory lecture to be given to each class selected for the project using the steps below. This parallels Crooks's suggestion that the students should be given information on the "formats, timing, and content specifications of their assessment tasks" (Crooks, 1988 p24). His advice is to ensure that this is done as early in the course as possible "since it is advantageous if students are encouraged to adopt appropriate study strategies from the outset of the course" (Crooks, 1988 p24).

STEP ONE

1. Firstly the lecturer, in this case the author, would clarify the difference between methods of traditional assessment and the actual reporting of

the results of that assessment.

2. The students would then be asked if they themselves 'believed' in the **validity** and **reliability** of the final assessment mark they were accustomed to receiving at the end of a course of study.

3. The students would then be asked to make lists of what they considered was 'fair' and what in their interpretation was 'unfair' with regard to;
 - (a) the calculation of a year/semester mark and
 - (b) the calculation of the final mark which included their examination mark.

4. The students would then be asked to consider how each one of them, in the position of a potential employer, faced with the final mark of each student in the whole class and with only one vacancy to fill, would choose the best candidate for the vacancy.

5. The terms 'formative' and 'summative' assessments would then be explained to them. They would then be asked to go home and in the light of what had been defined and discussed, spend some time considering their own aims and objectives for the course for which they had enrolled and prepare themselves for a subsequent feed-back session.

6. Finally, in the proposed feed-back session it would be anticipated that the outcome of points one to five as well as the students prepared opinions on the introduction of ROSA could be discussed and any further questions answered.

STEP TWO

This step would be carried out at the subsequent meeting with the students (next lecture) and would be concerned with four aspects associated with detailed planning.

1. A commitment to the project would be established from the start, whereby the students would be asked to agree to participate and the author would acknowledge that commitment and give an assurance that if at any stage in the project the students decided that it was not to their benefit or there was a clash of interests pertaining to their final examinations the project would then be abandoned.
2. The author, would familiarise the students with the syllabus and course description in relation to the topics and the method of establishing the different elements together with an explanation of the three levels of achievement. This is in accord with Crooks's recommendation that students should "know in advance what criteria will be used in assessing their performance" (Crooks, 1988 p24).

3. Dates would then be fixed as to when reviews of the assessments could take place. It would be submitted to the students that due to the proposed formative characteristic of ROSA, review at regular intervals would be best, particularly as reviews could then be combined with the return of each piece of assessed work. The aim of this proposal was that each student would then at all times be aware of the stage of his/her formative assessment and be afforded the opportunity for discussion with the author.

This is little different to the current system where students know all the results of their various tests, assignments, projects, etc. and are able to calculate and discuss with the lecturer their own year/semester marks prior to the final examination. In this instance the major difference was that throughout the duration of his/her course the student would have precise knowledge of exactly which elements and at which levels his/her learning was currently deficient or insufficient and must be concentrated on.

4. The final summative assessment would be given to the third semester students at the completion of their course or together with their diploma certificate (final fourth semester students).

3.5 VALIDATING PROPOSALS

According to Broadfoot one of the "biggest issues for the profiling movement

is its need for credibility in the market place" (Broadfoot, 1987 p20). It will not matter how enthusiastic staff or students may be over the proposed ROSA, unless potential employers can see a value and purpose in the document, the project will have failed in its objective of providing enhanced, and therefore more useful information.

As far as schools in the United Kingdom are concerned, many of them have formed a group under a school's or LEA committee, in order to "invoke the services of an examination board to provide additional expertise and kudos" (Broadfoot, 1987 p20-21), or to work towards a system of accrediting centres such as the Council for National Academic Awards (CNAA) (Willmott, in Broadfoot, 1986 p130). Others have adopted, and in some cases adapted, an existing scheme which through prior accreditation already has validity, such as the OCEA or the CGLI schemes (see Chapter Two).

According to Garforth and Macintosh there are advantages in "adapting a profile which enjoys credibility nationally particularly if it has undergone extensive piloting. But there may be even greater advantages for curriculum and staff development when a school or college designs its own profile" (Garforth and Macintosh, 1986 p14). For this reason they support differentiating between validation and verification, whereby verification may be an internal process of evidence or proof such as is seen in some of the earlier profile systems (see Chapter Two). Validation, on the other hand is a "mechanism for establishing the credibility of a profile at least at the local

level" (Garforth and Macintosh, 1986 p107).

With regard to the proposed final project, as it will have been designed and developed by staff at the Technikon it is assumed that verification would be internal. However it was anticipated that validation, even locally, would only come about as a result of a favourable response from potential employers. Unfortunately as far as the proposals for this pilot project go it would be inappropriate to canvass potential employers as to their response to the pilot scheme. The reason for this has been touched on previously and that is that without substantial re-training it would be extraordinarily difficult to involve other lecturers in the pilot scheme. Therefore the only information that would be available to the potential employers would have been obtained from only two of the mandatory twenty-two subjects in each of the three diplomas. In the author's opinion it would be extremely unreasonable to expect prospective employers to comment at all, let alone favourably on such sparse information. In fact it is possible that prejudiced replies could jeopardise the acceptance of the scheme.

Furthermore, due to the fact that this pilot project would only be conducted at the Cape Technikon there would be very little in the way of comparisons for the employers to respond to. It is for this reason that the author proposed that the validation of ROSA be left in abeyance till the scheme was fully operational for at the very least all the disciplines in the various diplomas offered in the horticultural section of the Department of Biological Sciences.

According to Broadfoot there are "numerous profiling schemes in individual schools and even subject departments, which have no external accreditation, and there is no reason why these should not continue" (Broadfoot, 1987 p21). In view of the above arguments it is anticipated that a similar situation will exist with ROSA until the pilot project has been accepted and incorporated into the department as a whole.

However, the issue of external validation should not be omitted for long, as according to Broadfoot it is of major and final importance to the significance of all records of achievement schemes (Broadfoot, 1987 p21). Therefore it would be proposed that a further study be initiated to develop a validation procedure that could be executed at a later date to accredit the scheme (see Chapter Six).

Finally, the author would like to make the specific point that the lack of accreditation for the proposed scheme at this stage would not in any way affect the validity of the scheme within the department. It would only be in the eyes of the public that a lack of accreditation may affect the validity of ROSA and hence the urgency with which this problem should be tackled once the records have been accepted within the department. In the interim period favourable statements regarding the proposed implementation of ROSA from potential employers and past students could be accepted as a mandate to continue with the development of the scheme and pursue external validation.

3.6 SUMMARY OF PROPOSED ROSA

The plan for the development and implementation of ROSA in the Department of Biological Sciences would be aimed at initially assessing and substantiating possible benefits the proposed scheme could have for students, potential employers and teaching staff.

The proposed Records of Student Achievement would not, at this stage, contain any assessment of personal attributes and would be limited to the graphical representation of the student's marks attained in his/her normal assessments for each subject. The marks attained by the student would be reported in a different way from usual in order to reflect the student's abilities at certain levels of achievement rather than as a single global mark for each subject within his/her diploma course.

The final ROSA (as distinct from the formative Record) for each student would be a single page document showing the summative results of all the usual tests, projects, assignments and examination marks that were used to establish the ROSA. The student's ability would be shown at each of the three achievement levels of knowledge, application and evaluation. Finally each student's results would be referenced against the class standard, both sets of results being depicted by means of histograms for ease of interpretation.

Furthermore, it would be clearly stipulated that ROSA remains the property of the individual student to do with as they wish. However it would be hoped that implicit in the presentation would be the fact that the document should be regarded as being both important and useful to the student's future career.

Lastly, the plan with regard to validation of the scheme was that it would be undertaken as part of an expanded study, with any commendatory comments from potential employers being accepted as approval for the scheme.

CHAPTER FOUR

IMPLEMENTATION OF PILOT RECORDS OF STUDENT ACHIEVEMENT

4.1 INTRODUCTION

As proposed, the pilot scheme of ROSA was introduced into the new diplomas in Horticulture, Landscape Technology and Parks and Recreation Management in the Department of Biological Sciences at the Cape Technikon in January 1992. The result of this was that all the students enrolled to study for Plant Protection A (compulsory for all three diplomas) in their third semester received ROSA for that subject at the end of the semester in June 1992.

[It was the original intention to provide final semester students with ROSA. However the first group of students registered for the above new diplomas had only reached their third semester in January 1992, due to their having been placed in experiential training. Consequently there were no students registered for the applicable fourth semester in January 1992 and therefore ROSA could not be compiled for final semester students as had been previously planned.]

4.2 STUDENT SURVEY

There was unfortunately insufficient class time prior to the students going on study leave at the end of the semester in November 1991, to administer the questionnaire as planned. As a result the brief preamble (Appendix A) and the questionnaire (Appendix B) were not given to all the students registered in the Department of Biological Sciences (as was proposed in Chapter Three). For the same reason, the proposed informal discussion could also not be carried out on a day following the questionnaire.

The consequence of the problem was twofold. Firstly, only one group, the final semester Horticulture (old course) students were surveyed. As mentioned in Chapter Three these were students who had by then completed all the requirements for the tuition component of their diploma, with the exception of their final semester examinations. The second part to the problem was that as all the students were in their final semester of Horticulture, questions three, four and five of the questionnaire, asking the students about their current academic status, were rendered superfluous.

The fact that all the surveyed students were then in their final semester meant that none of them would actually be included in the pilot project the following year. However in retrospect this did not appear to be as important as was originally anticipated. This was due, in part, to the surveyed students' response to the preamble and questionnaire and in part, to their reaction to

and lively participation in, the informal discussion which was held immediately following the questionnaire.

The preamble was given to the students early in the morning after which they were asked to complete the questionnaire which was then followed by an informal discussion on records of achievement. Firstly, it is of interest to report that the brief introduction to the proposed scheme and records of achievement was notable for the unexpected interest it raised on the part of the students. This was especially interesting when it is remembered that at that particular time the students' attention should have been almost totally centred on their imminent examinations.

Overall the results from the questionnaire were positive towards the proposed ROSA. Affirmative answers to question 12, from 23 out of the 24 students showed that the overwhelming majority expressed a desire for records of achievement. In addition, 22 students out of 24 stated that they had at some time previously obtained the more traditional testimonial, (question nine) which would appear to substantiate their current wish for records of achievement.

(Questions one to seven of the questionnaire asked the respondents to supply certain biographical information in order to illuminate analysis of the questionnaire data. A detailed summary of the student's responses to questions eight to 16 are given below in Table 4.2).

4.2.1 ANALYSIS OF THE STUDENT QUESTIONNAIRE

QUESTION 1 AND QUESTION 2

TABLE 4.1

SUMMARY OF AGE AND SEX DISTRIBUTION OF RESPONDENTS

	17-19	20-22	23-25	26-28	29-31	32+	T
M	1	6	4	2	1	0	14
F	0	7	1	0	1	1	10
T	1	13	5	2	2	1	24

Question one and question two obtained biographical information indicating the respondents' age and sex as detailed in Table 4.1 above. The average age of the respondents was 23,2 years with ten of the students in the survey being 23 years of age or older. Even taking into account that seven of these were males and therefore could have completed their military service 23+ is older than is customary to be concluding a three-year diploma. This indicates that those students have either been employed prior to enrolling at the technikon or, as evidenced in the answers to question six and question seven, their registration at the Cape Technikon was not the first at a tertiary educational institution after leaving school.

QUESTION 6 AND QUESTION 7

Just under half of the students questioned (11 out of 24) recorded that they had previously attempted a tertiary education qualification and of these, four

had obtained a qualification prior to registering for the Diploma in Horticulture at the Cape Technikon. This information, together with the ancillary biographical data obtained from question one and question two indicates that the opinions surveyed in the questionnaire were those of experienced and mature students. In addition (as mentioned in 4.2 above), the surveyed students were in the process of completing the final semester of their diplomas, which meant that all of them had in fact been exposed to circumstances beyond the secondary school milieu. Both conditions would tend to demonstrate that these surveyed opinions, with regard to higher education, count for more than if they had been obtained from first year students.

QUESTION 8

The intention of question eight (see Table 4.2) was to obtain an indication of how many of the surveyed students may have found records of achievement beneficial to them immediately upon leaving the technikon, depending on where they had hoped to be employed. The survey showed that two of the students were expecting to be employed by Eskom, a further two by either Eskom or a municipality, one by a municipality and one by Transnet. The remaining 18 indicated that they would be going into the private sector. Of these, 13 (54%) signified that it would probably be their own businesses, which, based on the projected aspirations of previous final semester students, was rather excessive.

TABLE 4.2

**ANALYSIS OF STUDENTS' RESPONSES TO QUESTIONS 8 TO 16
OF THE STUDENT QUESTIONNAIRE**

Q 8 EMPLOYMENT SECTOR OPTIONS	
Transnet	1
Eskom	2
Municipality	1
Eskom/Municipality	2
Private practice	5
Own business	13
Q 9 PREVIOUSLY OBTAINED A TESTIMONIAL	22
Q 10 TESTIMONIAL OBTAINED FROM	
School teacher	16
Previous employer	6
Relative	3
Friend	4
Business connection	3
Other (clergy)	4
Q 11 MOST BENEFIT OF RECORDS OF ACHIEVEMENT	
Self	1
Employer	2
Both	21
Q 12 DESIRE FOR RECORDS OF ACHIEVEMENT	23
Q 13 REASONS FOR ABOVE	see text
Q 14 CHANGE IN STUDY METHODS	13
Q 15 REASONS FOR ABOVE	see text
Q 16 DESIRE FOR ADDITIONAL INFORMATION	
Individual marks	13
Summary of topics	17
Break-down of practical skills	24
Personal attributes	19

Note: Table 4.2 shows that 36 testimonials (question ten), were obtained by the 22 students who answered in the affirmative to question nine, this is due to the fact that, a number of the students obtained testimonials from more than one person.

In the author's opinion the reasons for the large number of students wishing to go into the private sector were two-fold. Firstly, in late 1991 a number of

the quasi-government concerns, such as Transnet and Eskom, as well as large and small municipalities, were in the throes of a fairly major campaign to economise and this in essence meant a drastic cut-back in staff recruitment. Simply put, there were no vacancies available for qualifying students.

Secondly it is relatively easy in South Africa for recently qualified horticulture students to start their own business. Generally speaking, if they apply themselves, the majority of these diplomates do reasonably well and are certainly better off financially than their counterparts at the end of the first year. Therefore the lure of remuneration could certainly have influenced the students' answers to question eight. However, as is demonstrated by their answers to question 12 and question 13, this monetary fact did not seem to blind the respondents to the potential benefits of records of achievement.

QUESTION 9 AND QUESTION 10

According to their responses to question nine, 22 out of 24 students had previously obtained one or more testimonials. Of those who had only obtained one testimonial, five of them were from school teachers and four from previous employers. In addition 13 of the students had received more than one testimonial and of these, two had been obtained from a previous employers and one, from one of the other alternatives in question ten. The remaining 11 had received testimonials from a school teacher as well as one or more of the supplied alternatives.

The dominance of the testimonials having been obtained from a school teacher (16) is of course due to the fact that most schools in South Africa traditionally provide a school leaver with a testimonial as a matter of course and if this is not the case, few would refuse such a request. What was interesting was the number of students who had received testimonials from previous employers. This could simply be related to the age and former experiences of a number of the respondents.

QUESTION 11

With respect to this question, two students were of the opinion that if a profile/ personal record of achievement was available, it would be of most benefit to their prospective employer, while one student thought that it would most profit himself. On the other hand 21 students were of the opinion that the records could be of benefit to both themselves and any prospective employers. It therefore appeared that the majority (87,5%), of the respondents had either acknowledged the information given in the brief preamble to the questionnaire or they had previous experience with the scant information conventionally supplied by the customary method of reporting assessment results. Either way, they were undoubtedly aware of the value and possible uses of both the formative and summative aspects of records of achievement.

QUESTION 12 AND QUESTION 13

Virtually all the students declared a wish for a profile (see Table 4.2), further

substantiating (in the author's opinion) a common desire for more detailed information. The following are some of the reasons that were given in response to question 13. Firstly there were those students who had considered the benefit of records of achievement to themselves.

"It would benefit the individual in understanding himself and his abilities. It would reflect a wider spectrum of abilities i.e. not just one factor but many".

"It is nice to get your past almost summed up and put it all into perspective - showing one almost where one should be going (in what direction)".

"I'm not someone who would get distinctions, but it is nice to have a record of good and bad test marks to prove that I'm not just average in all subjects but pretty good in some of them".

These students appeared to want a record which would display their strong points. In addition the students perceived that records of achievement could possibly be of assistance to employers in staff recruitment:

"It would tell the employer or whoever about one's achievements and thus also a bit about the person making the employer's choice easier".

"It could ensure that you got a job for which you are completely competent and qualified to do".

"Putting the student into a work area that mostly benefits him/her due to the fact that their qualities are better in that area will provide a higher standard of work".

"help employers understand me or know why they should employ me or not".

Finally, there were those responses that reflected the dual benefit of records of achievement to both the prospective employee and employer, especially in the related areas of employee job satisfaction and productivity:

"My marks aren't so good because I have to have classes in subjects that do not interest me. This type of profile would show that I do work when I am interested".

"I feel that for myself I could work in the areas that I underachieved in. For the future employer they would have a better idea of what they are getting".

"A profile would be of benefit to you and the employer because he would be able to base his decision on whether or not to employ you by looking at your profile. Your employer will easily be able to decide whether you are suited to the job or not".

From these reactions to question 13 it would appear that the majority of the students surveyed had a fairly good idea of what records of achievement could do for them, both during their studies at the technikon and once they were qualified seeking employment. What was also evident from their answers was the existence of certain inferences regarding the inequality that they seemed to feel currently exists due to the present method of reporting on assessment. It was of course entirely possible that the preamble, and the questionnaire in general, caused these sentiments to surface in reaction to question 13.

Interestingly the 95,8% positive response obtained in reply to question 12 was vastly different to the results obtained from candidates answering an Associated Examining Board (AEB) questionnaire in the 1976 O-level investigation which mentioned the value of profiles for showing to prospective employers. Some of those candidates said "they would be prepared to pay a fee for a profiled result if necessary. But overall, only about half the candidates were in favour" (Harrison, 1983 p37). Possibly ignorance of the

potential benefits of records of achievement was a factor in the 1976 investigation, as could have been the case in the current questionnaire. Logically, it is difficult to understand why students would not want records of achievement unless it was as a result of fear of the new and unknown.

Finally, it was interesting to note that the one student who did not wish to have a profile had this to say in answer to question 13, "From previous experience in looking for a job the manager does not access your previous history in detail - he just sees whether you're capable of doing the things he wants - whether you have the qualifications for it".

If this was an accurate description of what had previously happened to this particular student, (and there is no reason to doubt the authenticity of his statement) then he cannot really be blamed for thinking that records of achievement would not help him much. Equally, the prospective employer also cannot be censured for adopting that approach, since the with the current system of reporting on assessment what else could be used to make a judgement?

QUESTION 14 AND QUESTION 15

The response to question 14 showed that over half of the students professed that, had they known that their test and projects marks would form part of ROSA, they would have indeed employed different study methods. For some of the respondents however, their answers to question 15 seemed to indicate

that *different study methods*, merely meant **studying harder** so as to obtain more than the required 40% for entry to the examination. Answers of this nature seem to vindicate some of Gibbs' assertions with regard to assessment certifying competence or predicting future performance (see Chapter One).

Other replies to question 15 indicated that there could be further inducements to possibly change study procedures. These appeared to be centred around concerns associated with the fact that records of achievement might show individual assessment marks that may not support the individual's application.

"I would have worked harder, because bad test marks are embarrassing to show a future employer".

From reactions similar to the one above it would seem that the students were well aware of the importance of ultimately presenting a solid application to prospective employers. The possibility that the proposed records of achievement could reveal data that may not be to the applicant's advantage appeared in itself to be sufficient inducement to study harder.

Other responses claimed that the existence of records of achievement could possibly have had a more profound effect on their study methods, such as the introduction of and/or strengthening of concepts of continuous learning, as well as substantial motivation for competition and inter-student rivalry:

"It would definitely be a motivating factor for working constantly through the year".

"If a student knows that there is a higher standard required of him then he will work harder because it is a fact that competition will push people to work more and the employment will be easier if the student's

standard is higher".

The following two responses to question 15 are interesting and from an assessor's point of view thought provoking. Both comments tend to indicate firstly a poor estimation of assessment itself, but secondly and perhaps more significant is the inference that, as things stand at the moment, there is simply no point in working harder as the effort is not generally rewarded by current methods of reporting.

"I would have worked harder because at the moment everybody gets the same certificate on completion of the N.D. regardless of personal achievement".

"I would have worked harder and not just worked to pass the exams and tests which mean nothing anyway".

From their answers it would seem as though these students were undoubtedly capable of more effort and that they were well aware of this. However, if there was little or no tangible incentive (as is the current situation) they were certainly not going to extend themselves. This inference is aptly born out by the following response to question 15,

"It would have meant a far harder and perhaps more dedicated approach to these studies i.e. a far less lovely time".

Notwithstanding the reply above, it appeared to the author that question 15 had evoked a response comparable to the throwing down of a gauntlet. The challenge to assessors is to improve or rectify the faults that currently appear to exist in most methods of reporting on assessment in return for motivated, zealous students. [This was seen as part of a greater challenge that the author has hopefully started to address by the pilot introduction and implementation

of ROSA].

In spite of the 13 affirmative replies above, ten (one student did not seem to be able to make up his mind and marked 'yes' and 'no'), of the respondents were of the opinion that they would **not** have employed different study methods. The majority claimed that they had worked as hard as they were capable of and that the proposed existence of records of achievement would have made very little difference to their study methods or, in the opinions of some, their resultant marks.

Some comments showed a distinct lack of motivation on the part of the students to take responsibility for their studies. It was the author's opinion that this type of disinterest stemmed from exactly the same problem areas as most of the other comments above - an innate dissatisfaction with the current method of reporting the results of assessment. The following are examples of the negative (and undecided) responses which (to the author) appeared to contain a silent plea for some sort of response or action on the part of assessors.

"Why strive to get good marks and not enjoy life when you can have a fair amount of fun, get reasonable marks and still be employed".

"I feel good study procedure comes from proper motivation by BOTH the student and the lecturer not from the fact a personal record of achievement is being formed (maybe it will have some bearing I don't know)".

Other students appeared to be under the impression that the information from the questionnaire might be used elsewhere; there was an element of

defensiveness in some of their replies such as:

"I have always given of my best".

"All studies are important and done with some effort on my part".

"What I've done in my studies is me, I wouldn't, or maybe even couldn't, have done any different. (or wanted to do any different)".

It was also entirely possible that the above reaction could have been due to the normal human fear of not wishing to admit (on paper, at least) that one could have done better with more effort and/or commitment.

QUESTION 16

Question 16 asked the respondents to mark any of four criteria they would like to see included in records of achievement. As can be seen from Table 4.2 above this question produced the most interesting results. Just over half of the respondents (13 out of 24) believed that individual marks for each test, assignment, project, etc should be reported. This showed a leaning towards a report that would give considerably more detail than has been customary in the past. This trend appeared to be confirmed by the fact that 17 out of 24 students also wanted a summary of the topics that had been covered by the various forms of assessment included in the report.

The second interesting feature of the responses to question 16 was that all of the students considered a break-down of practical skills necessary for the records, and 19 out of 24 were of the opinion that personal attributes such as punctuality, neatness and professionalism should also be included. Both of

these recommendations are in line with the current thinking on criteria to be included in records of achievement schemes in the United Kingdom (see Chapter Two).

Question 16 also asked the students to give their opinions as to what other ideas or additional criteria they would consider appropriate and of value for inclusion in records of achievement. The majority of proposals submitted were either of a personal, or of a more practical and vocational nature:

- * extra-curricular interests, activities and accomplishments;
- * leadership and communicative abilities;
- * personal, meaningful comments on the abilities and interests of the student from each lecturer;
- * best suited job e.g. landscaper, labourer, retailer;
- * personality and character profile such as:
 - how the person tackled the project/assignment
 - enthusiasm
 - understanding and comprehension
 - motivation
 - did the person give just as much as was asked or more?

In view of the above proposals it is important to clarify the justification in excluding 'comments', personal, vocational or otherwise from the ROSA scheme that was finally implemented. Essentially, suggestions of a similar character had originally been considered for inclusion. These had been put

forward briefly in the covering letter sent to prospective employers with the employer questionnaire (see Appendix C). Although the main proposal had been received very well, this particular suggestion in relation to personal attributes was subjected to some severe reservations by a small number (just over seven percent), of the surveyed prospective employers (see later 4.3).

In addition, the author would like to refer back to the original proposals for ROSA in Chapter Three, where reasons were given for the exclusion of personal information from the records proposed for this type of scheme (see 3.3.1). It was planned to concentrate on reporting the results of existing assessment in a different manner so as to increase the amount of useful information available from the assessment, without the inclusion of any additional information of a personal nature. [The above suggestions and opinions obtained from the students will be considered in recommendations for future records of achievement (see Chapter Six).]

After the questionnaire and informal discussion had taken place, many of the students expressed disappointment that they would not in fact be part of the project and therefore would not be eligible for ROSA. Obviously, the informal discussion further highlighted the proposed potential benefits of the scheme which would naturally incur a greater interest, especially in students who were about to embark on their chosen career.

In conclusion it would appear, firstly, that the concept of records of

achievement elicited a positive reaction and was well received by the students who were surveyed. Secondly, from their responses it seems that over half of them might be more motivated to attain higher marks in their individual assessments if they knew that these marks were going to be reported in a meaningful way and not 'lost' in the averaging process that is currently in use. Thirdly, it appeared that the students were in favour of as much detail of their individual performances as possible being included in the records. This detail would encompass extra-curricular activities as well as comments on character and personality with regard to job suitability.

4.3 EMPLOYER SURVEY

The proposal to survey prospective employers of horticulture students was carried out in early January 1992. Of 265 questionnaires (Appendix C) and explanatory letters (Appendix D) sent out there was a 38% return (101). Of these only 93 responses could be used in the analysis below as the remaining 8 were returned but could not be analyzed due to the following reasons:

- | | |
|---|-----|
| (i) not in fact prospective employers | - 1 |
| (ii) incorrect mailing address | - 1 |
| (iii) returned, but totally blank | - 1 |
| (iv) business closed but returned with comments | - 2 |
| (v) blank to questions but with comments | - 3 |

4.3.1 ANALYSIS OF THE EMPLOYER QUESTIONNAIRE

TABLE 4.3

ANALYSES OF RESPONSES TO EMPLOYER SURVEY

		YES	NO
Q1	Considered traditional reporting inadequate	88	5
Q2	Agreed that a profile could be of assistance	92	1
Q3	Would like to see other personal qualities	61	32

As can be seen from Table 4.3 above the overwhelming majority of the prospective employers who replied to the survey were of the opinion that the traditional method of reporting examination results was inadequate for their purposes of recruiting new staff. With one exception, all believed that a profile of achievement, as was outlined in the covering letter to them, would assist them in employee selection. This statistic very closely parallels the affirmative answers given to question 12 of the student survey (see 4.2.1) where 23 out of 24 of the students expressed a desire for records of achievement. From these two sets of results alone it would very much appear that both parties to the proposed ROSA were in agreement as to its desirability and its potential usefulness.

By comparison an investigation of user's views on profiles of results at A-level in the United Kingdom was undertaken by the Joint Matriculation Board (U.K.) in 1976-7: "schools, universities, polytechnics, professional institutions, careers officers and employers were asked for their opinions on how useful

it might be" (Harrison, 1983 p38). According to Harrison, the teachers' response was generally favourable, though only a few gave unqualified approval, "others fearing that the administration of the system would become unwieldy and that the profiles would be misinterpreted and misused" (1983 p38).

From the higher education institutions' viewpoint the result was that they seemed to think that the profiles would only be useful to them in "deciding on borderline cases for admission" or in "indicating what remedial work was necessary at the beginning of the course" (Harrison, 1983 p38). Finally, the survey received "a mixed reaction from professional institutions and personnel officers in industry" (Harrison, 1983 p39). It was however noted by Harrison that the sample was small. Analogous to this was the response to a similar enquiry made to twenty major employers in 1978 by the Waddell Committee. This was that they were "not interested in syllabus content of any subjects at 16+ other than those of direct vocational use" (Harrison, 1983 p39). In the light of these views, it is the author's feeling that possibly the vocational nature of the horticulture course may be part of the reason for the different result rendered by prospective employers in South Africa.

With regard to question three, 61 of the 93 respondents (65,6%) wanted to see personal qualities included in the comment section, other than those that were given as examples in the covering letter. Answers to question four listed these as ranging widely from entrepreneurial skills to physical stamina (for full

details, see Appendix J). It was disquieting to see the number of skills and abilities students seem to be expected to have just to be employable, especially when it is considered that virtually none of these attributes are actively taught.

The fact that over half of the respondents considered personal attributes an important part of a student's record should in itself be a good enough reason for educators to take more cognizance of these attributes in conjunction with the standard curricula. This should not, however, be taken to indicate that the results of the survey had given unanimous support to the reporting of personal information in ROSA. As was briefly mentioned previously (see 4.2.1) seven (7,5%) of the prospective employers expressed serious concern over the possible abuse or mis-use, either intentional or unintentional, that could result from the inclusion in ROSA of information of a personal and perhaps arbitrary or subjective nature.

The cautionary warning was that the type of reporting that the potential employers were asking for, if not carried out objectively, by trained, qualified, accredited staff, has the potential to be misused either with or without intent. Although this fear was expressed by only 7,5% of respondents it was stressed by all of them as a very real possibility and conceivably arose from experience. That the students themselves (in response to their questionnaire) did not appear to express any similar fears in that direction, is perhaps due to their lack of such experience at this stage in their careers.

A synopsis of potential employers' recommendations to obviate the above problem was as follows:

- * Only report on positive aspects, thereby avoiding the possibility of an incorrect judgement which could be held against the person for life
- * Avoid evaluating academic achievement with personal or other qualities which need to be evaluated by a special means of assessment
- * Extend the assessment into the working environment
- * Ensure that the system is not left to one person's judgement
- * Validate the assessor to permit the employer confidence in the ability of the person evaluating the student.

Finally, it was interesting to note that of the 88 respondents who considered traditional reporting inadequate (question one) 58 of them also answered 'yes' to questions two and three. The remaining 30 answering in the affirmative to only questions one and two and not question three. This would seem to indicate that more than half, 30 of the 58 (51,7%) are happy with the contents of the proposed records of achievement as outlined by the author in the covering letter.

Question five of the employer survey asked for further suggestions to the proposed records of achievement and this, too, elicited a tremendous range of responses, some of which are given below: (for full details, see Appendix I).

* Remove irrelevant subjects that the student will never use and spend more time on the practical requirements, marketing and managerial skills e.g. less emphasis on academic achievement and more on application of skills.

* Change emphasis as many students who excel in a classroom and are highly recommended by Tech fail dismally in a work situation.

* The type of lecturer currently used is too academic and not practically orientated, this proposal would entail a return to the previous system of outside part-time lecturers for practical subjects - would have better results as they know what is required in the workplace.

* Assess for ability to do 'hard' manual 'dirty' work - generally a problem with the girls who think that they are supervisors - this is not what we are looking for.

* Report on the results of the work done during practical training, i.e. from retail nursery salesperson to general skivvy, this is not done for some obscure reason, if the results were available it would be of great help to employers.

As can be deduced from the above sample of replies, the majority of the

prospective employers who responded to the request for suggestions appeared to concentrate on the apparent inadequacy in some of the more practical aspects within the horticultural profession. This type of information confirmed, from the potential employers' point of view, particular deficiencies in the traditional system of reporting on assessment. To the author, the receipt of these suggestions was taken as corroboration, from members of the horticultural industry, of widespread doubts as to the usefulness of the conventional method of reporting the results of assessment. This finding was in line with sentiments that have been referred to by other authors.

In respect of additional comments received from prospective employers, two significant aspects came to the fore; firstly there was a very definite response to the author's proposed project as well as a firm request for more detailed reporting of the results of student assessment. Secondly, the prospective employers wished to see a much greater number of aspects covered by the report. Appendices I and J give a complete account of prospective employers' comments and suggestions for records of achievement and a list of the qualities that they would like to see included in a report. Unfortunately, this need fell outside the scope of the pilot project. Nevertheless it was interesting to note that, as had also been established in the United Kingdom (see Chapter Two), there seemed to be a discrepancy between what was needed by the commercial sector and what was supplied by the educational sector. This fact is born out by the following extract from one of the returned questionnaires.

"Teach them the basics, many students we have employed knew their subjects but have been totally lost in the commercial world - they cannot add or subtract, cannot spell, and cannot follow a road map".

Other prospective employers' comments were of interest due to their own circumstances or experiences in the horticultural industry. Both of the following remarks indicate a serious gap in the chain from technikon training to industry - a gap that could possibly be reduced by the introduction of ROSA.

"From my own personal experience as a horticultural student my marks in horticulture were never above average but I found that I did remarkably well once I entered the private sector".

"Too many students become dissatisfied with the trade because they were not placed in the correct work environment when employed during their studies or afterwards".

Finally a number of the comments from the employers showed that;

(a) they did not fully appreciate the difference between evaluation and assessment (see Chapter One).

(b) the employers seemed to have partially misunderstood the intent of the pilot project, that of reporting on the results of the current assessment differently - some of them seemed to think that this proposal was a new and different form of evaluation or assessment; this could also have been due to two other factors: the covering letter explaining the proposed project was possibly not as clear and well defined as it should have been, and secondly, they as potential employers were so anxious for other or more detailed results from

assessment that they automatically saw this proposal as a glimmer of light at the end of the tunnel.

Having recorded the results of both of the questionnaires, and taken cognizance of the authenticated demands for records of achievement in the United Kingdom it was concluded that firstly, a definite requirement for the development and implementation of records of student achievement had been established. Secondly, the numerous proposals, comments and suggestions from both the students and the prospective employers should, where possible, be taken into consideration when re-designing ROSA for future applications (see Chapter Six).

4.4 PRACTICAL IMPLEMENTATION OF ROSA

It was considered that sufficient credence had now been given to the original proposals together with sufficient justification, to proceed with the practical implementation of ROSA in the Department of Biological Sciences. This consisted of introducing the proposed elements and levels of achievement into the various defined topics in the Plant Protection A syllabus. The two factors of elements and levels of achievement were concurrently introduced to the customary assessment instruments of class tests and the final examination. Lastly, essential modifications were made to the proposed pilot programme and the system of record keeping was established.

4.4.1 ANALYSIS OF ASSESSMENT INSTRUMENTS

As proposed in Chapter Three, the topics from the Plant Protection A syllabus were categorized into various elements, (see Table 3.1) which were found to be very similar to the divisions or sub-sections formerly provided by the traditional lecturer's guide. Normally these divisions or sub-sections were demarcated and distinguished as such under the 'contents section' of the mandatory course description, which is customarily given to students at their first lecture. The fact that the elements that were to be used were so orthodox was deemed to be advantageous as it meant that there would be very little departure from the traditional 'first lecture' procedure in the matter of introducing the students to the former 'course descriptions' and now introducing them to the fundamentally similar elements.

Simultaneously, the appropriate levels of achievement that had been previously determined, were now broadly established with reference to each of the elements. The intention had been to assess each of the elements (see Chapter Three, Table 3.1) at each of the three defined levels of achievement. However this was quickly found to be inappropriate, as certain elements could only be rationally assessed at one or at the most two levels of achievement. In addition, there were found to be instances where assessment of an element at a certain level was dependant on assessment of a different element at a different level of achievement. As a consequence all elements were assessed at appropriate levels of achievement with regard to the correlation to, and

significance of, the other elements from the topics within the Plant Protection A syllabus.

Additionally, three examples of previous semester tests (one from each of the standard three tests per semester) as well as an example of the final examination paper were then analyzed to divide some sample questions within the course topics into the elements and then to allocate them levels of achievement.

TABLE 4.4

RESULT OF QUALITATIVE CHANGES MADE TO SOME ORIGINAL ASSESSMENT QUESTIONS

TOPIC: Insect tagmata - head

ELEMENTS: structure, feeding and damage

LEVEL ONE:

Draw a diagram of and discuss the functional structure of the head of a herbivorous insect.

LEVEL TWO:

Which of the insect head positions (a) to (d) would you consider belongs to the insect responsible for the damage seen on specimen X?

LEVEL THREE:

Having seen the three damaged leaf specimens obtained from a ten-year old coffee bush assess the type of damage to the host plant and estimate potential crop loss.

It was found that the sample questions could be allocated to various elements under the different topics relatively easily. However on attempting to determine levels of achievement it was immediately apparent that the sample

questions, almost without exception, assessed level one - knowledge. Consequently, an entirely new set of questions had to be formulated to include assessments at levels two and three - those of application and evaluation. The type of change necessitated is indicated by way of the example in Table 4.4.

The above procedure was accordingly effected by the author for all of the topics within the syllabus. The author found the results of the classification of the previous instruments of assessment somewhat disturbing in that it necessitated an almost total revision of the types of questions set. However, this was in line with Crook's statement that if, following the classification process "a discrepancy seems to exist, the assessment procedures should be changed (or perhaps, in some cases, the goals should be made more realistic!)" (Crooks, 1988 p19).

Obviously all of the above entailed further revision of what had been previously proposed in Chapter Three with regard to the levels of achievement (see later 4.4.2). At the same time as the above changes were effected, the percentage of the questions testing for the three levels of achievement was hypothetically apportioned between the customary three tests and the final examination. This allocation shown in Table 4.5 was to ensure that a progression through the prescribed levels of achievement occurred with time, with the final examination being in this sense nothing more than a fourth test [see Appendices E to H for the actual four assessment instruments].

TABLE 4.5**ALLOCATION OF LEVELS OF ACHIEVEMENT IN ASSESSMENT PROGRAMME**

	Knowledge	Application	Evaluation
Test 1	±80%	±20%	0%
Test 2	±40%	±40%	±20%
Test 3	±10%	±50%	±40%
Examination	±10%	±40%	±50%

The three tests and the final examination were all given to the students in the usual manner, as the emphasis here was to stay within the parameters of the normal testing procedures already established in the Department of Biological Sciences.

4.4.2 MODIFICATIONS TO THE PROPOSED SYSTEM

As reported above Crooks is of the opinion that once the "classification process has been completed, teachers can compare what is being assessed with their intentions and stated goals for the course" (Crooks, 1988 p19). If once done, disparities are found to exist, then this is the time when appropriate adjustments can be made. This was done in the case of ROSA when the initial analysis of assessment instruments was undertaken prior to the scheme being implemented for the first time in January 1992.

Firstly, when topics taken from the original model test questions were being

categorized into elements for the purposes of reporting the results of each assessment it was noticed by the author that not only were the sub-sections very similar to those in the lecturer's guide (see 4.4.1), but that there were definite areas of previously unnoticed overlap in the syllabus. Due to this process of categorization these could be eliminated immediately. This resulted in a more succinct document, which in turn simplified the whole categorization process.

Secondly, the sample questions that had originally been utilized tested mostly at level one - knowledge. Formulating new questions to assess at levels two and three was not only difficult but trying to ensure that the correct percentage of questions at each of the three levels was in fact maintained for each of the tests and the examination was found to be a time consuming exercise. Therefore a modification was explored which was based on the proposal made by Crooks to form an assessment planning grid, or table of specifications, to ensure that each test covers the content and skills as proposed (Crooks, 1988 p20). However, time restrictions due to the author's lecture load required that the original proposal of reformulating questions and calculating the percentage at each level tested in each test as it was designed was maintained.

A further modification of a more serious nature was that changes in teaching methods were necessitated as a result of the new focus on learning quality. This modification was directly attributable to the introduction of the three

levels of achievement. It became abundantly clear as the course progressed that classifying questions into levels of achievement would not be of any significant value unless the author taught the students in an appropriate manner. The author therefore had to modify her usual method of teaching and initially teach the students not only to think and conceptualise at the three levels but also how to read and interpret the questions set at these levels.

The changes that were made to the method of teaching appeared to evolve spontaneously between the author and the students. Initially, the author covered the prescribed course material by way of formal lectures which were reflected in the structure of the notes provided to students. (It is noteworthy that the author had received a prestigious award for good teaching in 1989 on the basis of peer and student evaluation). However, after the first test it was clear that this would not suffice. The method of teaching needed to be drastically revised if any of the students were to have a chance of answering the questions which were set at levels higher than 'knowledge'.

The radical revision took the form of dispensing with the lecture notes on the author's side (the students still retained their notes) and replacing the usual 'chalk-and-talk' lecture with co-operative problem solving. At first this tended to take the format of a large tutorial with most, though not all of the students participating. However it soon became clear to all the students that although verbal participation was not absolutely necessary, certainly perceptual comprehension was of the utmost importance if they were to succeed with

this approach.

With reference to the actual assessments the author continually stressed the fact that at the beginning obtaining the right answer was of less significance than the methods which were employed to obtain the answer. Simply put, for the first month of using this teaching technique the students were awarded no marks for the correct answer, only for their methodology. Initially this produced some indignant outbursts. However it was not long before this was replaced by a sense of pure achievement. This 'sensation' appeared to be heightened by the fact that each student was now fully aware of how he or she had arrived at a particular answer. In other words, learning for a test had become something other than sitting down for a specified period of time to commit one's notes to memory. Students who persisted in this fashion failed to obtain any recognition for the reproduction of their notes.

For the duration of this 'initiation' period all of the students were at liberty to question the 'new' method and were reminded of the fact that, if at any time anything should occur during the implementation of this pilot project that, in their opinion, could jeopardize their final results, the project would be abandoned. After approximately one month an informal classroom survey was conducted by means of a secret ballot to determine student opinion as to the new method. The result was unequivocally positive with 32 out of 32 students voting for retaining the new method.

With all the students satisfied that this method of instruction was functioning as intended, the remaining teaching periods of the semester were conducted in exactly the same way. With regard to the remaining two tests, the students were now given credit for the correct answer as well as for their logic in arriving at that answer.

4.4.3 SYSTEM OF RECORD KEEPING

The system that was used to record the students' results consisted of a large manual spreadsheet which recorded each element within the various topics that had been assessed, as well as the appropriate level of achievement, the total marks and the mark that was attained by each candidate for every question (see Appendix K). The recording of the raw marks attained for each element, at each prescribed level of achievement was done while marking each of the three tests as well as the examination.

This method was found to be exceptionally tedious but it was retained throughout the duration of the pilot project, largely because there did not appear to be a simpler or quicker method available, other than to computerise the spreadsheet. This was considered inappropriate for two reasons.

Firstly, as proposed in Chapter Three, the author planned to keep a careful account of the conditions that were required to implement this system with special reference to the time involved. Secondly, the consideration was, that

if the system was ever to be implemented into other subjects and courses at the Cape Technikon and elsewhere, it was highly probable that there could be lecturers with insufficient knowledge of the use of computer spreadsheets, who might like to implement the system.

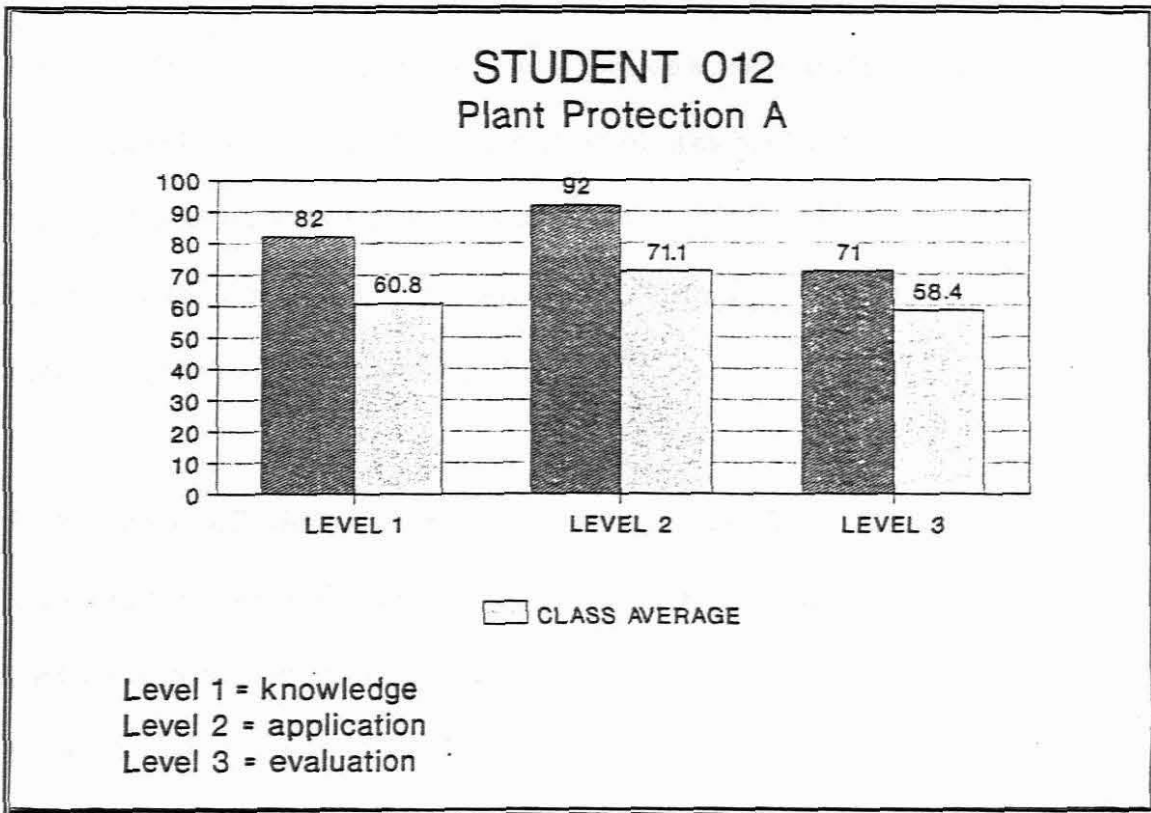
With regard to the formative ROSA, a manual spreadsheet of the raw data was compiled for each test and when the tests were returned, the students received their total mark, as is customary, but they were also provided with three other marks which indicated their current achievement at the three prescribed levels based on the levels of achievement of the questions that had been asked in each particular test. By the end of the third test the students had a set of three marks indicating their levels of achievement with respect to the three tests that they had written. These marks were in addition to their normal average which, together with marks attained in assignments and projects, formed their semester mark which afforded them entry to the final examination at the end of the course.

The set of nine marks was not totalled at this stage because the examination was considered to be a fourth test. However, it was noted that the students themselves added the marks representing each of the three levels of achievement. In this way they were able to assess for themselves how they had progressed in the three areas of knowledge, application and evaluation up to that point.

Once the examination had been written and marked in exactly the same way as described for the tests, a fourth set of marks was then available for each student in respect of all three achievement levels. The summative ROSA was then compiled and made available to the student (see Table 4.6).

TABLE 4.6

SUMMATIVE RECORD OF STUDENT ACHIEVEMENT



4.5 DISCUSSION OF RESULTS OBTAINED

As had been proposed in Chapter Three, in an endeavour to facilitate user-friendliness for ROSA, simple computer-generated histograms (as indicated by way of the example above, Table 4.6) were employed to graphically represent

the students' achievement at the three levels. Analysis of individual students' ROSA histograms (see Appendix L) show that clear differences can be seen in the students' results with respect to their achievement at levels one, two and three (knowledge, application and evaluation).

The inferences that may be made from the additional information provided by ROSA, over and above the students' final global mark for a particular subject, could be of considerable use to a prospective employer particularly in relation to job specifications. On the basis of attributes required to fulfil a particular vacancy a prospective employer should be able to assess each applicants' suitability for the particular situation assuming of course that he or she was satisfactory in all other areas.

From Table 4.7 below it can be seen that students 001, 006, and 031 all received the identical mean global mark of 56,3. However by reporting this traditional assessment result differently, as three levels of achievement it can be seen quite clearly that all three students differed in the extent of their achievements at the three levels. Similarly, students 004, 025 and 013 obtained comparable mean global marks of 68,0 to 69,0 to 69,3 respectively, and their individual scores too vary significantly at the different levels of achievement.

TABLE 4.7

SUMMARY OF RECORDS OF STUDENT ACHIEVEMENT RESULTS

STUDENT	LEVEL 1 (knowledge)	LEVEL 2 (application)	LEVEL 3 (evaluation)	MEAN
CLASS MEAN	60.8	71.1	58.4	
001	57	71	41	56.3
002	78	82	79	79.6
003	34	56	55	48.3
004	68	70	66	68.0
005	56	76	50	60.6
006	49	69	51	56.3
007	53	76	57	62.0
008	59	82	61	67.3
009	50	68	52	56.6
010	47	63	48	52.6
011	49	65	47	53.6
012	82	92	71	81.6
013	75	66	67	69.3
014	59	83	46	62.6
015	68	78	63	69.6
016	61	57	58	58.6
017	61	77	56	64.6
018	67	64	60	63.6
019	53	77	57	62.3
020	52	73	43	56.0
021	56	59	68	61.0
022	70	59	64	64.3
023	79	82	67	76.0
024	65	73	57	65.0
025	60	78	69	69.0
026	80	75	74	76.3
027	49	58	45	50.6
028	70	75	70	71.6
029	58	65	73	65.3
030	61	66	60	62.3
031	61	71	37	56.3

The above examples show how important "qualities and features differentiating one student from another are obliterated by the baldness of grades" (Rowntree, 1987 p69). Equally, they show how ROSA could be of

use in supplying additional details with regard to students' achievement. This would inevitably give a better indication of the individual student's potential abilities. Furthermore this supplementary information provided by ROSA regarding candidate performance on the three levels of achievement would potentially assist employers in selecting job applicants on the basis of their evident strengths.

TABLE 4.8

COMPARISON OF STUDENTS WITH EQUIVALENT LEVEL ONE SCORES

Student	Level 1	Level 2	Level 3
016	61	57	58
017	61	77	56
030	61	66	60
031	61	71	37

ROSA could also be of value under circumstances where the prospective employer is looking specifically for a dominance of, or even a tendency towards, any of the three categories of knowledge, application and evaluation that are reported. For example from the comparison shown by Table 4.8 it can be seen that students 016, 017, 030 and 031 all achieved an identical 61% at level one (knowledge). However their marks varied significantly at levels two and three. Student 016 achieved 57% (14% below the class average) at level two and 58% at level three. Student 017 obtained a similar mark of 56% at level three but he/she achieved 77% (6% above the class average) at level two thus distinguishing his/her abilities from those of student 016 even although they had both achieved the same mark for level one.

The other two students 030 and 031 who also achieved 61% at level one showed a distinction in their respective abilities at levels two and three. Student 030 achieved 66% at level two (below the class average of 71,1%) and 60% (just above the class average of 58,4%) at level three. Student 031 was only just below the class average at 71% for level two; however he/she only achieved 37% at level three, 21% below the class average of 58,4%.

From the information given in Table 4.8 a prospective employer can more easily select a possible candidate for a specific job depending on what skills or abilities are required. For example in the situation above all four applicants achieved the same, above average mark for knowledge. The employer should therefore be able to discount knowledge for the moment and make a choice based on the particular job's requirement for application and/or evaluative skills.

The author would like to point out that the differences seen in the students' achievements in Table 4.8 above are more than simply numerically distinct. There is unfortunately, a general tendency, often associated with examinations, to assess candidates largely at the level of knowledge and recall, and the results of that assessment are of course usually reported as a single global mark. This being the case, prospective employers in the situation above, without the advantage afforded by the additional information reported in ROSA, would be faced with four seemingly identical applicants and would be forced to make a choice for one of them. Due to their identical final marks

(possibly based only on knowledge), any employer's choice would then have to be based wholly on parameters other than those supplied by the applicant's previous educational institution.

In place of the above unenviable situation applicants for a specific position can be compared by a prospective employer with the aid of, not only more detailed information, but information based on parameters other than those of knowledge and recall. The use of ROSA could therefore afford the prospective employer a chance to make a better, more informed judgement as to the suitability of a particular applicant for a specific position. Even in the case of there being only one applicant, or only one applicant who has ROSA, the employer is in a decidedly better position to make a decision than has been the case up to now.

Similarly if one looks at level two, students 031, 001 and 004 obtained 70 to 71% for application which also happens to be the class average for this level. However student 004 was the only one of the three to achieve marks above the class average for both the other levels, one and three. If an employer was requiring someone of above average ability at all three levels then out of the three possible candidates in this case, student 004 could be offered the position.

Alternatively, should the prospective employer be looking to fill a post which has a strong repetitive routine element but still requires reliable average skills

in application and knowledge, student 031 would appear to be a good candidate.

Thirdly with regard to level three (evaluation) students 021, 023 and 013 achieved 67 to 68% at level three, approximately 10% above the class average for this level of achievement. However both students 021 and 013 fared poorly at level two, failing to achieve even the class average of 71,1%. In a potential process of elimination this would leave student 023 as a possible candidate for selection. This could be confirmed by the fact that he/she is seen to have achieved 82% at level two (where his/her fellow applicants were weak) and he/she has the best mark of 79% of all three candidates for level one (knowledge). Depending on the prospective employer's requirements it would appear that of the three students, 023 could be selected.

[From the point of view of the usefulness of ROSA to prospective employers it is interesting to note that Harrison makes mention that in 1983 there was a bipartite recruiting policy in the United Kingdom. The result of it was that a high level of qualification was looked for in potential management staff, whereas requirements for the clerical and manual workforce were a good attitude and not too much ambition (Harrison, 1983 p40). Harrison then quotes Doe, (The Times Educational Supplement, September 1981) who claimed that if supplied with profiles "most employers would probably simply add separate grades up again and take an average", that is assuming an

average was not published as well, in which case they would be saved the trouble (Harrison, 1983 p40).]

Finally, one of the most significant and pleasing results to come from the introduction of ROSA was the positive change in student satisfaction with the course. What the Records of Student Achievement produced was a change in the students' perspective based on a new awareness of the purpose and the process of learning. This was partly due to the provision of detailed feedback as to their levels of achievement on the specific course elements, which enabled the students to monitor their own achievement, but partly due to the change in the teaching methods, which seemed to them to allow them more scope in their learning. Some, or all of this resulted in a remarkable 'change' in many of the students' attitudes to:

- * themselves as people;
- * their specific course and the subject in that course;
- * their projected aims at the completion of their studies
/on attainment of their diploma;
- * their view of education 'as a necessary evil' in order to get
the licence to practice;
- * their traditional view of the lecturer-student relationship.

Unfortunately these shifts in attitude were not monitored or assessed in any quantitative way, which, in retrospect was possibly a fault of the original project proposals. It is fair to state that this omission was due to the fact that

these changes had not been anticipated.

It has already been envisaged that any future project based on expanding the implementation of records of achievement could aim to include many of the more personal and the vocational parameters of each student. This would be in accordance with the suggestions received from the surveyed students as well as the comments and proposals obtained from the prospective employers (see Appendices I and J). In this case the proposal could be extended to establish evidence of changes in student attitudes attributable to the introduction of Records of Achievement (Gronlund, 1976 p429-435).

Throughout the pilot project the students were seen to be very interested in the method of reporting their results, which in turn appeared to give them motivation to attain higher levels in each subsequent test. This could well be a side-effect attributed to the students' knowledge of their participation in the pilot project. According to Rowntree, when students know their efforts or behaviour are under a spotlight they may alter their behaviour positively or negatively (Rowntree, 1987 p40). In this instance it appeared as though the incentive to perform well had been realized. In addition to the increased motivation to succeed, it also seemed that the introduction of ROSA greatly enhanced the students' response to the subject itself. This was curious as it had always been a fairly well established fact that this particular course in Plant Protection was one of the more interesting of those common to the three diplomas in the Horticulture section.

The explanation of this exceptionally positive response to the subject may lie in the fact that it was an evidence of the Hawthorne effect. Having experienced the effects of the project the students reacted with a spiralling attentiveness to the subject material. Rowntree states that if "students feel that a teacher is genuinely concerned about how they think and feel and is interested in learning how they progress over a period of time, they may well feel stimulated to maintain a high level of effort" (Rowntree, 1987 p40-41).

There was some initial scepticism with regard to the change that was effected in some of the methods of teaching. This was especially apparent in those students who had previously 'cracked the system' either by studying very hard or on the basis of a highly retentive short-term memory. This was soon superseded by an atmosphere of anticipation which appeared to precede each test, which was now regarded not as a test of what they knew but a challenge to them as to how they could arrive at and substantiate their answers. As one student succinctly put it,

"I no longer have to swot, I just read through my work and arrive at the test the following morning".

Finally, it was hoped by the author that some of the results that were obtained from the implementation of ROSA went further than the production of a summative document which would possibly be of use to the students and their prospective employers. It has been said that the "quickest way to change student learning is to change the assessment system" (Elton and Laurillard, 1979 p100). It was therefore hoped that those students who were

subjected to this pilot project were enriched in a greater way, even if it was only to understand that learning consists of more than the regurgitation of learned knowledge on command.

4.6 VALIDATION OF PILOT SYSTEM

One of the major problems that was experienced is that the majority of the students who left the Cape Technikon with their ROSA at the end of June 1992 either went straight into private practice and started their own businesses, or they were already under contract to one of the larger employers (such as Eskom, Transnet, or one of the Municipalities). In these latter instances they were assured of employment and as a result did not have an opportunity to use their ROSA. In the case of the former situation, those in their own businesses obviously have not yet experienced the need to use their ROSA.

It was therefore anticipated that validation of the pilot system could only be achieved in three to five years time, once the students, now diplomates, would have had sufficient opportunity to use their ROSA, and an adequate number of employers would have come into contact with the scheme.

4.7 SUMMARY

The introduction and implementation of ROSA for students in the Horticulture

section of the Department of Biological Sciences was not without its attendant problems. In spite of these, and from the point of view of the two surveys that were conducted, a very definite need for ROSA was clearly established. The system itself was implemented as proposed in Chapter Three, without too many major modifications and the resultant summative ROSA was given to the 31 students at the end of their course of studies.

Notwithstanding this success, the pilot project seemed to have also given rise to some unexpected consequences by way of a general enhancement and possibly even enjoyment of learning by the students. There was also a discernible positive increase in their interest in firstly their own achievement and secondly their perception of themselves from both an academic and a non-academic point of view.

Finally, it was regarded that the pilot project should be considered to have been successful and, that as was originally proposed, the scheme might be expanded to provide both the third and fourth semester students with a formative record of achievement and the final fourth semester students a summative record of achievement.

CHAPTER FIVE

PRACTICAL IMPLICATIONS OF IMPLEMENTATION OF PILOT RECORDS OF STUDENT ACHIEVEMENT

5.1 INTRODUCTION

There are obviously very many aspects that have to be taken into consideration prior to developing and implementing a system of records of achievement. By way of a synopsis and with reference to ROSA the following three questions, adapted from the diagram provided by FEU, (in Broadfoot, 1987 p86), are submitted for consideration.

- * What are ROSA and what is their relation to existing examination policy?
- * Will ROSA affect curriculum policy and as a consequence teaching /learning situations?
- * What are the implications for the organisation with regard to staff commitment, available resources and decisions on the approach to the scheme?

The explanation to the first consideration is that ROSA were designed to enable an increased amount of information to be reported on for each student, with the intention of making the supplementary information available to

interested parties, primarily prospective employers, to the benefit of the student. ROSA's current relationship to existing examination policy in the Department of Biological Sciences was that initially, it would be in the form of a document in addition to, and removed from the conventional reporting of a student's examination results. Naturally, dependant on both internal and external acceptance of ROSA the plan would be to propose implementation of the scheme to other interested departments and if successful eventually the whole institution.

With regard to the remaining two considerations raised by FEU, it is indisputable that the practical implementation of virtually all schemes in any sphere of human endeavour is bound to have far-reaching implications. The same was true for the implementation of Records of Student Achievement at the Cape Technikon. These two implications will be discussed later in this Chapter under 5.2 and 5.4.

At the commencement of this Chapter the author feels that it is important to state that, from the outset of any proposal to institute a scheme for recording results of student achievement, it is clearly understood that regardless of the theory, practical difficulties will arise. Broadfoot claims she wrote her book, "Introducing Profiling - A Practical Manual", not only to introduce profiling as such but also to provide some guidance on the process of implementing profiling schemes. She maintains that there are "neither magic formulas nor easy options" and that experience to date suggests that "profiling does make

new and sometimes heavy demands on staff time and skill" (Broadfoot, 1987 p1).

Analogous to this, Garforth and Macintosh are adamant that if there is little appreciation for and anticipation of the possible implications of developing and implementing records of achievement into an institution's organisation and structure then "there is little chance of its success or there are likely to be, at least, significant operational difficulties" (Garforth and Macintosh, 1983 p111).

Although there are more than enough positive aspects to promote the use of records of achievement schemes, as can be seen from the above authors, equally significant are the fears and worries, especially to those on whom the implementation and running of the scheme will inevitably fall. According to Broadfoot the common concerns are principally:

1. time - to do the recording
2. space - to engage in dialogue with pupils
3. skill - in making the assessments
4. fear - of the new style of teaching and learning relationship often required (Broadfoot, 1987 p82).

Only if these factors, causing such misgiving on the part of teachers, are solved, or at the very least minimized, will the implementation of records of achievement schemes become less of an onerous task than it has been in the past and as was the case with ROSA.

5.2 IMPLICATIONS FOR TEACHING

As far back as 1926, Lowell stated that the question of "studying for marks rather than for knowledge, and the kindred matter of cramming for examinations, are not uninteresting and are often misunderstood" (Lowell, in Crooks, 1988 p29). According to Lowell, students who do this very often achieve better marks than the student who has a larger real command of the subject. This, he claims, is due to the way in which examination questions are often set. If, however, "all examinations were so conducted as to be an accurate and complete measure of the education the course is intended to give,..... then there would be no reason why the student should not work for marks, and good reason why he should" (Lowell, in Crooks, 1988 p29).

Lowell gives the analogy of chiding a tennis player for training himself to win the match instead of acquiring skill in the game, saying that the two things are the same; "if marks are not an adequate measure of what the course is intended to impart, then the examination is defective". He concludes by saying that if "examinations were perfect the results would command universal respect, and high grades would be a more general object of ambition" (Lowell, in Crooks, 1988 p29). The fact that this is still true, as much today, as it obviously was in 1926, is a serious indictment of our current assessment methods, as much as the method of reporting the results of that assessment.

In the survey conducted on final semester horticulture students (see 4.2.1) a similar situation to Lowell's was reported. Results from the survey indicated that in general students were apparently not motivated to attain high marks in tests. The reason given was that those individual marks are never reported anywhere so it does not matter. Additionally, unless a particular student qualifies for a distinction, in the words of one of these students, 'everybody gets the same diploma on completion, regardless of personal achievement'.

The above student perspective is in contrast to the report made in Chapter Four that the introduction of records of student achievement appeared to have had profound implications on students' attitude towards their study methods and consequently their level of personal motivation. It was described that the use of ROSA had altered many of the students' long-held beliefs with regard to assessment. This was evidenced by remarks made by students to the fact that ROSA permitted different levels of expertise or achievement to be recorded for each student. This positive shift in learning incentive due in part to the introduction of a records of achievement scheme into the system obviously has very encouraging implications for teaching.

Secondly, in consideration of the implications for teaching due to the implementation of ROSA, one of the more critical modifications that had to be carried out, was the problem of setting assessment questions. (See Chapter Four). The difficulty was with setting the questions in such a way as to elicit the correct responses with reference to the appropriate levels of

achievement. It was further indicated (see 4.4.3) that this particular modification itself had subsequent repercussions. These led directly to adaptations to the teaching methods in order to allow for the students to attain the two higher levels of achievement in their studies.

This was not regarded as unusual, as according to Garforth and Macintosh certain changes are needed in classroom management to accommodate the introduction of a system of records of achievement. They state that the "didactic, chalk-and-talk approach to teaching" (Garforth and Macintosh, 1983 p130) is unlikely to suffice and in order to achieve the aims of any scheme there should be a rigorous review of curricula. It is their opinion that this should identify "outdated, inappropriate, irrelevant or duplicated content" and "lead to a more unified curriculum and assessment package" (Garforth and Macintosh, 1983 p130).

Basically, due to the difficulties experienced and the resultant modifications that were made to ROSA, a number of important implications for teaching emerged that could establish particular adjustments to existing practices. Firstly, and very much in line with Garforth and Macintosh's second comment above, it had been found that there were definite areas of overlap in the syllabus (see 4.4.3). These had indeed been recognized by the author prior to the commencement of the pilot project, but at the time they had not been judged to be sufficiently significant to warrant immediate attention.

Nonetheless, it became apparent that the degree of duplication was actually of a serious nature, especially in respect of setting assessment questions. This was in line with one of Broadfoot's purposes of assessment, the standardization and control of syllabi (Broadfoot, 1987 p5), that was reported in Chapter One. Close analysis of the way in which the elements linked topics, particularly with regard to the second and third levels of achievement, clearly revealed the extent of the repetition that had existed within certain sections of the syllabus. The important point here was that most of this repetition had in fact formerly been assessed and to compound the issue further, most of it had been assessed at the most basic level of knowledge.

By instituting the procedures to establish assessment questions as proposed in Chapter Three, weaknesses and defects in the syllabus were quickly uncovered. As a result of the introduction of assessment questions linked to progressive levels of achievement, the heretofore 'hidden' existence of syllabus overlap was clearly substantiated.

The second factor to be illuminated by the implementation was that the modification to combine certain sections of the syllabus was not a simple matter. It quickly became evident that it could only be accomplished due to the fact that the author had had sufficient field experience in the discipline, providing a deep and broad understanding of the subject. Interestingly it was depth of understanding that was found to be of foremost significance with reference to the ability to evaluate what was and was not applicable from the

original syllabus. This was found to be equally valid for evaluating the relevance and practicality of the proposed assessments.

Thirdly, among a number of changes to certain of her own established teaching methods, the author experienced two which were particularly significant with respect to the practical implementation of the scheme. The first modification that was required was in the method of organisation and presentation of the lecture material. While marking the first test it was found that the vast majority of the students were not really able to think for themselves to any meaningful degree. Answering questions beyond the first level appeared to be a problem, in that they seemed to have difficulty in transposing factual knowledge into more practical realistic terms.

In the customary test feedback it was immediately established by the students themselves that, although they had previously been 'at home', and in fact extremely capable of answering questions within the realms of the established chalk-and-talk approach, they now felt 'at sea'. Their argument was that there had not in fact been a mere change in the method of reporting the marks obtained in the assessments - the whole assessment had changed. This of course was true; in order to fulfil the proposed requirements of the records of achievement scheme the author had in fact changed the assessment, albeit, in order to actually assess at the two higher levels of achievement (application and evaluation).

What had occurred was that the simple implementation of the proposals for records of student achievement had resulted in highlighting a flaw in what had previously been assumed to be an adequate method of assessment. It was at this point that the author realized that vast changes would be necessary in the **method of teaching** if the planned assessment and the scheme itself was to have any chance of being practically worthwhile under the proposed parameters of implementation. This was made all the more critical by the fact that the first test had really only had approximately 20 percent of the questions at level two (see 4.4.1). The proposed percentages of the questions at levels two and three in the ensuing tests meant that any changes to the teaching method would have to be made immediately. This was of course in keeping with Garforth and Macintosh's advice quoted earlier in this Chapter that initiating a system of records of achievement could mean modifications might have to be made to established approaches to teaching.

Finally, records of achievement will obviously also have an important effect on the relationship between curriculum and examinations. This is due to the fact that by encompassing academic achievement, the records concentrate the minds of both the students and lecturers on the course itself, its purpose, content and effect, rather than simply on end results. It should therefore, as occurred with ROSA, encourage the participants in the learning relationship to regard the result, not as the object of the study, but rather as evidence for it.

5.3 IMPLICATIONS FOR ASSESSMENT

Broadfoot argues that, "assessment practices are one of the clearest indices of the relationship between school and society since they provide for communication between the two" (Broadfoot, 1979 p11). Since records of achievement schemes clearly improve the communication between the two, this is possibly why their introduction has brought about such significant implications for assessment. In the past, examinations were isolated from other assessments and given prominence as "important instruments of social control, 'accrediting' individuals and 'legitimizing' knowledge", in fact by their very existence, "access to and success in examinations has been a key determinant of social mobility" (Eggleston, in Broadfoot, 1979 p9).

In spite of this, in recent times it has been proposed that it is possible that success in examinations does not automatically ensure later success in life. Gibbs even goes so far as to suggest that "there is a negative correlation between degree classification and success, i.e. those who get poor degrees do best in their jobs" (Gibbs, 1991 p3). However, by using records of achievement as a means of reporting the results of (in this case tests and the examination) academic achievement differently, as three levels of achievement, instead of a single global mark, it is possible to immediately perceive more detail than can be gleaned from a single mark or grade. The greater detail gives a better indication of a candidates' potential abilities.

Accordingly, it should be obvious that the better reporting of the results of assessment focuses attention on the nature and purpose of assessment - this in turn necessitates qualitative changes such as those expressed by Garforth and Macintosh, who are of the opinion that it should not be surprising to discover "that introducing profiling will also affect assessment practices and the programmes required to develop teachers' skills in assessment techniques and recording methods" (Garforth and Macintosh, 1983 p111-112). Consequently, it can be stated that the introduction of records of achievement schemes could have a significance influence on methods of assessment.

In practice this was found to be true. The implications for the assessment itself were far-reaching, starting with the problem of defining the topics and elements from the official syllabus. It was found that the Plant Protection A syllabus had a number of nebulous words such as 'insect classification' and 'insect nervous system'; the degree of classification and extent of the nervous system were not specified, presumably left to the discretion of the lecturer. This confirmed Harrison's complaint that very often the syllabi that are drawn up for a particular course use a single word (for example 'mapwork'). This can be taken to mean "skill in understanding and interpreting maps, skill in illustrating answers with sketch maps, practical work involving the use of maps, the accurate drawing of maps, or all of these things" (Harrison, 1983 p20).

Following this, once the elements had been defined there remained the

problem of the three levels of achievement. At which level or levels would each element be tested, and how would all the elements and their appropriate levels be equitably reflected in the three tests and the examination? In dealing with the same problem, Harrison asks what number of different questions can be set to test a single element as described - "are they in effect infinite, or is there only a limited number of questions which can reasonably be asked to assess a given element?" (Harrison, 1983 p20).

As far as the intent of ROSA extended, the answer to Harrison's question was that when designing the questions to test a single element on a single level for Plant Protection A, the number was found to be finite. However, when designing questions to assess all the levels, the answer was infinite as the number of questions that were asked reflected the number of examples in which each element could feasibly occur. (See Appendices E to H for examples of test and examination papers that were used).

The reason for there being an infinite number of questions that could be constructed at all the levels of achievement is based on the principle that each and every situation-experience is unique not only to itself, but also to the specific situation. Once again an example can be taken from the Plant Protection A course where it is possible to have a finite number of pest species causing an infinite amount of economically significant damage - depending on the circumstances of the situation. Each 'possibility' and its attendant alternative solution(s) or answer(s) is obviously as infinite as the

parameters of the question.

TABLE 5.1

ASSESSMENT PLANNING GRID: PART OF PLANT PROTECTION A COURSE

Element	Knowledge	Application	Evaluation	Total
Nutrition	4	5	7	16
Food material	8	14	10	32
Damage - potential	9	6	12	27
Damage - actual	7	10	8	25
Column total	28	35	37	100

(Adapted from Crooks, 1988 p20)

Note: The numbers represent the percentage of marks on the test for each particular combination of element and level of achievement. For example the element 'food material' at the third level of achievement - evaluation, would be 10% of the total marks of that test.

Finally, some of the above difficulties were exacerbated when it came to equate questions from one paper with those from another. In order to move some way toward a solution to these problems which, the author would like to point out, do not only occur with the use of records of achievement schemes, Crooks has suggested the use of an 'assessment planning grid'. Table 5.1 shows how the use of such a planning grid, as applied to one of the tests in the Plant Protection A course, can aid the endeavour to construct comparable test and examination papers.

Analogous to the above problem, the author previously mentioned

experiencing difficulty with setting assessments especially at the highest level of achievement (see Chapter Four). The fact that this is not an easy task is corroborated by Crooks who warns that without "advance planning, it is all too easy to construct a test which does not sample content areas and skills appropriately" (Crooks, 1988 p20). According to Crooks the "main benefit from drawing up a test planning grid before starting to write items for the test is that it guides the selection of items. Items which involve lower level skills (e.g. recall) tend to be easier to write, and some content areas are more fertile sources of items than others" (Crooks, 1988 p20). It is the author's belief that the use of a planing grid should obviate some of the difficulties that were experienced with setting assessments.

5.3.1 CHANGING THE APPROACH TO ASSESSMENT

Due to the above problems with the approach to assessment, some of which were brought to the fore by the implementation of ROSA, a more intense strategy had to be taken towards assessment than was possibly the case previously. The first of these was that the author had to acknowledge that the fundamental changes in the structure and operation of assessment were crucial and could not be undertaken without sufficient preparation.

Some of this preparation involved re-training the author in order to undertake some of the tasks that were required by the system of ROSA.

This is confirmed by Garforth and Macintosh who are of the opinion that staff "expertise and confidence are important to the development of profiling" (Garforth and Macintosh, 1986 p132). According to them the "importance of assessment is not emphasised in student teachers' courses and so their assessment skills are undeveloped" (Garforth and Macintosh, 1983 p134).

Three of the problems areas that Garforth and Macintosh see as requiring in-service development are:

- " (1) Identifying the assessment criteria at departmental and institutional levels
- (2) Developing assessment techniques for each of the criteria
- (3) Developing appropriate methods of recording progress and achievements" (Garforth and Macintosh, 1983 p133).

These were all problems which were either incurred by the author during the development and implementation of ROSA or could be envisaged as possibly being problematic in future expansion of the pilot project.

The changes that occurred in the author's approach to assessment were necessitated by the different form of reporting on the results of assessment. This had in turn, other implications especially on learning, all of which were to the ultimate benefit of the students. As was reported in Chapter Four the implementation of ROSA with its method of recording

achievement appeared to result in significant changes in the students' attitude to the purpose and process of learning. This is substantiated by Crooks who claims that research on "learning processes has shown that assessment which focuses on the more complex skills (e.g. application) enhances learning of all skills (including recall of information), while assessment which focuses on recall enhances only recall skills". He further states that "assessment of more complex skills encourages students to develop or learn conceptual frameworks which link factual information together, and this assists in the recall of the factual information" (Crooks, 1988 p19). The fact that all of the students achieved higher marks in total than the author had initially expected of them might provide tentative evidence to support Crook's statement.

A second change to the approach to assessment was to ensure that not only were the students timeously advised of what assessments would be carried out, and when this would take place, but (more importantly) the students were given in advance the content specifications of each assessment. This is in direct contrast to typical spot tests - which are supposed to keep the students 'on their toes' - or statements from the teacher such as 'you will be tested on the term's work', or 'the test will be from page X to page Y.

Crooks also suggests giving the students a copy of the assessment planning grid as they should know in advance what criteria are being

employed to assess their achievement. He states that if the "assessment procedures are comprehensive and well designed, there is little danger associated with giving students quite detailed content specifications" (Crooks, 1988 p24). This is corroborated by Rowntree who says that assessors should discuss their assessment strategy with students, even going so far as to "teach them how to work with certain assessment techniques so as to best reveal their knowledge and skills" (Rowntree, 1981 p212).

This particular aspect was briefly touched on in the pilot project with respect to discussing, with the students, the method of reporting the results of assessment in relation to the three levels of achievement. It is the author's opinion that one of the minor, but nevertheless important implications for the assessments was partly as a result of this discussion. The illustration of this was seen in the interest in and use made of ROSA in its formative stage by the students themselves. They were able, within the bounds of the scheme, to monitor their own achievement, and they instinctively became aware of a difference between their strengths and their weaknesses. As one student succinctly put it, he never knew he could be so clever. To the author this meant that until this stage in his life, more had obviously been made of his failures than his successes, and in all likelihood, this was probably due to the fact that his previous successes had been engulfed by the method of reporting the results of his assessment as a single global mark.

According to Broadfoot the introduction of records of achievement to one school resulted in the pupils welcoming the spread of information provided. Correspondingly their parents who had previously complained of insufficient information seemed agreeably pleased with the subject overviews (Broadfoot, 1987 p103). Similar opinions with regard to the extent of information were verbally expressed by the horticulture students. This interest was heightened by the sensed atmosphere of anticipation and challenge prior to an assessment.

Lastly, it has been known to be the general practice that assessors mark students' work by means of solitary ticks or crosses. If comments are made they are often sarcastic or derogatory. Although the author had always given more feedback on test papers than is customary it was found that this was now not sufficient. The students on the pilot project were adamant in their request for detailed feedback. Possibly this was due to the fact that not only had the method of reporting on their assessment changed, but so had the assessment and the method of teaching. Therefore they needed the assurance that goes with knowing exactly where and how a particular error occurred.

Giving effective feedback to students is, in the judgement of Crooks, a most important implication in the approach to assessment. He underscores this by warning assessors to "never forget that the goal of feedback is improvement, not punishment" (Crooks, 1988 p28). From the above it

would appear that the method of reporting the results of assessment at three levels of achievement appeared to promote improvement since it certainly resulted in personal competitiveness. However, to provide reasonable, worthwhile feedback requires a demanding investment in both time and thought regardless of the method of delivery (Crooks, 1988 p8).

5.3.2 TIME REQUIRED FOR MARKING

Notwithstanding Crook's comments on the time expended to assess student performance, he also maintains that the feedback given is vital in the learning contract (Crooks, 1988 p12). Garforth and Macintosh agree, commenting that the aim of every scheme of records of achievement should be that the scheme is seen as "an indispensable aid to (good) teaching and learning rather than another administrative chore" (Garforth and Macintosh, 1986 p128 [Author's addition in brackets]). Nevertheless insufficient time appears to be a problem common to the introduction and running of virtually all schemes of profile assessment with probably the most lengthy time requirement of all being that of marking.

It was Broadfoot's belief that the clerical task of collating profiles for the SCRE Profile Assessment System would be an almost impossible task if a computer was not involved (Broadfoot, 1987 p25). Certainly the necessity of using a computer for collation was very apparent in the light of the author's own experience with the introduction and implementation of

ROSA. As has been mentioned (see 4.4.2) the system of record keeping and the collation of the test and examination marks for the 31 students on the three levels of achievement was all done by hand throughout the duration of the pilot project, which greatly increased the amount of time needed.

However, in reality it was found by the author that a large proportion of the time was actually spent on the requirement of providing each student with detailed feedback. A calculation for both marking and collating the resultant marks under each level of achievement, revealed that the author spent approximately twice the amount of time it usually took to mark a single student's test paper. For a one hour test paper for the 31 students in the Plant Protection A course the author spent over 30 hours providing the feedback and collating the results.

This was regarded as fairly excessive, especially when the Cape Technikon requirement of a minimum of three tests as well as the final examination paper is taken into account. An obvious answer to this drawback would be to reduce the amount of time spent on each test paper by providing only minimal written feedback. An alternative and possibly preferable recommendation would be to allow, when time-table planning, for the probability of extended time for post-assessment feedback and discussion.

[The author would like to note here that she has always in the past made it

a practice to provide what may (to others), be considered excessive feedback. It is therefore highly probable that firstly, in respect of the proposals for ROSA and secondly enthusiasm for the pilot project, the amount of written feedback that was given was considerably more than required. Furthermore, there was no notable reduction in the marking time of the examination paper, as might have been expected, due to the fact that it had become habitual for the author to still provide minimal feedback, regardless of the fact that the candidate would never see it. Finally, it was the author's opinion that providing more feedback than merely noting errors and correct procedures, enabled her to mark more precisely and that possibly there was an advantage to writing comments even on examination papers. Certainly in the author's estimation more may be lost than the time gained by not providing feedback on the answers].

It was fairly apparent at the end of the pilot project that the implications with regard to time were possibly a lot greater than had originally been anticipated. What was also of paramount importance was the fact that although a computer may be used to collate the raw data and in this way save hours of time, there is no method (barring MCQ) by which the marking can be done by computer. This in essence meant that without further research, there is no technique at present to reduce the time required for marking and therefore 'time' will, for the moment, remain the most important restriction to the full-scale implementation of records of student achievement.

5.4 IMPLICATIONS FOR ADMINISTRATION

Due to the fact that the introduction of ROSA in the Department of Biological Sciences was carried out by the author alone, without any administrative backup, the implications for administration by all lecturers within a department can only be extrapolated. However, as far as the author was concerned the administrative implications, with so few students (31) was not of any great significance. Notwithstanding the introduction, it was the implementation, specifically in the areas of designing the assessments and the subsequent marking and calculation of each student's levels of achievement for each test, that required an exceptional amount of time.

Nevertheless, as was reported in Chapter Four (and earlier in this Chapter, see 5.3.2) the marking alone was probably the most time consuming component of the entire system, which is especially significant when it is remembered that particular part of the scheme can not easily be aided by the use of a computer programme.

It is entirely possible that with more experience with the scheme, especially in regard to the design of the assessments, as well as marking, this problem of time could be alleviated to a certain extent. It is nonetheless paramount that one modification to the system as it was implemented by the author will certainly have to be computerization of the recording of the

individual results.

In addition consideration will have to be given to accumulating the marks attained at each level by each student (see Chapter Four) in the various assessments in order to produce a formal series of formative reports. This would be in order that ROSA could fulfil the objective of being formative in use, as well as having the summative use of the final histogram.

Other administrative implications that would have to be addressed with varying degrees of urgency would be firstly a decision on the format or design of the final record. Most of this would depend on how closely linked ROSA would be to the technikon diploma certificate. In association with this aspect would be considerations of cross-checking the accumulated figures for possible errors, together with adherence to deadlines of submission of data to the examinations office.

Ultimately the usual technikon administration-bound rules and regulations would have to be devised with regard to matters such as the handing over of ROSA, the retention by the technikon of a copy of all students' ROSA, as well as formulation of the parameters regarding accessibility to ROSA and the production of duplicate copies only with written permission of the student concerned.

Apart from the above clerical-type administrative implications there would

also be administrative implications for teaching staff. The majority of these would revolve around those time management problems which have already been reviewed in this Chapter. An exception to this could possibly be the inclusion on the official technikon timetables of 'feedback' periods allocated to the various disciplines. This would be in addition to the accepted contact time for each subject and could be used for feedback or any other formative information pertaining to the subject.

Lastly, teaching staff would have to devise an approved system whereby students, who may have been absent for a particular test or examination on technikon condoned grounds, would be provided with a 'make-up' assessment. The important consideration in this instance would be to ensure that the replacement assessment was of comparable difficulty with respect to the elements and apportionment of levels of achievement.

It would appear from the above that there are a number of administrative implications that could have had the potential to cause problems during the implementation of the pilot records of student achievement. That these did not occur was possibly due to the fact that, as mentioned previously, most of the administrative work was done by the author. However this will not always be possible as it is very likely that classes of the future will be significantly larger than the 31 students involved in the author's pilot project.

In these cases it will be interesting for teaching staff to be aware of the fact that an example of how administrative problems can be decreased by a serious and determined approach by the staff has been described by Broadfoot. "The amount of development which can be achieved in a short space of time and with an enthusiastic and committed staff can be almost frightening. From May to October 1984 there were only fifteen working weeks and yet a radically different and relatively successful faculty based assessment pattern was devised and implemented. Within two months the system had been further developed and used with a different year group" (Broadfoot, 1987 p108). Examples of this nature should provide added stimulus for teaching staff about to embark on the introduction of a different system of reporting the results of student assessment.

5.5 CONCLUSION

Although there were many problems associated with the implementation of the pilot project for the development of Records of Student Achievement, the author was satisfied that none were insurmountable and all were worth the expended effort. It is also the author's belief that there can not be many educationalists who would deny that records of achievement and related schemes are probably the most innovative and useful development to have transpired in education in the last fifty years. In Broadfoot's judgment many teachers gain considerable fulfilment from being able to offer an authentic alternative "to the examinations that so many must fail",

in short, "those who have had experience in some kind of profiling scheme are sufficiently convinced of its value to keep going" (Broadfoot, 1987 p1).

CHAPTER SIX

RECOMMENDATIONS FOR ROSA AT THE CAPE TECHNIKON

6.1 INTRODUCTION

The fact that records of student achievement in Higher Education have begun to attract considerable interest, particularly in the United Kingdom, is evidenced by an increasing number of publications, conferences and workshops related to this aspect (Assiter and Shaw, 1993). Some of this interest has been motivated by the "growing emphasis being placed by both educators and employers on the development of autonomy in learning" (Stephenson, 1993 p15). However, according to Cooke and Taylor, the attention has been stimulated by the fact that since the early 1990s (in the United Kingdom) most of the school-leaver entrants at higher education institutions have already been in possession of records of achievement (RoAs). As a rule most (of these students) have been using their records since entry to secondary education and some even from the time of their entry into the school system (Cooke and Taylor, 1993 p64).

This supports the belief held by Garforth and Macintosh that a well designed profile or records of achievement scheme "can substantially improve the quality of the whole teaching/learning experience for everyone" (Garforth and

Macintosh, 1986 p135). It stands to reason, therefore, that these students would be apt to have similar expectations of autonomy, joint negotiation and goal setting with regard to self-assessment for their higher education experience (Cooke and Taylor, 1993 p64).

Clearly on the above grounds there would seem to be little to oppose and much to gain from the future incorporation of records of achievement schemes into higher education. Nevertheless, there are reports that "tutors in many schools and colleges are concerned to see evidence from HE [Higher Education] of appropriate interest in RoAs before committing the necessary time and resources to their continued development" (Gretton, 1993 p38). This is in the author's opinion indeed a sad state of affairs. We have a 'new' development with substantial potential, in terms of its application, yet there are apparently those who would rather wait for the development of the chicken from an egg. According to Gretton "schools/colleges would develop RoAs if HE was demonstrating genuine interest; HE would be taking them more seriously if the frequency with which they were presented with RoAs was increasing significantly" (Gretton, 1993 p38).

It is also possible that the hesitation on the part of some educators may be due to prior experience of fools rushing in where angels fear to tread. In 1986 Garforth and Macintosh cautioned against excessive exuberance with regard to the attendant benefits of records of achievement. Their warning was that benefits are very much related to the amount of time and effort that is put

into the preparation and the initial design of the scheme (Garforth and Macintosh, 1986 p135). On this basis one can possibly understand the hesitancy shown by some. However perhaps this will be solved by the fact that, in the United Kingdom at least, by the year 2000, almost all school-leavers will be entering higher educational institutions with records of achievement.

Supported by the above facts and with the objective of obviating as many potential problem areas as was possible, it was crucial to the pilot project that certain factors and parameters were established right from the start. Primarily these were seen to be: what would in fact comprise the proposed Records of Student Achievement (ROSA) and how could the scheme be designed so as to report the results of conventional student assessment in a way that would:

- * firstly, achieve the main aim of being of more benefit than is currently the position in technikon education?

- * secondly remain within the currently accepted parameters of assessment procedure as laid down by the academic Department and the Technikon rules and regulations.

6.2 INTRODUCING CHANGE TO THE TECHNIKON SYSTEM

From inception, ROSA was designed to only take cognizance of the results of assessments currently in use in the Department of Biological Sciences. No

attention was to be given to reporting any of the students' personal attributes and achievements as is the situation with many of the schemes in the United Kingdom (the reasons for this were outlined in Chapter Three).

With regard to introducing changes to the Technikon system to accommodate ROSA it is important to at this stage note that, with time, new developments in accountability, assessment of performance, and informal assessment techniques will in all likelihood alter the above original parameters of the pilot project. This will be the time when very serious consideration will have to be given to the inclusion in ROSA of information that is of a more personal nature.

Until the above situation is reached it is the author's opinion that in order for ROSA (or a similar scheme) to be successfully implemented throughout all the diplomas and courses, three fairly major changes would have to take place. If, all three could be effected prior to any comprehensive implementation, it would resolve most 'potential problem areas' which would in turn undoubtedly lessen the possible obstacles that have been advanced in this thesis.

Firstly, purely on the financial side, would be the significant amount of money that would have to be allocated to pay for the expertise and time spent ensuring that the lecturers, who will administer the scheme, are fully conversant with all aspects pertaining to ROSA. (see later 6.3).

Secondly, 'time' itself is one of the more important, if not the most important parameter that will need to be urgently addressed prior to the implementation of ROSA. The hierarchy of the Technikon will have to be made aware that previously established requirements for teaching contact time may, in some instances, have to be revised (especially in consideration of global policies towards larger classes). It is the author's conviction that sufficient time, (not necessarily contact time) for preparation and administration of the scheme will have to be given absolute priority if the scheme is to be successfully implemented. Virtually all other authors who have had working experience of records of achievement support this contention. It is further confirmed by the author's own experiences with the pilot project (see Chapter Five).

Thirdly, the administration of the Technikon will themselves have to be fully conversant with the system of ROSA as administratively it represents a significant departure from the currently established methods reporting the results of assessment. It is often the unfortunate situation that 'new ideas' can be mismanaged somewhere along the line from initial inception to final implementation. Generally, the root cause is simple inexperience of either the particular system or pure ignorance as to the intent of the system. It is the author's hope that, if accepted for implementation into the Technikon, or any other educational institution, this does not happen to ROSA.

Finally, with reference to the above and in recognition of the constraints of pre-determined timetables, lecturing loads and availability of staff the

following four guidelines have been suggested in order to facilitate the introduction of ROSA to students outside of the Plant Protection A course:

1. Training sessions to ensure that lecturers involved in the scheme are completely familiar with the procedures to be followed. (As mentioned in Chapter Three, most documented failures of records of achievement systems cite ignorance as the primary cause).

2. A specified time that is initially granted for staff to establish relevant elements of the syllabi and determine accurate levels of achievement with reference to projected assessment.

3. Scheduled time following implementation of the scheme to each course to assess the procedures and/or solve problems that teaching staff may have experienced. (This is considered invaluable for future implementations).

4. Time allocated for the express purpose of the collation of the assessment results for each student prior to compilation of ROSA.

[It must be remembered that for final semester students ROSA are summative documents which include the final examination marks. Under the current system, compilation of ROSA will only be able to be completed once final examination scripts have been marked, moderated

and the final results released by the examinations office. It is highly probable that this could effectively extend the usual end-of-semester date].

Last, but by no means least, will be the question of how, with an ever increasing lecturer-to-student ratio, it will be possible to meet probably one of the major requirements of records of achievement schemes, that of recognizing the individual? It is to be hoped that any expansion of the scheme to include the other dimensions as proposed above may necessitate a restructuring of existing systems, which could simultaneously address the important issue of student numbers.

All of the above considerations are deemed to be important. To introduce a records of achievement scheme without the fundamental requisites and clear recognition of the mistakes and errors of others would be worse than to leave all well alone. Broadfoot has warned that no innovation can "hope to be successful if those responsible for implementing it are confused or doubtful about its value" (Broadfoot, 1987 p1).

6.3 STAFF DEVELOPMENT THROUGH ACTION RESEARCH

It can not be argued that in the 1990s, teaching staff of any educational milieu in the world would be found not wanting to offer quality education. However, what can be, and often is, argued is the lack of time at the disposal

of teaching staff to enable them to contribute effectively to, or become directly involved in, educational research-based developments (towards quality education). On the other hand it should be obvious that only teaching staff can practically evaluate actions, and similarly understand the actual effects of those actions (Walker, 1993 p49), particularly if they affect staff development. Yet, in practice how often are practitioners voluntarily involved in their own developmental initiatives?

The truth of the matter is that although pressure of work is often cited as a reason for the dearth of staff self-development involvement, this can also be linked to the apprehension towards any form of self-assessment or measurement that has a possibility of resulting in an unfavourable consequence for the researcher. The teaching of subject matter versus the professional development of teaching seems to have had a history of evoking defensive, negative emotions of fear with an attendant belief in maintaining absolute secrecy as to the real scenario found in each class-room.

It is in these circumstances that action research, described as where "the action and the research are happening at the same time" (Walker, 1993 p50) can be so valuable. The benefits of action research are that by involving both action and research together, action can be (in fact must be) taken during the research, by the researcher to avoid forthcoming problems. The end result is a cyclical pattern of planning, acting, reflecting, and evaluating (Elliott, 1981) none of which can be considered to be in any way threatening. In fact, as it

is the teacher who is responsible for the research, it is he or she who is in charge and therefore able to monitor the situation to address the issues at hand in a non-threatening manner.

In the case of staff development through action research the researcher becomes involved in taking evasive or positive action as the situation demands. The results are that not only is the research effectively carried out, but most of the problem-solving is completed along side it. With reference to the development and implementation of ROSA, the author found herself, entirely due to the requirements of the implementation, obliged to:

- * develop new (to her) teaching methods;
- * evaluate, and where necessary, re-structure the Plant Protection A course syllabus;
- * alter existing, and devise different methods of assessment especially with reference to the higher cognitive levels;
- * re-affirm and in some aspects, acquire a broad and deep knowledge of the subject matter.

Most practitioners should recognize that all of the above could be considered to be part and parcel of fundamental staff development. It is also the author's opinion that virtually all are viewed by most teaching staff as being:

- * time-consuming, with little or no obvious return;

* tedious, with the notion that in most cases, 'it' has waited so long, it can easily wait till later, (much later), or, until either another member of staff, or oneself is absolutely required to do it;

* negatively-based, with possible job or ability-threatening overtones.

Yet, the author carried out all of the above requirements without any particular realization of what she was actually achieving. Development through action research took place in firstly, a non-threatening manner and secondly in an enjoyable and enlightening atmosphere (see Chapter Four). It could be stated then, that the development and implementation of ROSA created an ideal platform on which could be established firm proposals for an action research-based staff development programme.

The changes to be introduced to the Technikon in order to facilitate the implementation of ROSA involved time as well as adequate staff development (see 6.2). It is important to note here that those requirements are not made redundant by the above proposal for staff development through action research. The original reasons for those requirements remain, they are to avoid other teaching staff experiencing some of the problems of implementation that were encountered by the author.

With the above in mind, together with the requirements for staff development the author would like to submit that the following condition be specified as a prerequisite for all staff involved in teaching students who will receive

ROSA.

* either a minimum number of two years experience in their specific field, or a period of experiential training equal to, but not less than the period of time their students are exposed to for the practical component of the appropriate diploma.

There should be no exceptions to this condition. It must be evident by now that the basis of ROSA rests on the teacher being able to distinguish not only the various elements in a certain discipline but also being able to evaluate different levels of achievement. This can only be achieved with a deep and broad knowledge of, or experience in, the practical aspects of a particular discipline.

6.4 NEED TO RE-EVALUATE CURRENT ASSESSMENT PRACTICES

The need to re-evaluate current assessment practices has by now been fairly well established (see Chapter Two): "a single grade at the end of five years work seems a poor return for the investment" (Harrison, 1983 p49). It is Harrison's belief that this argument starts from the erroneous premise that what is tested in the examination papers is a true reflection of the whole school course. He claims that the "present public examinations are achievement tests and therefore assess the candidate's present status in the subject without being concerned in detail with how s/he reached it" (Harrison, 1983 p49).

In support of Harrison's view Klug reports that in 1969 the Committee of Vice Chancellors and Principals remarked upon the convention demanding the award of a single grade which is inevitably derived from a number of evaluations of different qualities and accomplishments. Furthermore they acknowledged that not only was detail lost but that the "process of aggregation would seem to involve a distortion of at least some of the data aggregated" (Klug, 1976 p199). In fact it was Klug's opinion that careful consideration should be given to the notion that "even if all aggregation procedures were uniform and perfect what does an aggregated grade *mean*?" (Klug, 1976 p199). Primarily the pilot project sought to address this question with the particular aim of creating a system of records of achievement that could provide part of the answer for both students and prospective employers.

However, if in the future records of achievement are to play any bigger role than at present, which is merely to reflect the results of the achievement in a different way, then a new approach to curricula design and development will be required. This, according to Harrison, should be "one which attempted to define elements as tasks rather than as groupings of skills and abilities" (Harrison, 1983 p49). Re-evaluation of the current assessment practices would then have to be made along the lines of defining how the higher levels of achievement, those of evaluation and creativity, could be adequately described. If successfully achieved, the results of this type of re-evaluation could change the outlook not only to assessment but to student learning and ultimately the value attached to the results.

One of the factors that will have to be understood is that at present, a student often begins with the "expectation that knowledge consists of right answers, one per problem, and his teacher will tell him what they are. Later on he may recognize that teachers appear to be presenting several right answers to the same question, but he assumes this is a teaching technique to help him find the real right answer for himself. It is some time before he conceives of knowledge as relativistic and dependant on context, and comes to see that several answers can be right, not because 'everyone's entitled to his opinion' but because they can be justified in particular frames of reference" (Rowntree, 1981 p27 [Author's emphasis]). It is the author's opinion that until teachers start to teach students the relativity of problems it will be difficult to attach much significant value to the results of assessment as predictors of future ability and achievement.

There are numerous other changes that could be made to current assessment practices, all of which could have a considerable effect on both examining boards and the views of potential employers. Notwithstanding these, one of the most important developments that could influence teaching and therefore teachers and students, is the suggestion that ROSA and other similar schemes could be designed to be curriculum-led. If this was to be the case it could in turn provide a good basis for internal checks on standards. In a curriculum-led student assessment "the quality of the profile is related to the quality of both the curriculum and the individual assessments. A poor-quality curriculum in terms of content, design or implementation is not likely to produce a useful

profile, however accurate the assessments appear to be. Similarly, poor-quality assessments based on well-designed curricula are also unlikely to produce worthwhile profiles or records of achievement" (Mansell, in Broadfoot, 1986 p27).

Garforth and Macintosh also believe in the importance of planning the profile and assessment objectives jointly with the curriculum as they claim it "will lead to large-scale improvement in the quality of the education provided because it will unify the total educational experience for everyone concerned" (Garforth and Macintosh, 1986 p112).

This in essence means that for ROSA, or any similar scheme to be of value, it must take into consideration not only the methods used to report the assessment but also the quality of the assessment itself. As has been reported on in Chapter Four and referred to in Chapter Five, this is what occurred during the implementation of ROSA. The author found that the quality of the assessments that had been used for some time was not at all suitable for use for the three levels of achievement, and virtually all assessments were redesigned. This was not only an important development for ROSA but it was also very significant for the Plant Protection A course as it meant that the author was learning first hand "the involvement of teachers in matching assessment with teaching and learning" (Harrison, 1983 p50). The implication is that a re-evaluation of current assessment practices should result in lecturers assessing what is taught and not in teaching what they plan

to assess.

Finally, recommendations for re-evaluating current assessment practices would not be complete without including the criteria that were considered important and appropriate for inclusion in ROSA by both the surveyed third semester students and the prospective employers. (see Chapter Four, 4.2 and 4.3).

6.5 AREAS FOR FUTURE RESEARCH

One of the essential areas for future research is in the actual methods of assessment. It is not necessarily the number of assessment procedures that makes for an improved assessment, it is rather the methods themselves. For example, Garforth and Macintosh hold the view that one of the greatest "dangers of assessment is *overkill* - the 'if it moves assess it' syndrome". They say that assessment "should never become simply a trawling expedition in the hope of catching something. It must always have a clearly understood purpose" (Garforth and Macintosh, 1986 p86).

Analogous to this is Evans's report that DES has expressed concern that in the hands of inexperienced or uncommitted teachers there could be problems of 'fragmentation' of the curriculum due to the profiling inducing 'teaching to the test' (Evans, in Broadfoot, 1986 p172). This particular aspect has worried the author as well, as it is her opinion that staff inexperienced as teachers

could at first find it difficult to deal all at once with the many implications associated with implementing and teaching for ROSA.

It has been suggested by Harrison that re-evaluation of current assessment practices could result in new approaches to curriculum design (Harrison, 1983 p49). On the same basis, research into virtually any aspect of records of achievement could "help to ensure that the curriculum is kept in the foreground, since defining the content of the elements in such a way as to provide for useful and differentiated information requires a constant questioning of the learning which has gone before and careful planning of the methods of assessment which follow" (Harrison, 1983 p36). This could be very beneficial for raising questions about learning and assessment in higher education and would most certainly provide many areas for future research.

Lastly, with reference to the validation of ROSA with employers (see Chapter Four) the first students to receive ROSA are (at the time of writing this thesis) still in the process of completing their year's experiential training prior to enrolment for their final practical examination. This means that virtually none of them have really had any opportunity to use their ROSA and consequently very few prospective employers of horticulture diplomates will have become acquainted with ROSA.

It is proposed however that notwithstanding the very necessary external validation and approval of ROSA, an internal validation procedure could be

accomplished within a shorter time period. In the beginning this could be achieved by the Department of Biological Sciences initially establishing a validating board drawn possibly from its own and other technikon staff members. Included on the board could also be members of teaching committees and other boards that currently exist to deal with teaching matters, such as the Committee for Academic Standards.

This 'local' validation would then, at a later stage, apply for accreditation through the South African Certification Council for Technikon Education (SERTEC), who currently appoint teams of external evaluators to inspect individual programmes in order to certify that they are adhering to minimum standards. This proposal would be in line with Burgess and Adams' statement that accreditation is an "independent and distinct process from validation" (Burgess and Adams, in Broadfoot, 1986 p85). According to them accreditation should only be undertaken by professionals with an accrediting board acting as external examiners to ensure the objectivity and reliability of procedures used to produce the records (Burgess and Adams, in Broadfoot, 1986 p85-86).

6.6 SUMMARY

There are as many variable accounts of how assessment usually fails to fulfil its promise as there are good and valid reasons why this is so. However, the author feels that some reflection must be given to the concept that there may

in fact be an intrinsic reason for the almost 'guaranteed' failing of the traditional assessment reporting methods of the past. Generally the most common complaint, especially from potential employers, was that the reported results did not tell them much other than a final mark. Now that records of student achievement are becoming more common, especially in the United Kingdom, and hopefully the same will occur in South Africa, we may be forced to take a deeper look into our methods of assessment.

It is not unreasonable to assume that some of the actual characteristics of the methods themselves are the real reason, and could in fact be a basis for many of the reported shortcomings of the system. For example, it is fairly generally accepted that the purpose of assessment is to see if the student knows what he is supposed to know according to what is in the syllabus. Assessments bound by parameters such as these can not possibly test the student who, for example, knows more than is in the syllabus. Equally, a knowledge-bound assessment (as most are) cannot test for application or evaluation of that knowledge other than that which can be found to be specified in the syllabus. Basically our current assessment practices are themselves curriculum-bound and until this is corrected there is really very little hope that methods of assessment will take a turn for the better. According to Boyce, in 1987, the guiding principle of the Wits Faculty of Science committee, investigating teaching was:

"It is NOT what we teach that is important, it is what the student LEARNS that counts" (Boyce, 1987 p3).

It is believed by the author that the object of ROSA - to produce 'extra' information that would be of more practical and real value to end-users such as the students and potential employers - has indeed been achieved. This is especially so when it is considered that one of the typical characteristics of the examination system has been the tendency to try to establish what the student might **not** know, as opposed to trying to quantify or assess what the candidate does know. According to Stansbury, examinations "make people think about their weaknesses. The process of compiling a personal record makes people think about their strengths and how to develop and to use them" (Stansbury, 1978 p4) to their best advantage.

Crooks ends his book on "Assessing Student Performance" with two quotations, one of which is from Stanford C. Ericksen, which emphasizes the choice Crooks made in concentrating on the impact that assessment has, as opposed to paying attention to the details involved in the construction of assessment exercises. The author would like to emulate his accent by also quoting Ericksen:

"The only instructional shortfall greater than teaching obsolete or trivial information is testing and grading the achievement of this knowledge. An examination is a revealing statement by a teacher about what is important in the course" (Ericksen, 1983 in Crooks, 1988 p29).

It is the author's hope that the advent of records of student achievement will

herald the day that examinations will test and reveal what is important in a course.

BIBLIOGRAPHY

- ASSITER, A. and SHAW, E. (Eds) 1993.
Using Records of Achievement in Higher Education. London, Kogan Page.
- BAUMGART, N. 1986.
An Outside Observer's View of Profiles in Britain. In Broadfoot, P.M. (Ed) **Profiles and Records of Achievement - A Review of Issues and Practice.** London, Holt, Rhinehart and Winston Ltd. 42-61.
- BLOOM, B.S. 1956.
A taxonomy of educational objectives: Handbook I, the cognitive domain. New York, Longmans.
- BOYCE, A.N. 1987.
Integrating assessment into teaching and learning. **Technikon Natal Forum**, 3(1), 1-15.
- BOYCE, A.N. undated.
Assessment and Evaluation in Education Lecture 13. **Association for the Study of Evaluation in Education in Southern Africa**, 1-9.
- BROADFOOT, P.M. 1979.
Assessment, Schools and Society. London, Methuen & Co.
- BROADFOOT, P.M. (Ed) 1986.
Profiles and Records of Achievement - A Review of Issues and Practice. London, Holt, Rhinehart and Winston Ltd.
- BROADFOOT, P.M. 1987.
Introducing Profiling - A Practical Manual. London, Macmillan Education Ltd.
- BURGESS, T and ADAMS, E. 1986.
Records for All at 16. In Broadfoot, P.M. (Ed) **Profiles and Records of Achievement - A Review of Issues and Practice.** London, Holt, Rhinehart and Winston Ltd. 76-87.
- COOKE, L. and TAYLOR, M. 1993.
Maintaining the Ethos of Records of Achievement in the Higher Education Curriculum and Assessment. In Assiter, A. and Shaw, E. (Eds) **Using Records of Achievement in Higher Education.** London, Kogan Page. 63-68.

- CROOKS, T.J. 1988.
Assessing Student Performance. Kensington, Higher Education Research and Development Society of Australasia.
- CURZON, L.B. 1985.
Teaching in Further Education. London, Holt, Rinehart and Winston Ltd.
- DE GROOT, R. 1986.
 Pupils' Personal Records. In Broadfoot, P.M. (Ed) **Profiles and Records of Achievement - A Review of Issues and Practice.** London, Holt, Rhinehart and Winston Ltd. 88-108.
- DEPARTMENT OF EDUCATION AND SCIENCE, 1984.
Records of Achievement: A Statement of Policy. London, HMSO.
- DOCKRELL, W.B. 1989.
 The changing face of educational assessment. **Journal of Curriculum Studies**, 21(5), 478-480.
- EGGLESTON, J. (Ed) 1979.
Assessment, Schools and Society. London, Methuen & Co.
- EISNER, E. W. 1993.
 Reshaping assessment in education: some criteria in search of practice. **Journal of Curriculum Studies**, 25(3), 219-233.
- ELLIOTT, J. 1993.
 Action-research: a framework for self-evaluation in schools. **Teacher-Pupil Interaction and the Quality of Learning.** Cambridge, Schools Council Project, Working paper 1.
- ELTON, L.R.B. and LAURILLARD, D.M. 1979.
 Trends in Research on Student Learning. **Studies in Higher Education**, 4(1), 87-102.
- ENGEL CLOUGH, E., DAVIS, P. and SUMNER, R. 1984.
 Pupil assessment - an Interim Report on the findings of the NFER 'Assessment procedures in schools project'. **Journal of Curriculum Studies**, 16(2), 200-202.
- ENTWISTLE, N.J. 1992.
 Influences on the quality of student learning - implications for medical education. **South African Medical Journal**, 81, 596-606.

- EVANS, A. 1986.
Pupil Profiles and Records of Achievement: an NUT perspective. In Broadfoot, P.M. (Ed) **Profiles and Records of Achievement - A Review of Issues and Practice**. London, Holt, Rhinehart and Winston Ltd. 169-182.
- GARFORTH, D. 1986.
Instituting Records of Achievement at County Level In Broadfoot, P.M. (Ed) **Profiles and Records of Achievement - A Review of Issues and Practice**. London, Holt, Rhinehart and Winston Ltd. 135-145.
- GARFORTH, D. and MACINTOSH, H.G. 1986.
Profiling: A User's Manual. Cheltenham, Stanley Thornes (Publishers) Ltd.
- GIBBS, G., HABESHAW, S. and HABESHAW, T. 1986.
53 Interesting Ways to Assess Your Students. Bristol, Technical and Educational Services Ltd.
- GIBBS, G. 1991.
Eight myths about assessment. *The New Academic*, 1(1), 1-4.
- GRETTON, R. 1993.
Records of Achievement and Admissions to Higher Education. In Assiter, A. and Shaw, E. (Eds) **Using Records of Achievement in Higher Education**. London, Kogan Page. 33-40.
- GRONLUND, N.E. 1976.
Measurement and Evaluation in Teaching. New York, Macmillan Publishing Co.
- HAMBLETON, R.K. 1990.
Criterion-referenced Assessment in Evaluation. In Walberg, H.J. & Haertel, G.D. (Eds) **The International Encyclopedia of Educational Evaluation**. Oxford, Pergamon Press. 113-118.
- HARGREAVES, A. 1986.
Record Breakers? In Broadfoot, P.M. (Ed) **Profiles and Records of Achievement - A Review of Issues and Practice**. London, Holt, Rhinehart and Winston Ltd. 203-227.
- HARRISON, A.W. 1983.
Profile reporting of examination results. Schools Council Examinations Bulletin 43. London, Methuen Educational.
- HER MAJESTY'S INSPECTORATE, 1983.
Curriculum 11-16: Towards a Statement of Entitlement. London, HMSO.

- HITCHCOCK, G. 1986.
 Instituting Profiling Within a School. In Broadfoot, P.M. (Ed) **Profiles and Records of Achievement - A Review of Issues and Practice**. London, Holt, Rhinehart and Winston Ltd. 146-165.
- KIRSCH, R. 1992.
 They know enough who know how to learn. **South African Medical Journal**, 81, 587.
- KLUG, B. 1976.
 To Grade, or not to grade. **Studies in Higher Education**, 1(2), 197-207.
- KRIGE, P.D. and DUKE, D.A.R. 1992.
 The Post Graduate Training of Metallurgical and Chemical Engineers. **South African Society of Co-operative Education News**, November 1992.
- LEWY, A. 1990.
 Formative and Summative Evaluation. In Walberg, H.J. & Haertel, G.D. (Eds) **The International Encyclopedia of Educational Evaluation**. Oxford, Pergamon Press. 26-28.
- MANSELL, J. 1986.
 Records of Achievement and Profiles in Further Education. In Broadfoot, P.M. (Ed) **Profiles and Records of Achievement - A Review of Issues and Practice**. London, Holt, Rhinehart and Winston Ltd. 24-32.
- MEYER, E. and VEENSTRA, A. 1980.
Teaching Bread and Butter: A practical guide to effective teaching and learning. Johannesburg, McGraw-Hill Book Company.
- MORTIMORE, P. and KEANE, A. 1986.
 Records of Achievement. In Broadfoot, P.M. (Ed) **Profiles and Records of Achievement - A Review of Issues and Practice**. London, Holt, Rhinehart and Winston Ltd. 65-75.
- NUTTALL, D.L. 1981.
 How should we grade public examinations? Paper given at BERA Annual Conference, mimeo. 1-9.
- NUTTALL, D.L. and GOLDSTEIN, H. 1986.
 Profiles and Graded Tests: the Technical Issues. In Broadfoot, P.M. (Ed) **Profiles and Records of Achievement - A Review of Issues and Practice**. London, Holt, Rhinehart and Winston Ltd. 183-202.
- PARSONS, P.G. 1985.
 Assessment. **Cape Technikon TDU/EVO Newsletter**, September, 1-4.

- PARSONS, P.G. 1987.
Are our educational programmes moving in the right direction? **Cape Technikon TDU/EVO Newsletter**, March, 1-2.
- PASTOLL, G. 1992.
Students and Standards: How Written Examinations Hold Us All Back. University of Cape Town.
- PEARSON, G. 1986.
A Network of Profiles. In Broadfoot, P.M. (Ed) **Profiles and Records of Achievement - A Review of Issues and Practice.** London, Holt, Rhinehart and Winston Ltd. 33-41.
- RACE, P. 1992.
Need More Mean Worse. **The New Academic**, 2(1), 1-5.
- ROWNTREE, D. 1981.
Developing Courses for Students. Maidenhead, McGraw-Hill.
- ROWNTREE, D. 1987.
Assessing students: How shall we know them? London, Kogan Page Ltd.
- SHAW, F. 1991.
Association for the Study of Evaluation in Education in Southern Africa. Forum, (10), 9.
- STANSBURY, D. 1978.
A new source of information about school leavers. RPA and Swindon Education Committee Curriculum Study and Development Centre.
- STEPHENSON, J. 1993.
Preface. In Assiter, A. and Shaw, E. (Eds) **Using Records of Achievement in Higher Education.** London, Kogan Page. 15-16.
- STRATTON, N. 1986.
Recording Achievement: the City and Guilds Experience. In Broadfoot, P.M. (Ed) **Profiles and Records of Achievement - A Review of Issues and Practice.** London, Holt, Rhinehart and Winston Ltd. 109-126.
- STRATTON, N. 1985.
Profiling Systems. London, CGLI.
- TATE, A. 1991.
Dangerous Enterprise. **The New Academic**, 1(1), 7-9.

VAN RENSBURG, C.J.J., KILIAN, C.J.G. and LANDMAN, W.A. 1981.
Fundamenteel-Pedagogiese Begripsverklarings - 'n Inleidende Oriëntering Notes on Fundamental-Pedagogic Concepts - An Introductory Orientation. Pretoria, N.G. Kerkboekhandel.

WALKER, M. 1993.
Research-based staff development. **South African Journal of Higher Education**, 7(3), 49-53.

WILLMOTT, A. 1986.
The Oxford Certificate of Educational Achievement. In Broadfoot, P.M. (Ed) **Profiles and Records of Achievement - A Review of Issues and Practice**. London, Holt, Rhinehart and Winston Ltd. 127-134.

WOLF, A. 1991.
Assessment in European vocational education and training: current concerns and trends. **Journal of Curriculum Studies**, 23(6), 552-557.

APPENDIX A

TEXT OF PREAMBLE GIVEN TO HORTICULTURE STUDENTS

Note: At the start of Chapter Two, emphasis was placed on clarifying the use of the word 'profile' in this project. When the following preamble was given to the students the distinction between the two uses of the word was explained [see text below]. However the potential conflict in meaning of the word as it has already been used at the Cape Technikon had not been determined, hence the use of the term in the text of the preamble (Appendix A), the student questionnaire (Appendix B), the employer questionnaire (Appendix C) and the letter sent to the employers to accompany the questionnaire (Appendix D).

Preamble given to the final semester horticulture students in November 1991 prior to their completion of the questionnaire on student profiles or records of achievement.

"Some of you may have heard of the term 'profile' or 'profiling'. However, this was most probably in connection with compiling a profile of, for example, a typical horticulturist whereby the most common attributes, traits and other characteristics and individual requirements of the profession are ascertained and selected to form a 'profile of a classic horticulturist'. The resultant 'standard' is then applied as part of the initial student selection process for enrolment in the Department of Horticulture at the Cape Technikon.

The profiles I would like to compile are very different in that they are summative profiles of the 'end-product' - i.e. a report of all the assessments that have been carried out over the period of a student's studies. The result of this would be that each student would receive his/her own profile as a

record of their (final year) years of study at the Cape Technikon.

The profile would be compiled from data such as individual test, assignment, project and examination marks in each subject and would be recorded together with a list of topics or sections of the syllabus that were covered by the various assessments. Also included would be details of separate practical skills and, I am hoping, some personal attributes.

In short, therefore, the profile would be a summative record of each student's own individual achievement over the period covered by the profile. As such it would establish officially exactly what a particular student had done and how he/she had achieved this. The aim of a profile is to be concise, accurate, positive and probably most importantly, a useful document to accompany the regular diploma certificate".

APPENDIX B

STUDENT QUESTIONNAIRE

Note: The following questionnaire (Appendix B) was originally designed to be given to all students (i.e. first, second and, as the diploma was then structured, third semester students, as well as higher diploma students in the Horticulture and Nature Conservation sections of the Department of Biological Sciences - hence questions 3, 4 and 5). However due to time restrictions at the end of the semester it was only given to final year (third semester) horticulture students in November 1991).

QUESTIONNAIRE ON STUDENT PROFILES/RECORDS OF ACHIEVEMENT

Please mark with a tick, or complete the following questions:

1. Age: 17-19; 20-22; 23-25; 26-28; 29-31; 32+.

2. Sex: Male; Female.

3. Course: N.D.; N.H.D.; Other; (please specify).

4. Year of current study: 1; 2; 3; 4.

5. Semester and year of intended completion: 1; 2; 199..

6. Previous tertiary educational qualifications attempted:

.....
.....

7. Previous tertiary educational qualifications obtained and from which institution:

8. Intended employment sector on completion of your diploma:

Transnet; Eskom; Municipality; Private; Own business.

9. Have you ever before obtained a testimonial? Yes; No.

10. If the answer to the above Yes, from whom was it obtained?

School teacher; Employer; Relative; Friend;

Business connection; Other; (please specify)

11. If a profile/personal record of achievement (PRA) was available to you, whom do you think it would most benefit?

Self; Employer; Both.

12. Having heard and understood the preamble to this questionnaire with regard to profiles as records of personal achievement - would you like to have such a profile?

Yes; No.

13. Please briefly give your reasons for your answer above.

.....
.....
.....
.....

14. If you had known that all your marks and activities during your current technikon studies were forming part of a personal record of achievement, would you have employed any different study procedures?

Yes;

No.

15. If possible, please explain your answer above.

.....
.....
.....
.....

16. Which of the following criteria would you like to see on a student profile?

(Please tick)

(i) individual marks for tests, assignments, projects and other assessed work.

(ii) summary of the topic(s) covered by each of the above.

(iii) break-down of practical skills eg. drawing ability; calculations; dumpy level; calibration

(iv) personal attributes eg. punctuality; neatness; professionalism.

(v) any other

.....
.....
.....
.....

APPENDIX C

EMPLOYER QUESTIONNAIRE

1. Do you agree that the traditional method of reporting examination results is inadequate for your purposes as a prospective employer?

Yes

No

2. Do you think that a profile of achievement as outlined would assist you in employee selection?

Yes

No

3. Are there any other personal qualities that you would like to see included in the comment section on attributes?

Yes

No

4. If answer to the above in the affirmative, please list these qualities below.

.....
.....
.....

5. Do you have any further suggestions you would like to make in regard to the proposed profiles/records of student achievement?

.....
.....
.....
.....

Please return to Mrs V A Potterton, School of Life Sciences, Cape Technikon,
P O Box 652, Cape Town 8000 before 31 March 1992.

APPENDIX D

COVERING LETTER TO PROSPECTIVE EMPLOYERS

Department of Biological Sciences
Cape Technikon
P O Box 652
8000 CAPE TOWN
12 February 1992

Dear Sir

I am a lecturer in the Department of Biological Sciences at the Cape Technikon, lecturing Plant Protection for the National Diplomas in Horticulture; Landscape Technology and Parks and Recreation Management.

I have started work on an educational research project looking into more detailed reporting of students' individual attributes and academic achievements with the aim of producing a profile or record of achievement for each student.

The present examination system involves totalling and averaging scores/marks achieved in tests, projects and assignments. This semester mark is added to the examination mark and a single overall mark is awarded to each candidate.

This global mark unfortunately gives the prospective employer no idea as to the individual students' strengths and weaknesses. To illustrate this please consider the following example based on three tests (excluding projects or examination).

	Test 1	Test 2	Test 3	Total	Average
Student A	39	87	75	201	67%
Student B	55	49	97	201	67%
Student C	65	69	67	201	67%

If, in the above example, knowledge, application and evaluation were tested in the respective three tests, then clearly student B is able to evaluate a situation or problem far better than students A and C.

Prospective employers looking for evaluative skills could make better informed judgements on this type of information which are not possible from an averaged mark of 67%.

The proposed profile or record of achievement would also include comments on observable attributes such as communication; initiative; interest and enthusiasm; literacy; practicability and presentation of work. For example, under the attribute of "interest and enthusiasm" an appropriate comment would be selected by the lecturer from a bank of comments as follows:

- * always works with interest; is a lively and eager participant
- * usually shows interest and enthusiasm
- * is reasonably interested in this subject

It is hoped that the student profile of achievement will ultimately be of value to you as a prospective employer. In order to have input from yourself I would be grateful if you would complete the enclosed questionnaire and return it to me in the reply-paid envelope before the end of March 1992.

Thanking you in anticipation of your co-operation in this research project.

Yours sincerely

VAL POTTERTON

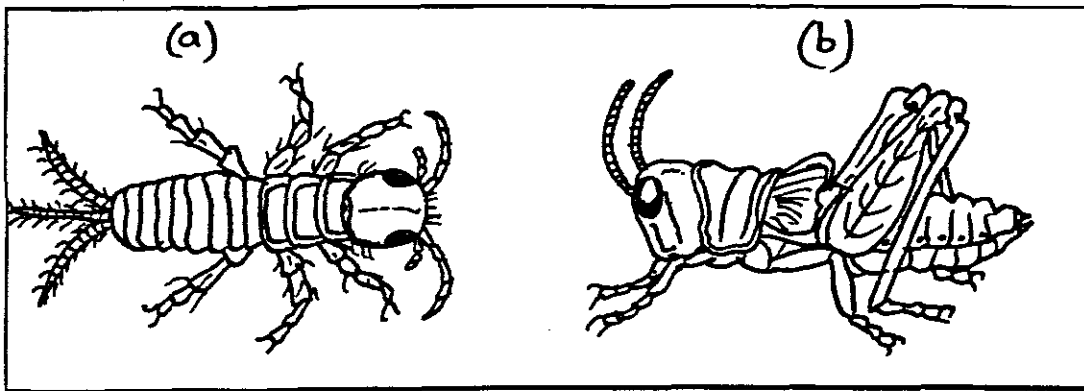
APPENDIX E

PLANT PROTECTION A TEST I

Note: Although Levels one to three are displayed in italics for each question in Appendices E to H, the author would like to point out that this was for purposes of the thesis only, as this information was not included in the original assessments.

Question 1

Below are drawings of two insects:



1.1 Decide which of these is apterygota and which is pterygota. (1)

1.2 What criteria did you use to come to the above decision? (2)
[Level 1]

Question 2

The manager wishes to fumigate a glasshouse using methyl bromide. He has suggested that fumigation be for two hours.

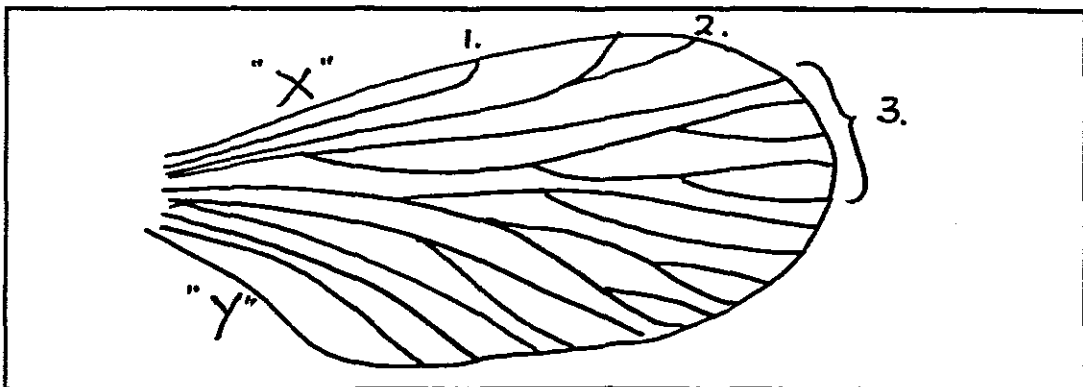
2.1 Why is this period too short? (1)

2.2 How does an insect respond to fumigation? Explain your answer by referring to the respiratory system of insects. (6)
[Level 3]

Question 3

3.1 In the sketch below, name the three marked veins.

(3)



3.2 In the same sketch above, what are the functions of the areas marked "X" and "Y"?

(4)

[Level 1]

Question 4

In the two sketches below:

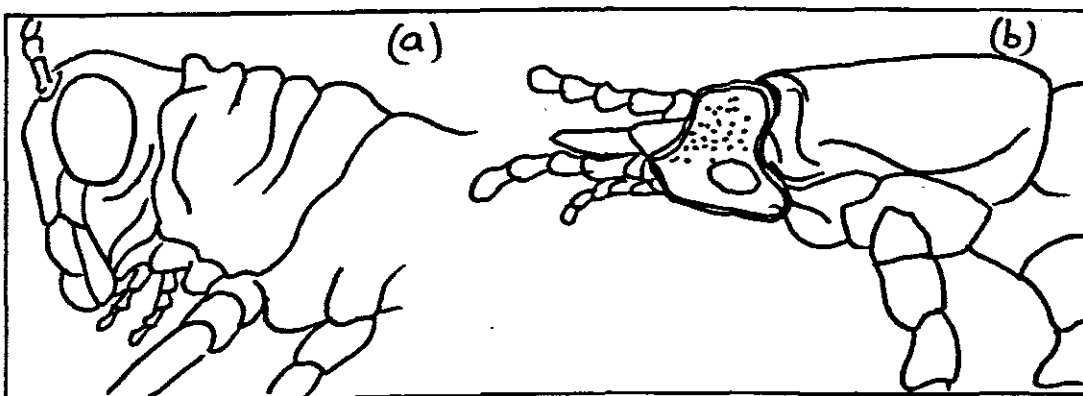
4.1 Identify which insect is **hypognathous** and which is **prognathous**?

(2)

4.2 Which of the two would you expect to be herbivorous, and why?

(3)

[Level 1]



Question 5

Sphingid caterpillars are able to increase their body weight by approximately five (5) times in a night of feeding. Using the diagram below, explain how this can occur. (You must refer to the crop, proventriculous, ventriculous and enteric caecae.)

(12)

[Level 3]

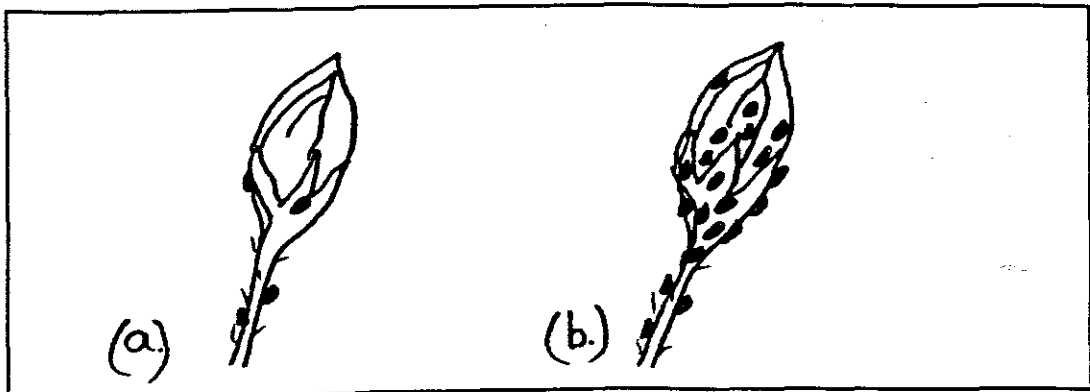


Question 6

Below are two sketches of the same rose bud drawn 48 hours apart. How would you explain the increase in the number of aphids over the period indicated? (Note: your answer must explain the increase in terms of the insect's methods of reproduction and post-embryonic development and the factors influencing this type of situation.)

(9)

[Level 3]

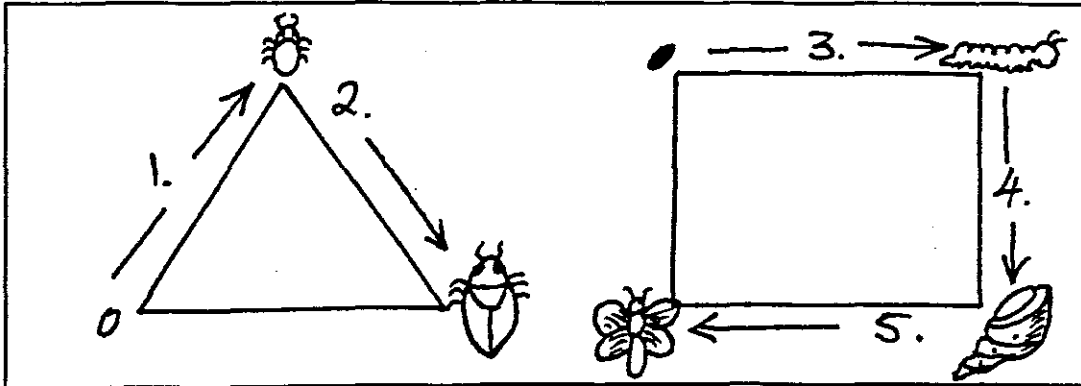


Question 7

In the two sketches below, indicate the division of labour for stages 1 - 5 of insect metamorphosis. (Note: write only the number and a description of the characteristics of the stage/instar.)

(5)

[Level 1]

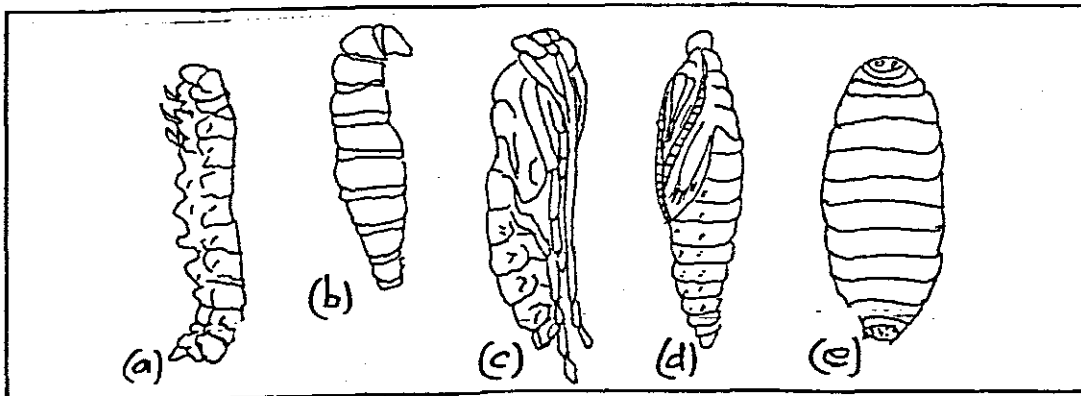


Question 8

Name the following types of pupae and larvae in the sketch below, giving the common name of an example of each.

(5)

[Level 1]

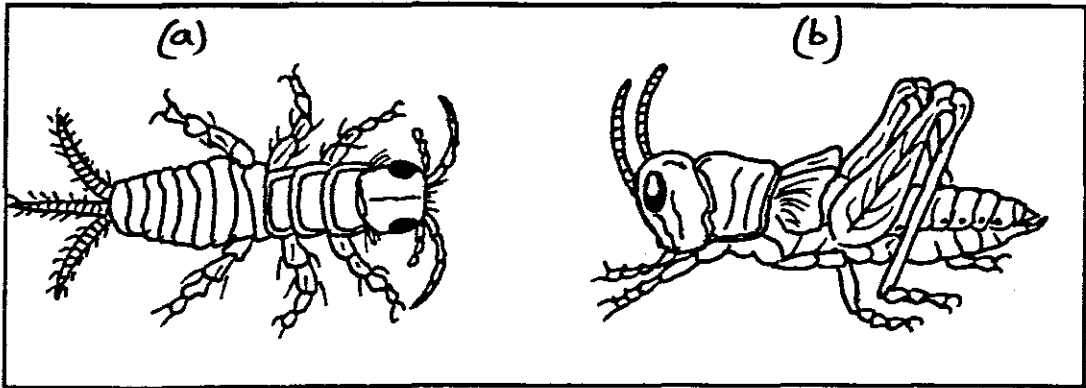


TOTAL: 53 Marks

PLAAGBEHEER A TOETS 1

Vraag 1

Hieronder is daar twee tekeninge van insekte:



1.1 Besluit watter een is apterygota en watter is pterygota? (1)

1.2 Watter kriteria het u gebruik om na hierdie besluit te kom? (2)

[Vlak 1]

Vraag 2

Die bestuurder wil graag 'n glashuis met metielbromide bewierook. Hy stel voor dat bewieroking 2 uur moet duur.

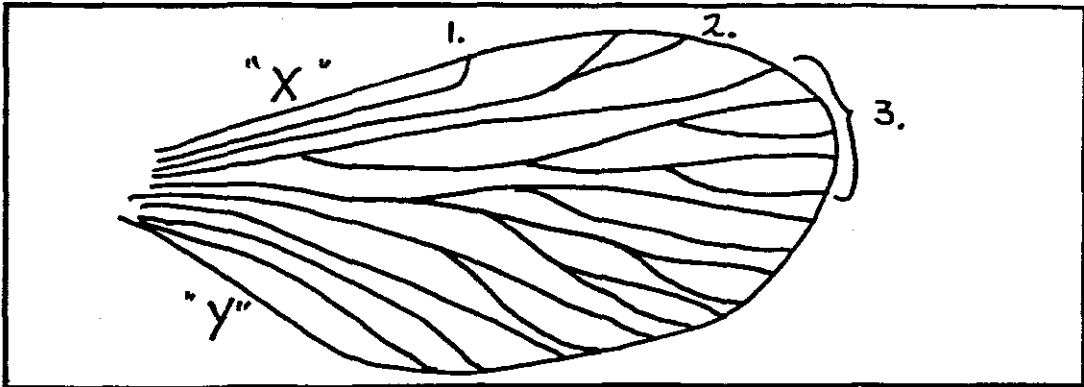
2.1 Hoekom is hierdie tyd te min? (1)

2.2 Hoe sal 'n insek reageer aan bewieroking? Verduidelik in u antwoord, met verwysing na, die asemhalingstelsel van 'n insek. (6)

[Vlak 3]

Vraag 3

3.1 In die onderste skets, benaam die drie gemerkte are. (3)



3.2 In dieselfde skets hierbo, wat is die funksies van die gebiede gemerk "X" en "Y"? (4)

[Vlak 1]

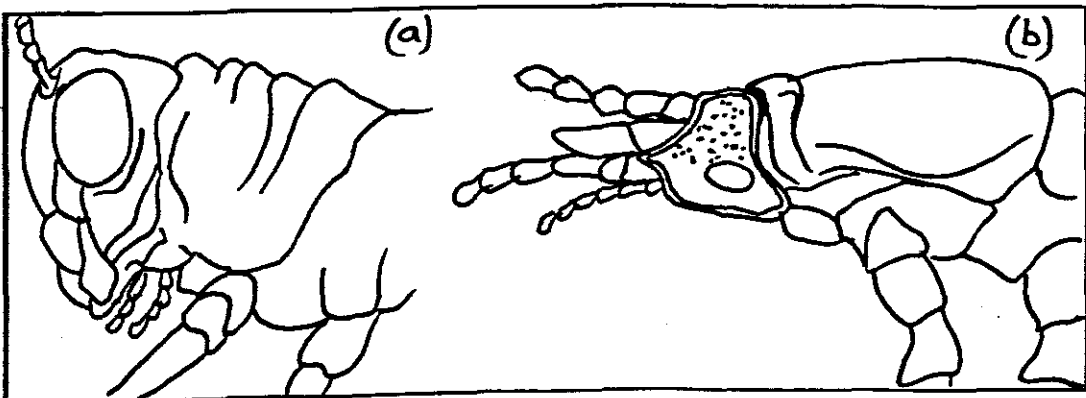
Vraag 4

In die 2 sketse hieronder:

4.1 Dui aan watter insek is hipognate en watter is prognate? (2)

4.2 Watter van die twee sal u verwag om plantetend te wees en hoekom? (3)

[Vlak 1]



Vraag 5

Sphingidruspers is in staat om hulle liggaamsgewig vyf (5) maal per aand na opeet, te vermeerder. Met gebruik van die onderste diagram, verduidelik hoe dit plaasvind. (U moet verwys na die krop, proventriculous, ventriculous en enteric caecae.)

(12)

[Vlak 3]

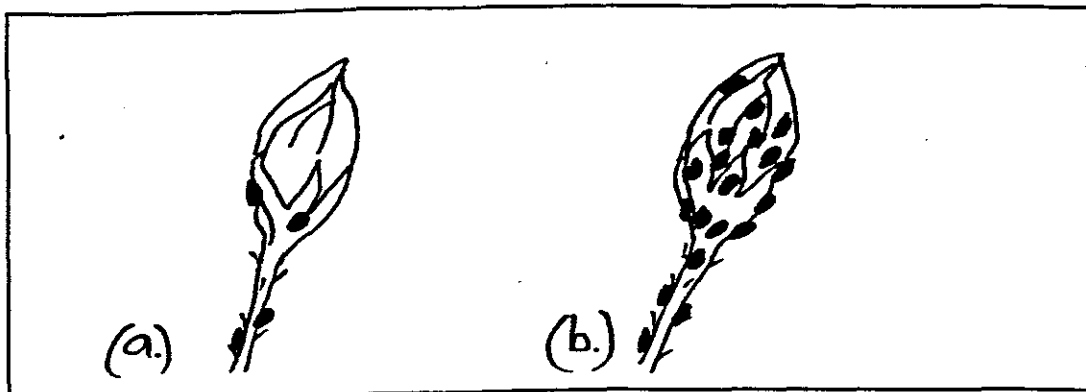


Vraag 6

Hieronder is daar twee sketse van dieselfde roos knop wat 48 uur tussen mekaar geteken is. Hoe sal u die vermeerdering van die hoeveelheid plantluise gedurende die tydperk, verduidelik? (Let wel: u antwoord moet die vermeerdering in die terme van die insek se metode van voortplanting en na-embryonaal ontwikkeling verduidelik en die faktore wat hierdie tipe omstandighede, beïnvloed.)

(9)

[Vlak 3]

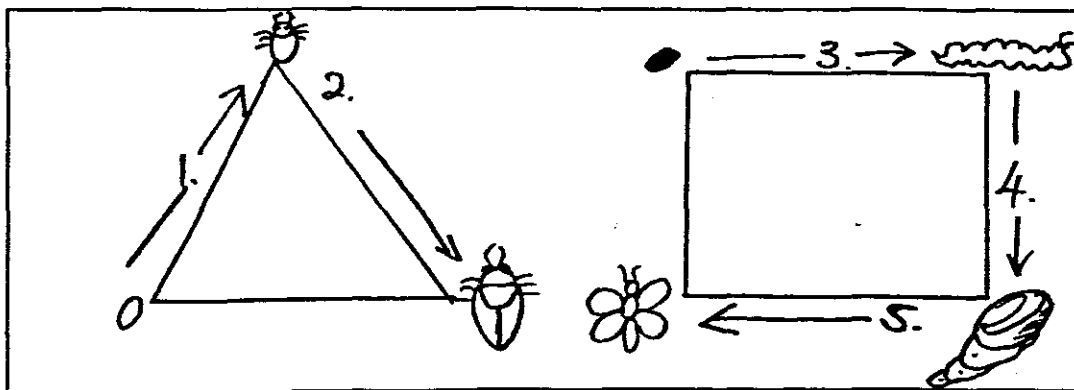


Vraag 7

In die twee sketse hieronder, dui aan die verdeling van arbeid vir fase 1 - 5 van insek metamorfose. (Let wel: skryf net die nommer en verduideliking van die eienskappe van die stadium).

(5)

[Vlak 1]

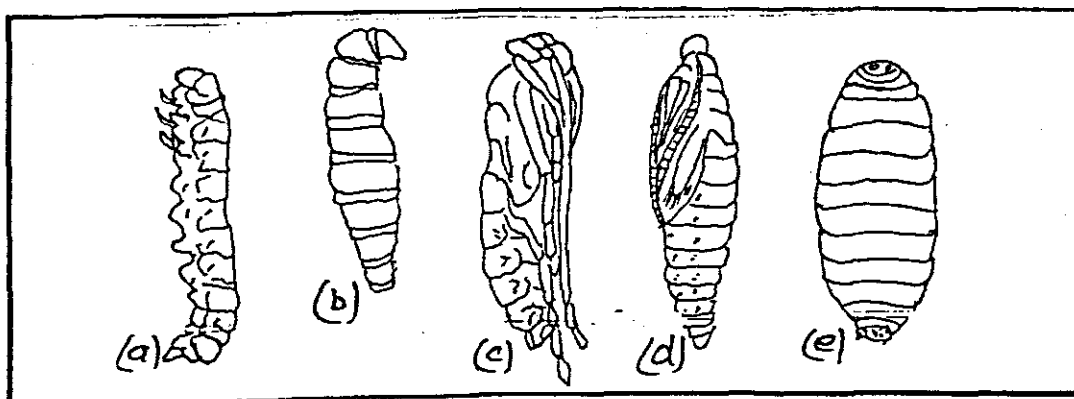


Vraag 8

Noem die volgende tipe van pupie en larwe in die skets hieronder, en gee die algemene naam van elke voorbeeld.

(5)

[Vlak 1]



TOTAAL: 53 Punte

APPENDIX F

PLANT PROTECTION A TEST II

Question 1

What do you understand by the term "law of diminishing returns" with regard to an apple orchard sprayed to control codling moth? (3)

[Level 2]

Question 2

Calculate the quantity of formulated pesticide that you would have to add to every tank full of water to apply 1,9 litres of formulated pesticide per hectare if:

the tank capacity = 33 litres

the spray swathe = 5 meters

the volume spraymix / 100 metres = 0,7 litres

(Note: please show all your calculations).

(6)

[Level 2]

Question 3

On a container of pesticide appears, amongst others, the following information:

3.1 Act 36 of 1947

3.2 POISONOUS

3.3 Contains sodium fluosilicate

3.4 Reg. No. L1579

Explain briefly the meaning of each statement.

(4)

[Level 1]

Question 4

The maximum permissible residue limit for deltamethrin on peas is 0,05 mg/kg and the harvest interval is 3 days. If a vegetable grower sprayed his crop on the 10th February, calculate the first date when he can start harvesting.

(1)

[Level 2]

Question 5

"17% m/v or 170g/litre" indicates

- 5.1 LD50 value
- 5.2 concentration of pesticide
- 5.3 dosage of the pesticide
- 5.4 dilution

(1)

[Level 1]

Question 6

You are in charge of a spraying team scheduled to spray a client's home rose-garden in two days time. Describe your preparations up to and including the application operation.

(6)

[Level 2]

Question 7

One of your farming clients is currently using a biological control programme on his citrus estate. He is, however, experiencing difficulties in controlling scale pests and would like to integrate an insecticide into the programme. How would you suggest this is done effectively?

(4)

[Level 2]

Question 8

The dermal LD50 of fenthion is 330 mg/kg body mass. How much of this insecticide would a healthy 19-year-old labourer with a mass of 79 kg have to come into contact with in order for it to be possibly lethal?

(1)

[Level 2]

Question 9

A strawberry grower has already applied four (4) fungicidal sprays of captafol at a cost of R420/ha each. His initial input costs were R730/ha, and he is expecting a gross return of approximately R 2500/ha. Would you recommend a fifth spray before harvesting? (Note: please show all your calculations and give the reasons for your recommendations).

(6)

[Level 3]

Question 10

Insect "A" is a chronic lepidopterous pest of potatoes. The larvae tunnel inside the leaves and into the potato tubers. What type of pesticide would you recommend to control this pest? (Note: please give the reasons for your recommendations).

(4)

[Level 3]

TOTAL: 36 Marks

PLAAGBEHEER A TOETS II

Vraag 1

Wat verstaan u in terme van die "wet van dalende opgawes" met verwysing na besproeiing van 'n appelboord om kodlingmot te beheer? (3)

[Vlak 2]

Vraag 2

Bereken die hoeveelheid van geformuleerde plaagdoder wat by elke tenkvol water bygevoeg moet word om 1,9 liters van die geformuleerde plaagdoder per hektaar aan tewend as:

die tenk inhoud = 33 liters

die spuitstrook = 5 meters

die volume spuitmengsel / 100 meters = 0,7 liters

(Let wel: wys asseblief al u berekeninge).

(6)

[Vlak 2]

Vraag 3

Op 'n houer van 'n plaagdoder verskyn, onder andere, die volgende inligting:

3.1 Wet 36 van 1947

3.2 GIFTIG

3.3 Bevat natriumfluosilikaat

3.4 Regno. L1579

Verduidelik kortliks wat elke verklaring beteken.

(4)

[Vlak 1]

Vraag 4

Die maksimum toelaatbare residuele grens vir deltamethrin op ertjies is 0,05 mg/kg en die oespouse is 3 dae. Indien 'n groentekweker sy oes op die 10de Februarie gespuit het, bereken die eerste datum wanneer hy mag begin oes. (1)

[Vlak 2]

Vraag 5

"17% m/v of 170g/liter" dui aan

- 5.1 LD50 waarde
- 5.2 konsentrasie van die plaagdoder
- 5.3 dosis van die plaagdoder
- 5.4 verdunning

(1)

[Vlak 1]

Vraag 6

U is in beheer van 'n besproeiingsspan wat bepaal is om oor twee dae 'n kliënt se roostuin te spuit. Beskryf u voorbereiding tot die tydperk van aanwending.

(6)

[Vlak 2]

Vraag 7

Een van u boerkliënte gebruik op die oomblik, 'n biologiese beheerprogram op sy sitruslandgoed. Egter, ondervind hy probleme met die beheer van dopluise en wil graag 'n insekdoder in die program integreer. Hoe stel u voor dat dit effektief gedoen kan word?

(4)

[Vlak 2]

Vraag 8

Die dermale LD 50 van fenthion is 330 mg/kg liggaamsmassa. Hoeveel van hierdie insekdoder sal in kontak moet kom met 'n gesonde 19-jarige arbeider, wat 79 kg weeg, om 'n moontlik sterfte te kan veroorsaak?

(1)

[Vlak 2]

Vraag 9

'n Arbeikweker het reeds vier (4) swamdoder bespuitings van kaptafol teen 'n koste van R420/ha elk op sy oes toegedien. Sy insetkoste was R730/ha en hy verwag 'n bruto wins van +/- R2500/ha. Sal u 'n vyfde spuit aanbeveel voor hy begin oes?

(Let wel: toon asseblief al u berekeninge aan en gee redes vir u aanbevelings).

(6)

[Vlak 3]

Vraag 10

Insek "A" is 'n chronies lepidopterous plaag van aartappels. Die larwe tonnelgrou binne die blare tot in die aartappelmoere. Watter tipe plaagdoder sal u voorstel om hierdie plaag te beheer? (Let wel: gee asseblief die rede vir u aanbevelings).

(4)

[Vlak 3]

TOTAAL: 36 Punte

APPENDIX G

PLANT PROTECTION A TEST III

Question 1

Identify the pest; name the detrimental stage(s) and give one form of control for each of the following:

- 1.1 brown patches on lawn, +/- 5-7cm in diameter
 - 1.2 nerine stems brown and decayed; no flowers
 - 1.3 rose petals destroyed; beetles seen at night
- (9)
[Level 1]

Question 2

Insect "X", (a hypothetical insect) has three (3) generations per year. Peak populations rise above the economic threshold level in spring, middle and late summer. It is a sporadic pest of a large number of ornamental plants. Draw up a seasonal chart showing an economic threshold level of twelve (12) and formulate a programme that could be used to control this pest by a wholesale nursery.

(6)
[Level 3]

Question 3

Elasmopoda valga is known to be a chronic, opportunistic pest of ornamentals. What recommendations would you give to a home gardener to control this pest?

(3)
[Level 2]

Question 4

At a garden club talk, a home gardener approaches you with the following problems:

- 4.1 Epimadiza hirta on gladioli
- 4.2 Gryllus bimaculatus in his seedling boxes
- 4.3 Hodotermes mossambicus on his son's school rugby field
- 4.4 Zonocerus elegans on his ornamentals

Using the supplied pages from the "Guide to the Use of Pesticides and Fungicides" make recommendations for the control of each of the above problems under the headings of:

active ingredient recommended
trade name of chemical
poison group of chemical
registered application rate
application instructions

(20)
[Level 2]

TOTAL: 38 Marks

PLAAGBEHEER A TOETS III

Vraag 1

Identifiseer die plaag; noem die nadelige stadium (stadia) en gee een vorm van beheer vir elk van die volgende:

- 1.1 bruin kolle op grasperk, +/- 5-7 cm in deursny
- 1.2 nerine stamme bruin en vergaan; geen blomme
- 1.3 roosblomblaartjies vernietig; kewer word in die aand gesien

(9)

[Vlak 1]

Vraag 2

Insek "X", ('n hipoteties insek) het drie (3) geslagte per jaar. Piek bevolkings styg bo die ekonomiese drumpelvlakte in die lente, middel en laat somer. Dit is 'n sporadies plaag van 'n groothoeveelheid van ornamenteelplante. Stel 'n seisoenlike kaart op wat 'n ekonomiese drumpelvlakte van twaalf (12) aandui en formuleer 'n program wat gebruik kan word deur 'n groothandelskwekery om die plaag te beheer.

(6)

[Vlak 3]

Vraag 3

Elasmopoda valga is 'n chronies, opportunistiese plaag van tuinplante. Watter aanbevelings sal u aan 'n tuinier gee om hierdie plaag te beheer?

(3)

[Vlak 2]

Vraag 4

By 'n tuinklub gesprek 'n tuinier kom nader u met die volgende probleme:

- 4.1 Epimadiza hirta op swaardlelie
- 4.2 Gryllus bimaculatus in sy saaddakkertjie
- 4.3 Hodotermes mossambicus op sy seun se skool se rugbyveld
- 4.4 Zonocerus elegans op sy tuinplante

Deur gebruik van die aangehegde bladsye uit die "Gids vir die Gebruik van Plaag- en Swamdoders" maak aanbevelings vir die beheer van elk van die bogenoemde probleme onder die volgende hoofde:

aktiewe bestanddeel voorgestel
handelsnaam van plaagdoder
gifgroep van plaagdoder
geregistreeerde hoeveelheid toediening
aanwendingsinstruksies

(20)
[Vlak 2]

TOTAAL: 38 Punte

APPENDIX H

PLANT PROTECTION A EXAMINATION PAPER

QUESTION 1

- 1.1 The calculated economic threshold level (E.T.L.) for Macrosiphum rosae on rosebuds is 3,6. What would your recommendation be to a commercial cut-flower producer with a scouted count of 2,8 non-alated aphids on his roses at the beginning of October? (Note: your answer must explain your recommendation in terms of the aphid's method of reproduction; post-embryonic development and the factors influencing the E.T.L. in this situation). (10)
[Level 3]
- 1.2 An apple farmer has complained of leaf damage from peak populations of Tetranychus cinnarbarinus during a particularly hot, humid spell of weather. The last 5 days have been much cooler and dry. What would be your recommendations to him? (Note: your answer must explain the reasons for your recommendations). (5)
[Level 3]

QUESTION 2

- 2.1 The oral LD50 of chlorpyrifos is 135 mg/kg. How much of this insecticide would a healthy 30 year old male with a mass of 82 kg have to swallow accidentally in order to be possibly lethal? (1)
[Level 2]
- 2.2 On the 20th of December a tomato grower sprayed his crop with 75 ml/ha of cypermethrin (harvest interval 4 days). The maximum permissible residue limit for cypermethrin on tomatoes is 0,2 mg/kg.
- 2.2.1 Calculate the first date when the grower can start picking the tomatoes. (1)
[Level 2]
- 2.2.2 Name the factors that permit harvesting to begin on your calculated date. (4)
[Level 1]

2.3 Study the supplied table (Annexure 1) and answer the following questions:

2.3.1 What dosage rate would you recommend to a home gardener to control Bagrada hilaris on cabbages? (2)

2.3.2 What is the concentration of the pesticide you have recommended? (1)

2.3.3 What is the formulation of the pesticide you have recommended? (1)

[Level 2]

2.4 Describe the conditions under which you may choose to use the following methods of spray application, and give an example of the type of pest which would be most effectively controlled using these methods.

2.4.1 application of 1500 litres spraymix / ha

2.4.2 application of soil applied granules

2.4.3 application of 4 litres / ha undiluted formulation (6)

[Level 1]

QUESTION 3

3.1 How would you explain continual mealybug damage to a home gardener's ornamentals that have been repeatedly sprayed with a contact insecticide? (2)

[Level 3]

3.1.1 What could you recommend for the above situation to improve the control of this pest? (2)

[Level 3]

3.2 What sensible control measures would you recommend to home gardeners with the following problems:

3.2.1 Fruit-fly damaged guavas

3.2.2 Sporadic lawn damage due to crickets

3.2.3 Sooty mould on rose leaves

3.2.4 Seedlings destroyed by cutworm (8)

[Level 3]

3.3 A new client of yours has recently moved into town from a small-holding outside Durbanville. He has been using carbaryl as one of the registered controls for lawn-caterpillar for a number of years. He has now found that the chemical appears to be ineffective. Explain fully what you think could be the reasons for this situation. (8)

[Level 3]

QUESTION 4

- 4.1 A brussel sprout grower has already applied 3 insecticidal sprays at a cost of R1100/ha each to his crop. His initial input costs were R1300/ha, and he is expecting a gross return of R5750/ha. The pest he has to control is a chronic pest of brussel sprouts and he would like to spray a fourth time this season. What would your recommendation be? (Note: please show your calculations and give the reasons for your recommendations). (6)

[Level 3]

- 4.2 Calculate the quantity of formulated pesticide that you would have to add to every tank full of water in order to apply 1,5 litres of formulated pesticide per hectare if:

the tank capacity = 25 litres

the spray swathe = 5 meters

the volume spraymix / 100 meters = 0,6 litres

(Note: please show all your calculations).

(6)

[Level 2]

- 4.3 Describe the 10 steps necessary to calibrate a particular spraying apparatus. (10)

[Level 1]

QUESTION 5

- 5.1 Identify the pest; name the detrimental stage(s) and give one form of control for each of the following:

5.1.1 speckled yellowing of citrus foliage

5.1.2 seedlings disappear overnight, only cut stems left

5.1.3 small pink caterpillars in apples; little or no decay

5.1.4 stem-end of oranges roughened; no decay

5.1.5 growing tips of plants black and shrivelled

(15)

[Level 1]

- 5.2 A home gardener wishes to start using biological control at home in an urban area. Discuss the major problems which may be encountered and suggest possible solutions. (4)

[Level 2]

QUESTION 6

- 6.1 Design an integrated pest management scheme for an insect that you have studied which would be suitable for use by a wholesale nurseryman whose plants or crop are damaged by the pest you have chosen.

(Note: your answer should include a table showing the insect's seasonal life-history, times of vulnerability and the types of control).

(15)

[Level 3]

- 6.2 A market-gardener approaches you with the following problems:

- 6.2.1 Shield bug on ornamentals
- 6.2.2 Aphids on strawberries
- 6.2.3 Pumpkin fly on cucumbers

Using the supplied pages from the "Guide to the Use of Pesticides and Fungicides", make recommendations for the control of each of the above problems, under the headings of:

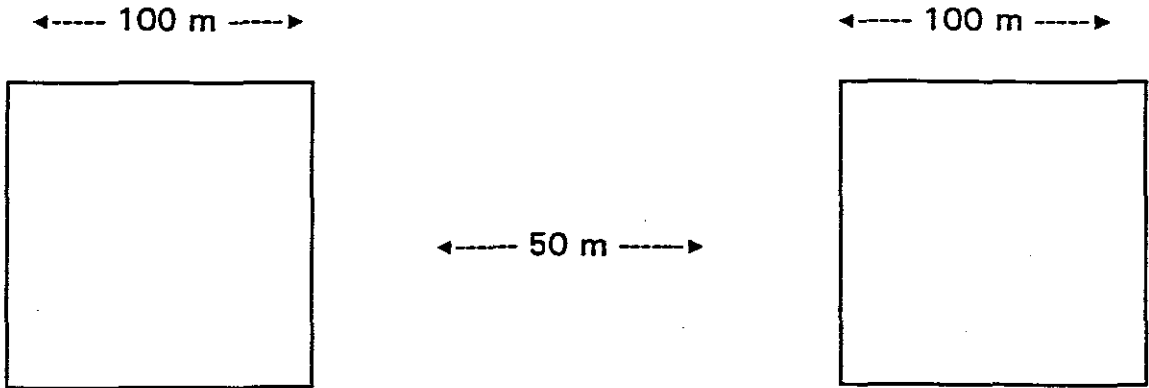
active ingredient recommended
tradename of chemical
poison group of chemical
registered application rate
application instructions.

(15)

[Level 2]

QUESTION 7

7.1 Below are sketches of two areas of cultivation identical in size and 50 meters apart from each other.



Potatoes are grown on the area to the left and the area on the right is planted with alternate 20 meter wide strips of turnips and potatoes. How would you explain the fact that the area to the left has developed a significantly higher pest population than the area on the right? (4)
[Level 2]

PLEASE COMPLETE QUESTION 7.2 ON THE NEXT SHEET AND HAND IT IN TOGETHER WITH YOUR ANSWER BOOK.

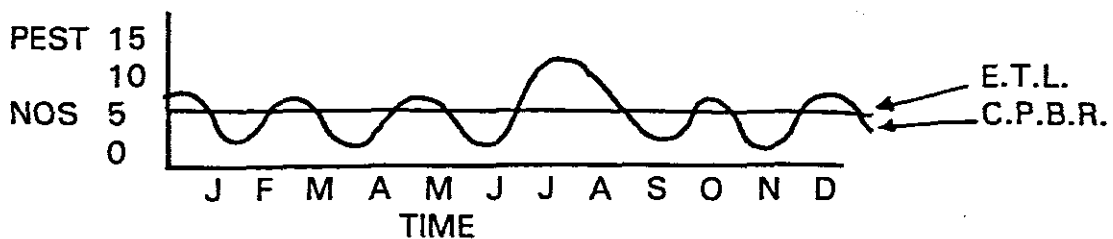
PLEASE COMPLETE QUESTION 7.2 ON THIS SHEET AND HAND IT IN TOGETHER WITH YOUR ANSWER BOOK

STUDENT NUMBER

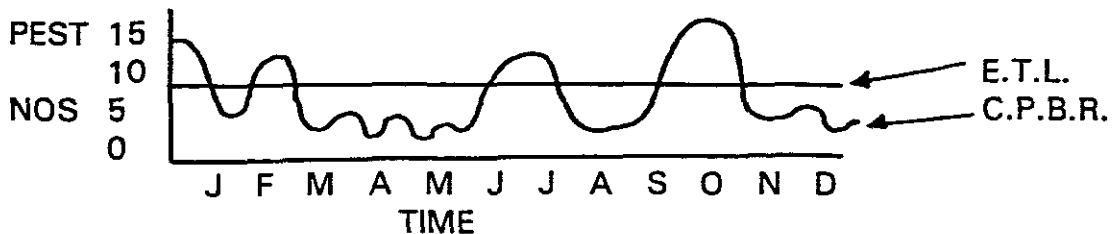
7.2 The following three graphs show the cost-potential benefit ratio line (C.P.B.R.), as well as the economic threshold level (E.T.L.) for each pest attacking each crop.

Indicate by using a drawn arrow the times when you would spray to control the pests in question most effectively, **AND** in your answer book give the reasons for your decisions for each of the following situations.

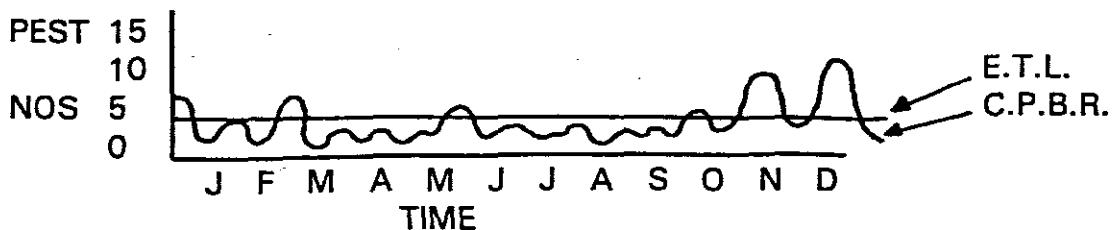
7.2.1 American bollworm on potatoes - 3 sprays **ONLY**.



7.2.2 Red scale on citrus trees - 3 sprays **ONLY**.



7.2.3 Whitefly on Fuchsias - 3 sprays **ONLY**.



(9)
[Level 3]

TOTAL MARKS: 135

PLANTBESKERMING A EKSAMEN VRAESTEL

VRAAG 1

- 1.1 Die berekende ekonomiese drempelwaarde (E.D.W.) van Macrosiphum rosae op roosknoppe is 3,6. Wat sal u aanbeveling aan 'n kommersiële snyblomkweker met 'n berekende telling van 2,8 nie-alateplantluise op die rose teen die begin van Oktober wees? (Let wel: u antwoord moet u aanbeveling verduidelik in terme van die plantluise se metode van voortplanting; na-embrionale ontwikkeling en die faktore wat die E.D.W. in hierdie situasie sal beïnvloed). (10)
[Vlak 3]
- 1.2 'n Appelboer het oor blaarbeskadiging veroorsaak deur piekbevolking van Tetranychus cinnarbarinus gedurende 'n besondere warm en bedompige tydjie van weerstoestande gekla. Die afgelope 5 dae was baie koeler en droër. Wat sal u aanbevelings aan die boer wees? (Let wel: u antwoord moet die redes vir u aanbevelings verstrek). (5)
[Vlak 3]

VRAAG 2

- 2.1 Die orale LD50 van chlorpyrifos is 135 mg/kg. Hoeveel van hierdie insekdoder sal 'n gesonde 30-jarige man wat 82 kg weeg, per ongeluk moet inneem om 'n moontlike doodsoorsaak te wees? (1)
[Vlak 2]
- 2.2 Op die 20ste Desember het 'n tamatiekweker sy gewas met 75 ml/ha cypermethrin gespuit (oespouse 4 dae). Die maksimum toelaatbare residuele grens vir cypermethrin op tamaties is 0,2 mg/kg.
- 2.2.1 Bereken die eerste datum wanneer die kweker mag begin oes. (1)
[Vlak 2]
- 2.2.2 Noem die faktore wat toelaat dat die oes op u berekende datum 'n aanvang kan neem. (4)
[Vlak 1]
- 2.3 Bestudeer die aangehegde tabel (Bylae 1) en beantwoord die volgende vrae:
- 2.3.1 Watter dosis toediening sal u vir 'n tuinier aanbeveel om Bagrada hilaris op kool te beheer? (2)

- 2.3.2 Wat is die konsentrasie van die plaagdoder wat u aanbeveel? (1)
- 2.3.3 Wat is die formulاسie van die plaagdoder wat u aanbeveel? (1)
[Vlak 2]
- 2.4 Beskryf die toestande waaronder u gebruik van die volgende metode van spuittoediening mag kies en gee 'n voorbeeld van die tipe plaag wat mees effektief beheer sal word, deur van die volgende metodes gebruik te maak.
- 2.4.1 toediening van 1500 liters spuitmengsel / ha
2.4.2 toediening van grondtoegedienende korreltjies
2.4.3 toediening van 4 liters / ha onverdunde formulاسie (6)
[Vlak 1]

VRAAG 3

- 3.1 Hoe sal u aanhoudende wolluis skade op 'n tuinier se plante, wat gereeld met 'n kontak plaagdoder bespuit is, verduidelik? (2)
[Vlak 3]
- 3.1.1 Wat sal u aanbeveel vir die bogenoemde situاسie om beheer van die plaag te verbeter? (2)
[Vlak 3]
- 3.2 Watter redelike beheermaatreëls sal u aan die tuinier met die volgende probleme voorstel:
- 3.2.1 Vrugtevliegbeskadiging van koejawels
3.2.2 Sporadiese grasperkbeskadiging deur krieke
3.2.3 Roetskimmel op roosblare
3.2.4 Saailinge vernietig deur snywurm (8)
[Vlak 3]
- 3.3 Een van u nuwe kliënte het onlangs vanaf 'n kleinhoewe buite Durbanville na die stad verhuis. Tot dusver het hy vir 'n aantal jare carbaryl as een van die geregistreeerde beheermiddels vir grasperkrusers gebruik. Hy vind nou dat die middel blykbaar ondoeltreffend is. Verduidelik volledig wat u dink die moontlike redes vir die huidige oneffektiewe beheer. (8)
[Vlak 3]

VRAAG 4

- 4.1 'n Kweker van brusselse spruitkool het reeds 3 insekdoderbespuitings, elk teen 'n koste van R1100/ha op sy gewas toegedien. Sy insetkoste was R1300/ha, en hy verwag 'n brutowins van R5750/ha. Die plaag wat hy wil beheer is 'n chroniese plaag op spruitkool en hy wil graag vir die vierde keer hierdie seisoen spuit. Wat sal u aanbevelings aan hom wees? (Let wel: toon asseblief u berekening en gee redes vir u aanbevelings).

(6)

[Vlak 3]

- 4.2 Bereken die hoeveelheid van geformuleerde plaagdoder wat by elke tenkvol water bygevoeg moet word om 1,5 liters van die geformuleerde plaagdoder per hektaar aan te wend as:

die tenk inhoud = 25 liters

die spuitstrook = 5 meters

die volume spuitmengsel / 100 meters = 0,6 liters

(Let wel: wys asseblief al u berekeninge).

(6)

[Vlak 2]

- 4.3 Verduidelik die 10 stappe wat nodig is om 'n spuitapparaat te kalibreer.

(10)

[Vlak 1]

VRAAG 5

- 5.1 Identifiseer die plaag; noem die nadelige stadium (stadia) en gee een vorm van beheer vir elk van die volgende:

5.1.1 gespikkelde vergeling van sitrus blare

5.1.2 saailinge verdwyn oornag, net afgesnyde stamme bly oor

5.1.3 klein pink ruspers in appels; weinig of geen verrotting

5.1.4 steelente van lemoene grof; geen verrotting

5.1.5 groeipunte van plante swart en opgekrimp.

(15)

[Vlak 1]

- 5.2 'n Tuinier wil graag biologiese beheer by die huis, in 'n dorpsgebied begin. Bespreek die belangrike probleme wat ondervind mag word en stel moontlike oplossings voor.

(4)

[Vlak 2]

VRAAG 6

- 6.1 Ontwerp 'n geïntegreerde plaagbestuurstelsel vir 'n insek wat u bestudeer het en wat toepaslik gebruik kan word deur 'n groothandelaar, wie se plante of oes beskadig word deur die gekose plaag.

(Let wel: u antwoord moet 'n tabel wat die insek se seisoenale lewensgeskiedenis, tyd van kwesbaarheid en die tipes beheer uiteensit).

(15)

[Vlak 3]

- 6.2 'n Markkweker nader u met die volgende probleme:

6.2.1 Stinkbesie op sierplante

6.2.2 Plantluise op aarbeie

6.2.3 Pampoenvlieg op komkommers

Deur gebruik van die aangehegde bladsye uit die "Gids vir die Gebruik van Plaag- en Swarmdoders", maak aanbevelings vir die beheer van elk van die bogenoemde probleme onder die volgende hoofde:

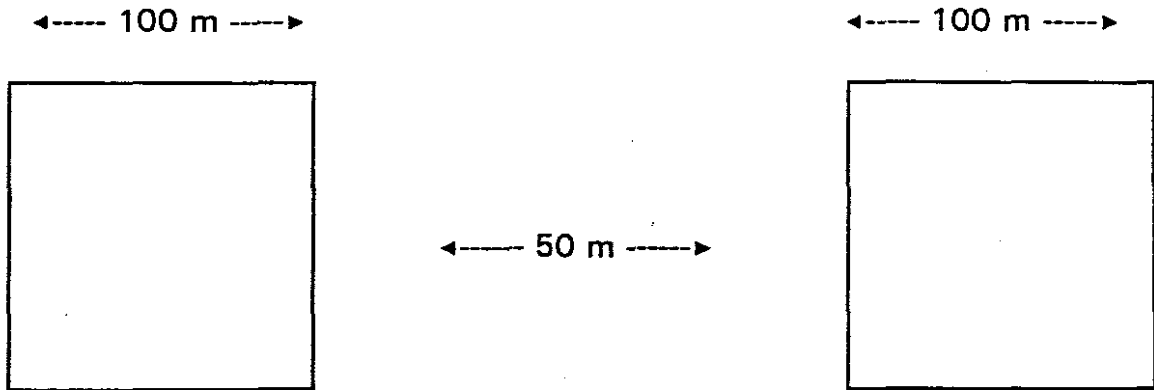
aktiewe bestanddeel voorgestel
handelsnaam van plaagdoder
gifgroep van plaagdoder
geregistreerde hoeveelheid toediening
aanwendingsinstruksies

(15)

[Vlak 2]

VRAAG 7

7.1 Hieronder is sketse van twee gebiede van bewerking van dieselfde grote en 50 meters uitmekaar geleë.



Aartappels word in die linkergebied verbou en in die gebied regs in 20 meter afwisselende rye van aartappels en rape. Hoe sal u dit verduidelik dat die gebied aan die linkerkant 'n beduidende hoër plaagbevolking het as in die gebied aan die regterkant.

(4)

[Vlak 2]

VOLTOOI ASSEBLIEF VRAAG 7.2 OP DIE VOLGENDE VEL EN HANDIG DIT SAAM MET U ANTWOORDBOEK IN.

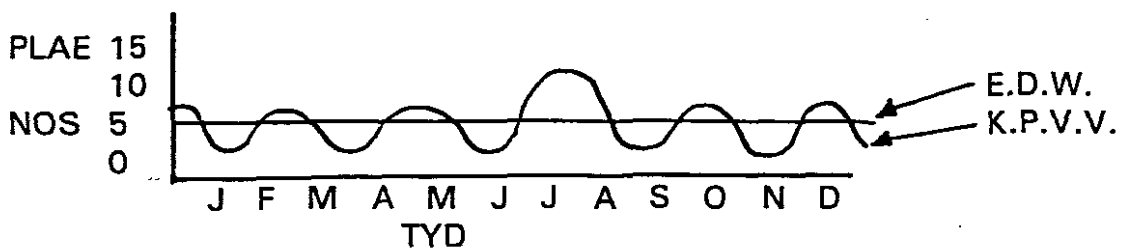
VOLTOOI ASSEBLIEF VRAAG 7.2 OP HIERDIE VEL EN HANDIG DIT SAAM MET U ANTWOORDBOEK IN.

STUDENTENOMMER.....

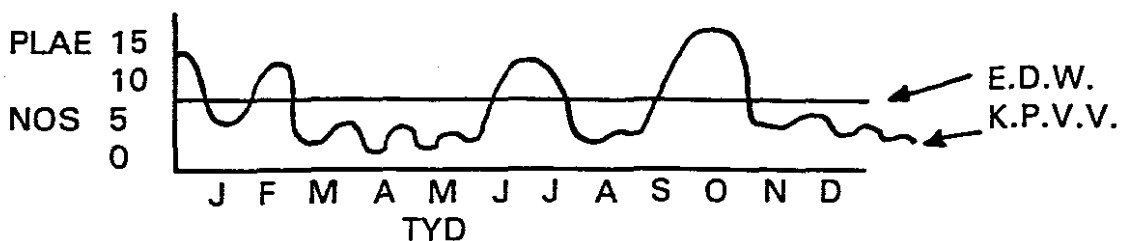
7.2 Die volgende drie grafieke toon die kostepotensiaal voordeel verhouding lyn (K.P.V.V.), sowel as die ekonomiese drempelwaarde (E.D.W.) vir elk van die plaë wat elke gewas aanval.

U word gevra om asseblief met 'n getekende pyltjie aan te toon wanneer u sou spuit om die mees effektiewe beheer oor die plaag te verkry **EN**, in u antwoordboek, gee redes vir u besluite vir elk van die volgende situasies.

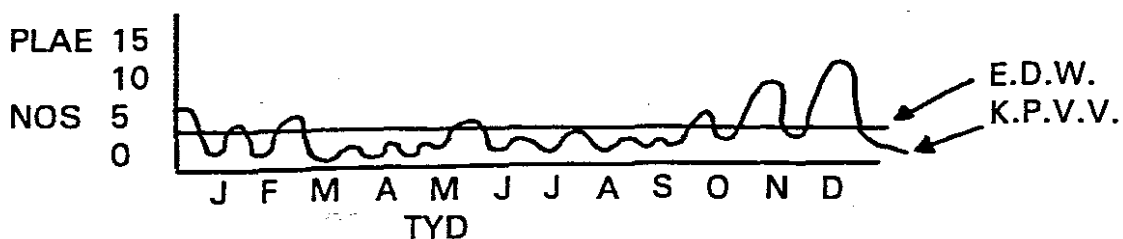
7.2.1 Amerikaanse bolwurm op aartappels - **SLEGS** 3 bespuitings.



7.2.2 Rooidopluise of sitrusbome - **SLEGS** 3 bespuitings.



7.2.3 Witvlieg op Fuchsiaplante - **SLEGS** 3 bespuitings.



(9)
[Level 3]

TOTAAL PUNTE: 135

APPENDIX I

LIST OF EMPLOYERS COMMENTS AND SUGGESTIONS FOR RECORDS OF ACHIEVEMENT

PRACTICAL ASPECTS:

Record / report the results of the work done during practical training, i.e. from retail nursery salesperson to general skivvy, this is not done for some obscure reason, if the results were available it would be of great help to employers.

Change from the current theoretical outlook to a practical one and assess that by testing whether the student can apply what is learned.

Remove irrelevant subjects that the student will never use and spend more time on the practical requirements, marketing and managerial skills e.g less emphasis on academic achievement and more on application of skills.

Give the students more opportunity to do more realistic practical work

Change emphasis as many students who excel in the classroom and are highly recommended by Tech fail dismally in the work situation.

Teach them the basics, many students we have employed knew their subjects but have been totally lost in the commercial world - they cannot add or subtract and cannot follow a road map.

POSSIBILITY OF PREJUDICE:

Extend the assessment into the working environment, thereby ensuring that the system is not left to one person's judgement - abuse - real value lies in the confidence the employer has in the ability of the person evaluating the student

Proposed scheme good, however should guard against favouritism and/or incorrect diagnosis of a student's abilities.

Should not a tutor or lecturer profile be first drawn up to establish their attitudes, norms and/or requirements before we do it for the students. This will allow a better insight for prospective employers to get to know the lecturers and thus enable them to equate the lecturer's comments in relation to their prepared profiles of the students.

Only report on positive aspects as a lecturer could make an incorrect judgement which could be held against the person for life.

I foresee problems arising from character clashes making it vital that these assessments are done by more than one person and carefully vetoed/moderated.

SUGGESTED INCLUSIONS:

Record the assessments by year, i.e. first year; second year; third year; this would enable the prospective employer to gauge their progress.

Record of each students' personal practical interests.

Report on the students' enjoyment of the course.

Comparison of students' claimed primary interests, with their final achievements in the course.

Report on the economy with which the student works i.e. time and motion study with reference also to materials economy.

Report/s on practical and technical abilities, for example service of lawn mowers, construction and maintenance of sprinkler systems.

Include a psychological assessment on completion as to suitability e.g. retail nursery, wholesale, landscaping, government or municipality as well as personality (makeup) - nervous, does not relate to people, cannot control labour etc.

Results of aptitude or interest tests to gauge not only academic ability but genuine interest and ability (practical), particular reference to management abilities.

Assess student for managerial skills, leadership qualities and ability to do 'hard' manual 'dirty' work - generally a problem with the girls who think that they are supervisors - this is not what we are looking for.

Test to detect students' human relations, from leadership qualities to introvert tendencies.

Evaluation of students' plant knowledge.

GENERAL COMMENTS:

Teach students to compile their C.V. with all job references including holiday jobs.

Give a MCQ exam paper twice per week - would maintain a constant learning mode and do away with shock mid-term stress.

Include hand written comments as well as the selective bank of comments.

The type of lecturer currently used is too academic and not practically orientated. This proposal would entail a return to the previous system of outside part-time lecturers for practical subjects - would have better results as they know what is required in the workplace.

APPENDIX J

LIST OF QUALITIES PROPOSED BY EMPLOYERS

Note: The author has arbitrarily grouped qualities together from the original list obtained from the employer questionnaire.

Adaptability; problem solving skills;

Ambition; drive; motivation; enthusiasm; interest;

Attendance record; punctuality;

Attributes:- common sense; honesty; politeness; modesty; hardworking; meticulous;

Bilingualism - Multilingualism;

Communicative skills with public; clients; senior staff members and labour;

Drivers licence: - code and endorsements;

Entrepreneurial skills; initiative; creativity; inventiveness; innovative;

Extra-curricular achievements; sport; hobbies; other interests;

Family background - stability; social problems; social habits;

Leadership; assertiveness; self-confidence; human relations;

Management skills; powers of observation; delegating skills; coping with stress under pressure; attitude to life, work and people;

Decisiveness; logical thought; conceptualism; lateral thought;

Personality - type; likes and dislikes; conservative; antagonistic; team person; character references;

Physical stamina; endurance; out-of-doors affinity (able to work **IN** poor weather);

Practicality; planning and organisational skills; experiences and abilities; practical versus academic approach;

Professionalism; attitude; self-discipline; self-control; personal appearance; neatness;

Responsibility; dependability; commitment;

Special aptitudes - job related; personal interests; extra-mural horticultural activities; in-service training achievements/abilities;

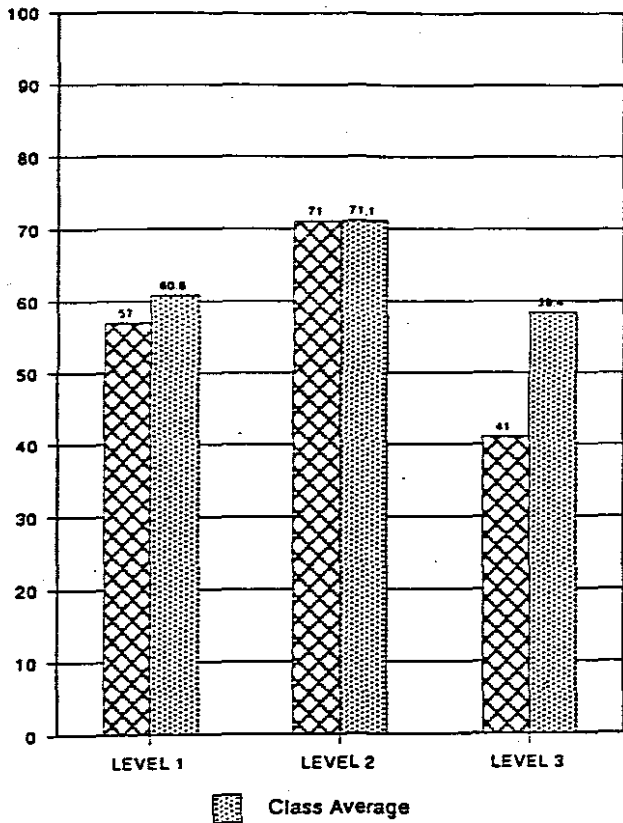
APPENDIX K

MANUAL SPREADSHEET OF RAW MARKS

JUNE EXAMS 1992 P.P.A.													JUNE EXAMS 1992 P.P.A. - 135											
Q. 1.1	1.2	2.1	2.2.1	2.2.2	2.3.1	2.3.2	2.3.3	2.4	3.1	3.1.1	3.2	3.3	4.1	4.2	4.3	5.1	5.2	6.1	6.2	7.1	7.2	TOTAL	%age	Point for Year
L 13/3	17/3	5/2	5/2	5/1	7/2	5/2	5/2	5/1	5/3	7/3	7/3	4/3	7/5	6/2	6/1	7/1	8/2	8/3	7/2	7/2	8/3	-	-	-
M 10	5	1	1	4	2	1	1	6	2	2	8	8	6	6	10	15	4	15	15	4	9	135	(100%)	-
001 47/10	36/5	1/1	1/1	0/4	2/2	1/1	1/1	2 1/6	1/2	1 1/2	6/8	1/8	0/2	6/6	7/10	11/15	3/4	9/15	15/15	2 3/4	5/9	83 1/2 / 135	62%	56%
002 10/10	4/5	1/1	1/1	4/4	2/2	1/1	1/1	6/6	2/2	2/2	7/8	5/8	5 1/2	6/6	8/10	12/15	4/4	10/15	15/15	4/4	8/9	101 1/2 / 135	90%	78%
003 8/10	3/5	1/1	1/1	2/4	1/2	0/1	1/1	2 1/6	1 1/2	1/2	1/8	6/8	5/6	6/6	2/10	5 1/5	1 1/2	8/15	14/15	1 1/2	2 1/9	71 / 135	54%	61%
004 7/10	4/5	1/1	1/1	1 1/4	0/2	1/1	1/1	2 1/6	0/2	1/2	6/8	2 1/8	6/6	6/6	1/10	10 1/5	3/4	14/15	8/15	3/4	8/9	87 / 135	64%	75%
005 4 1/2	1/5	1/1	1/1	1 1/4	0/2	0/1	0/1	4/6	1 1/2	1/2	4 1/8	3/8	5 1/2	6/6	5/10	5 1/5	4/4	8/15	15/15	3/4	0/9	74 / 135	55%	73%
006 7/10	2/5	1/1	1/1	0/4	1/2	1/1	1/1	5/6	0/2	1 1/2	1/8	1/8	0 1/2	6/6	1 1/10	5/15	0/4	11/15	15/15	2/4	7/9	72 / 135	54%	68%
007 3 1/2	2/5	1/1	1/1	1 1/4	2/2	1/1	1/1	2/6	1/2	1 1/2	6/8	3/8	2/6	6/6	0/10	8/15	3/4	15/15	13/15	3/4	9/9	84 / 135	63%	69%
008 5/10	1 1/5	1/1	1/1	0/4	2/2	0/1	0/1	2 1/6	2/2	2/2	4/8	0/8	5 1/2	6/6	7/10	10 1/5	3/4	14/15	11/15	1 1/4	7/9	89 1/2 / 135	66%	76%
009 4/10	0/5	1/1	1/1	4/4	2/2	1/1	1/1	1/6	2/2	2/2	2/8	5/8	4/6	5/6	0/10	7/15	4/4	9 1/2	10/15	3/4	1 1/2	73 / 135	54%	66%
010 4/10	1 1/5	1/1	1/1	0/4	1/2	1/1	1/1	3 1/6	1/2	1/2	5/8	6/8	5/6	5/6	7 1/10	2 1/5	3/4	6/15	13 1/5	3/4	5/9	76 / 135	57%	59%
011 4 3/4	2/5	1 1/1	1/1	0/4	2/2	1/1	1/1	4/6	1 1/2	2/2	0/8	6/8	4 1/2	5 1/6	3 1/10	8/15	1 1/2	12/15	15/15	3/4	2 1/9	71 1/2 / 135	59%	59%
012 8/10	7/5	1/1	1/1	4/4	2/2	0/1	0/1	3 1/6	0/2	1/2	3/8	3/8	5/6	6/6	7/10	11 1/5	4/4	10/15	15/15	4/4	9/9	100 / 135	77%	83%
013 8/10	2/5	1/1	1/1	4/4	2/2	1/1	1/1	4/6	1/2	0/2	2/8	5/8	5 1/2	3 1/2	4/10	11 1/5	3/4	12/15	11/15	3/4	9/9	94 / 135	70%	74%
014 5/10	1/5	1/1	1/1	4/4	1/2	1/1	1/1	1 1/6	2/2	2/2	3 1/8	2/8	4 1/2	6/6	6/10	10/15	4/4	7/15	15/15	2/4	7/9	87 / 135	64%	68%
015 6/10	5/5	1/1	1/1	0/4	2/2	1/1	1/1	5/6	1/2	1/2	2/8	3 1/8	5/6	6/6	2/10	14/15	3/4	11/15	15/15	3/4	8 1/9	107 / 135	76%	68%
016 3/10	5/5	1/1	1/1	1 1/4	2/2	1/1	1/1	5 1/6	2/2	2/2	6 1/8	6/8	4 1/2	5 1/6	6/10	8 1/5	1 1/2	6/15	10/15	0/4	0/9	89 / 135	62%	71%
017 6 1/2	2/5	1/1	1/1	1/4	2/2	1/1	1/1	1/6	1/2	1 1/2	4 1/8	2/8	4 1/2	6/6	7/10	8 1/5	2/4	11/15	15/15	2/4	4 1/9	86 / 135	64%	71%
018 7/10	1/5	1/1	1/1	4/4	1/2	0/1	1/1	1 1/6	2/2	1 1/2	4 1/8	5/8	5 1/2	5/6	4/10	8 1/5	3/4	6/15	15/15	3 1/4	5/9	81 1/2 / 135	62%	69%
019 3 7/10	3/5	1/1	1/1	0/4	2/2	1/1	1/1	4/6	1 1/2	1 1/2	7 1/8	4/8	2/6	6/6	5 1/10	7 1/5	3/4	7/15	15/15	2/4	7/9	76 1/2 / 135	57%	62%
020 2/10	1/5	1/1	1/1	0/4	2/2	1/1	1/1	2/6	2/2	1/2	1 1/8	2/8	6/6	6/6	0 1/10	10/15	0/4	14 1/5	3 1/5	4/4	9/9	79 / 135	59%	66%
021 2/10	3 1/5	1 1/1	1/1	2/4	2/2	1/1	1/1	4/6	1/2	2/2	4 1/8	5 1/8	4 1/2	6/6	0/10	10/15	3/4	9/15	10/15	2/4	7/9	95 / 135	70%	66%
022 7/10	0/5	0/1	1/1	2 1/4	2/2	1/1	1/1	3 1/6	2/2	2/2	5 1/8	6/8	6 1/2	6/6	0/10	10/15	3/4	9/15	10/15	2/4	7/9	95 / 135	70%	66%
-	-	-	-	-	L	L	L	-	F	O	R	-	E	X A M L N A T I O N										
023 9/10	5/5	1/1	1/1	3/4	2/2	1/1	1/1	5/6	1/2	2/2	7/8	4/8	4 1/2	6/6	3 1/10	15/15	3/4	5 1/5	14/15	3/4	7/9	107 / 135	76%	69%
024 8/10	5/5	1/1	1/1	0/4	1/2	1/1	1/1	3/1	1 1/2	1/2	5/8	6/8	3 1/2	5/6	2/10	14/15	4/4	8/15	14/15	3/4	8/9	96 / 135	76%	65%
025 10/10	5/5	1/1	1/1	1/4	1/2	1/1	1/1	2/6	1/2	1 1/2	4 1/8	0/8	4 1/2	5/6	7/10	5 1/5	3 1/4	14/15	15/15	2/4	8/9	93 1/2 / 135	69%	73%
026 8 1/2	3 1/5	1/1	1/1	4/4	1/2	1/1	1/1	5 1/6	2/2	2/2	5/8	4/8	5 1/2	6/6	4/10	12/15	2/4	11/15	14 1/5	2/4	6/9	108 1/2 / 135	77%	80%
027 0 1/10	0 1/5	1/1	1/1	2/4	2/2	1/1	0/1	0 1/4	2/2	2/2	3/8	5 1/8	6/6	6/6	0 1/10	9/15	4/4	4/15	10/15	4/4	6/9	68 1/2 / 135	51%	58%
028 9 1/2	2/5	1/1	1/1	4/4	2/2	1/1	1/1	5/6	2/2	2/2	5 1/8	3/8	6 1/2	6/6	3/10	11 1/5	4/4	9/15	15/15	3/4	9/9	105 1/2 / 135	78%	73%
029 10/10	5/5	1/1	1/1	4/4	1/2	1/1	1/1	0/6	2/2	2/2	5/8	0/8	6/6	5/6	0 1/10	7 1/5	2 1/4	9/15	14/15	1/4	6/9	71 / 135	57%	70%
030 7 1/2	4/5	1/1	0/1	4/4	1/2	0/1	1/1	2/6	0/2	1/2	2 1/8	2/8	6 1/2	6/6	5/10	10/15	3/4	7 1/5	15/15	2 1/4	5/9	75 / 135	56%	62%
031 0 1/10	2/5	1/1	1/1	1/4	1/2	1/1	1/1	4/6	0/2	1 1/2	2 1/8	2/8	4 1/2											
Total	110,5	82,5	29	30	56	47	25	27	97,5	37	44	131	124,5	173	114	258,5	88,5	302	403,5	82,5	196,5	274,5	2012	2200
Avg	6,14	2,66	0,93	0,96	1,80	1,51	0,80	0,87	3,14	1,14	1,41	4,22	4,01	5,58	3,67	9,30	2,85	7,74	13,01	2,66	6,33	87,56	4,90	70,96

STUDENT 001

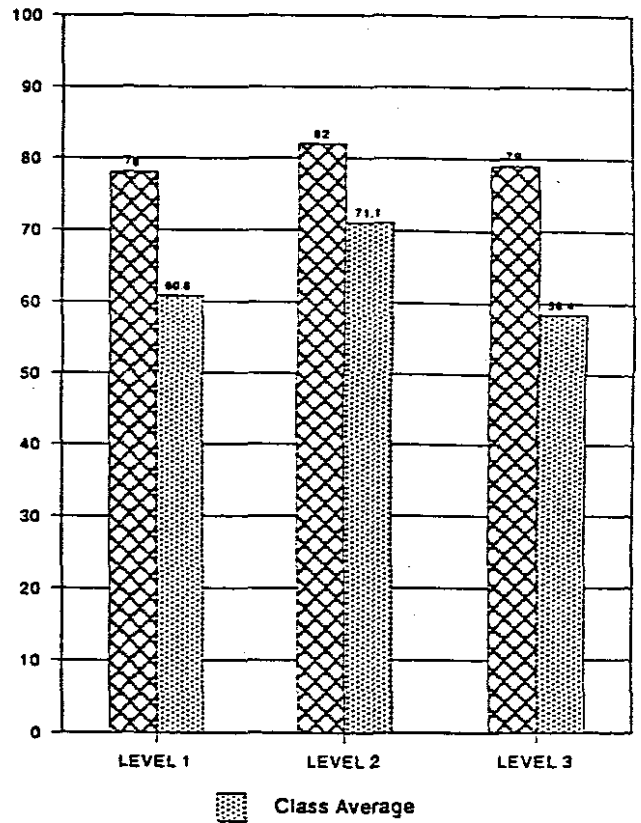
Plant Protection A



Level 1 = knowledge
 Level 2 = application
 Level 3 = evaluation

STUDENT 002

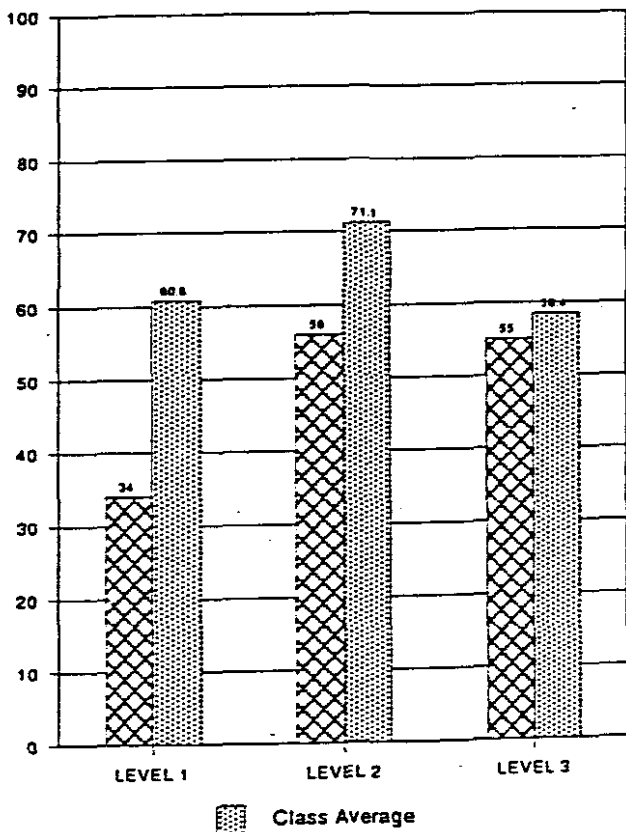
Plant Protection A



Level 1 = knowledge
 Level 2 = application
 Level 3 = evaluation

STUDENT 003

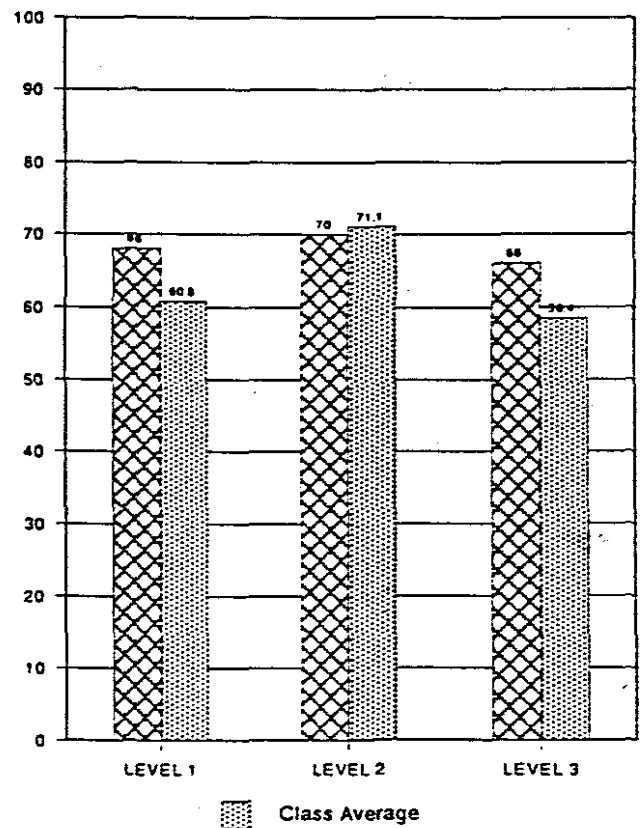
Plant Protection A



Level 1 = knowledge
 Level 2 = application
 Level 3 = evaluation

STUDENT 004

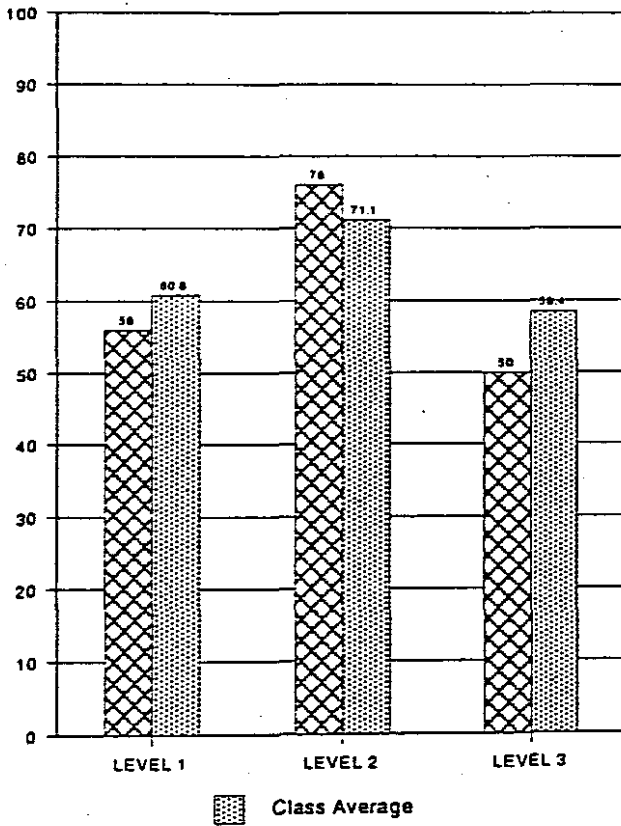
Plant Protection A



Level 1 = knowledge
 Level 2 = application
 Level 3 = evaluation

STUDENT 005

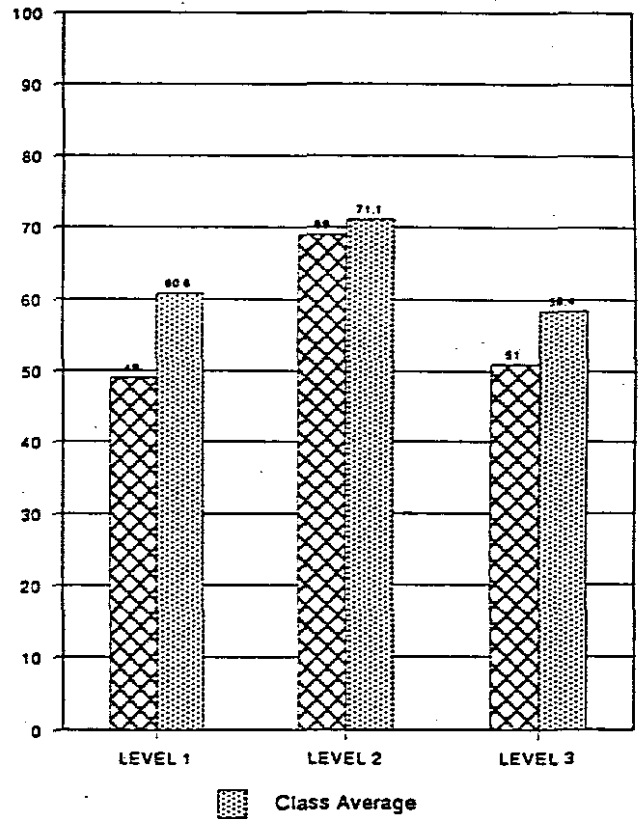
Plant Protection A



Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

STUDENT 006

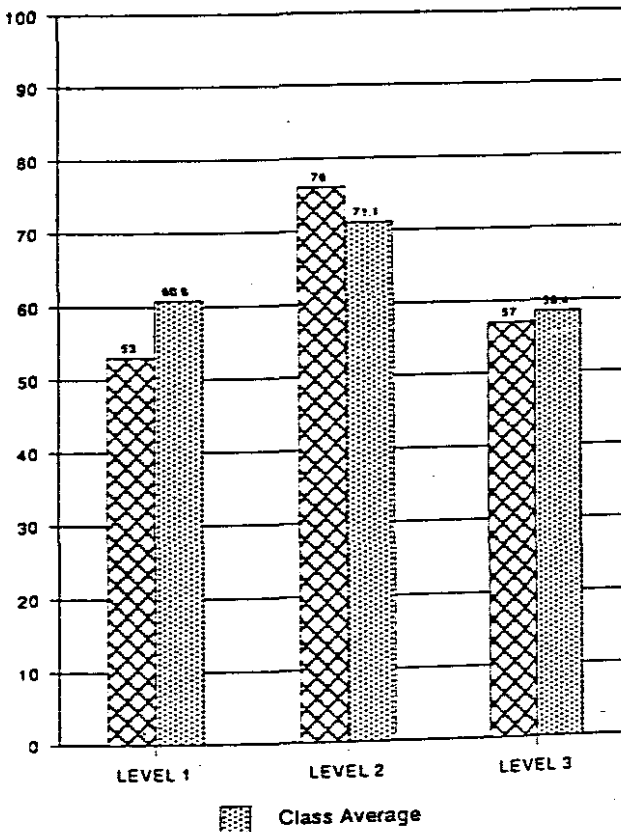
Plant Protection A



Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

STUDENT 007

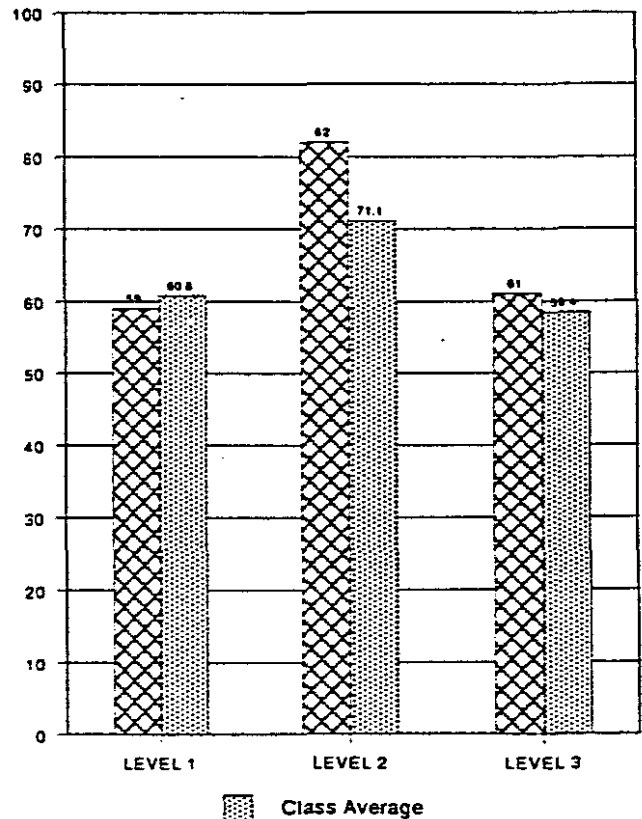
Plant Protection A



Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

STUDENT 008

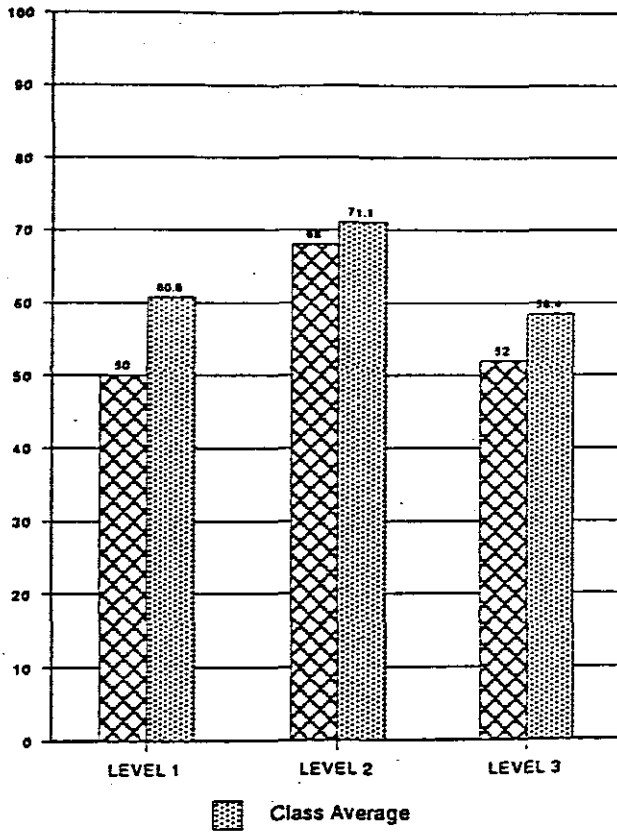
Plant Protection A



Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

STUDENT 009

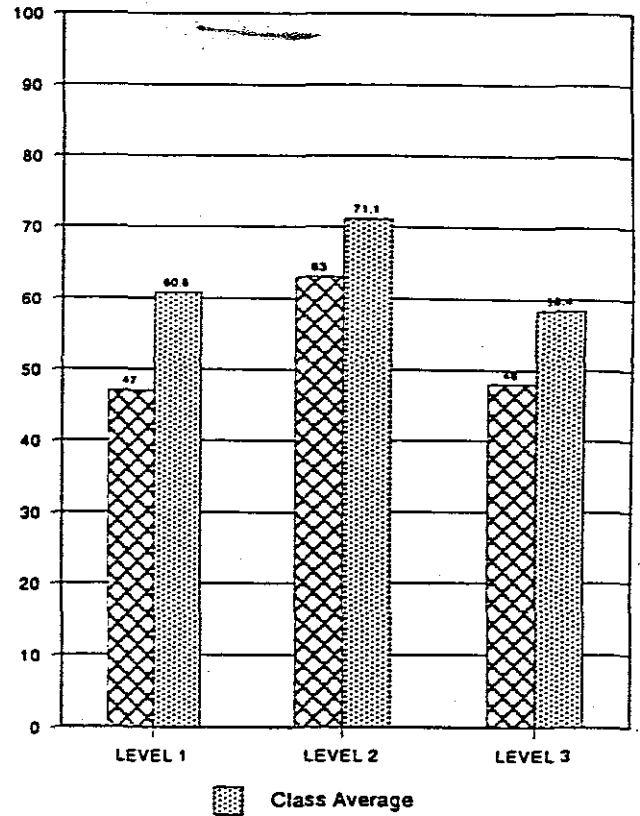
Plant Protection A



Level 1 = knowledge
 Level 2 = application
 Level 3 = evaluation

STUDENT 010

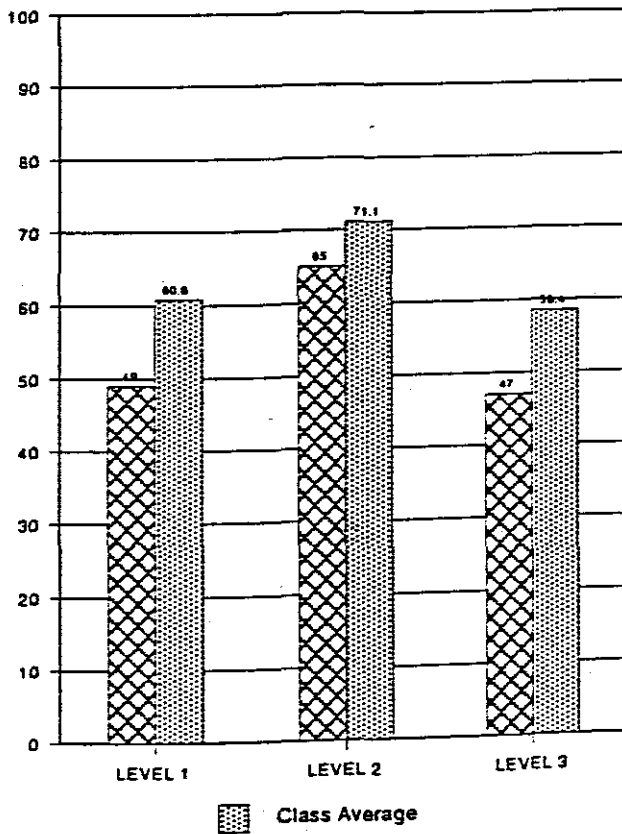
Plant Protection A



Level 1 = knowledge
 Level 2 = application
 Level 3 = evaluation

STUDENT 011

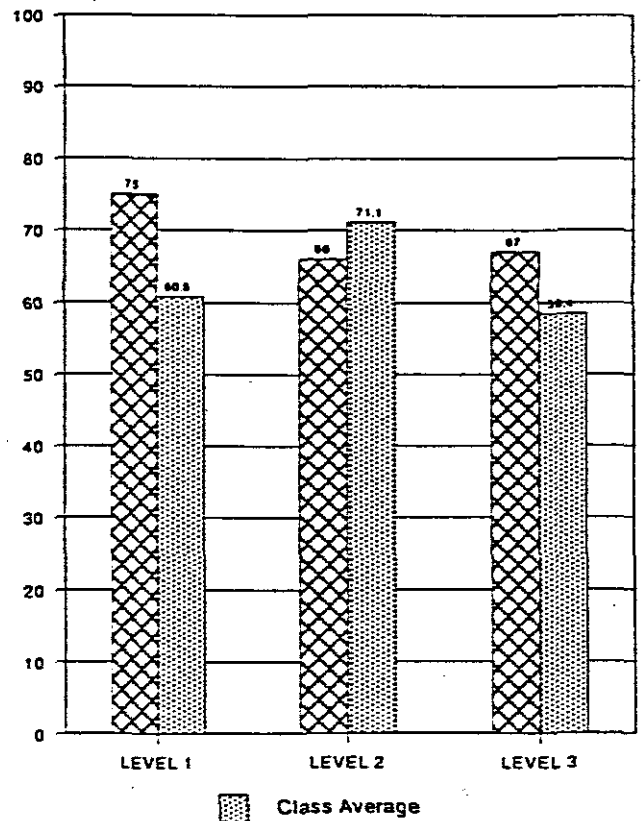
Plant Protection A



Level 1 = knowledge
 Level 2 = application
 Level 3 = evaluation

STUDENT 012

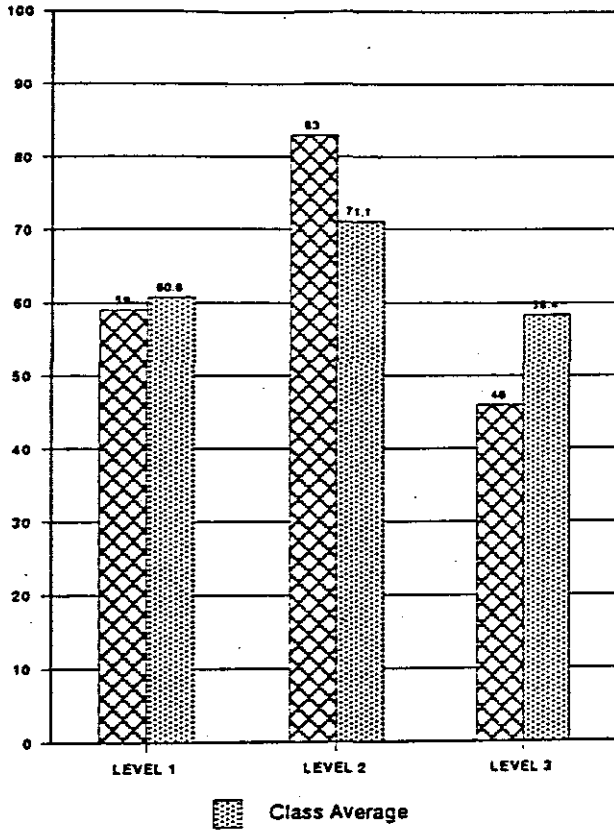
Plant Protection A



Level 1 = knowledge
 Level 2 = application
 Level 3 = evaluation

STUDENT 013

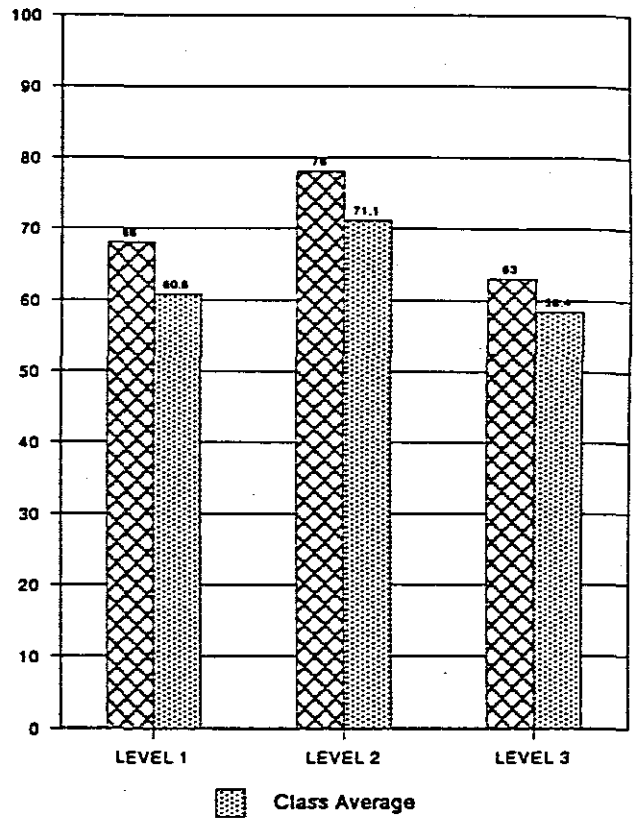
Plant Protection A



Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

STUDENT 014

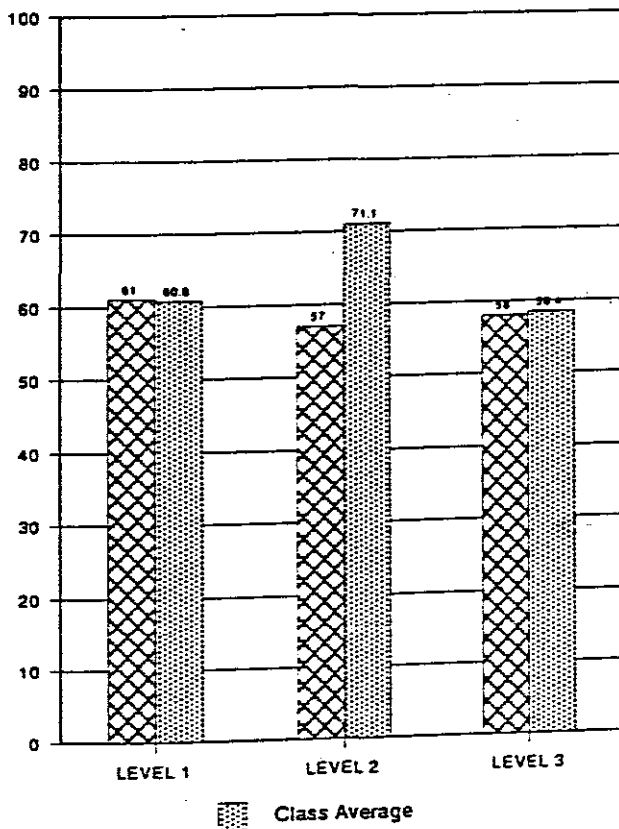
Plant Protection A



Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

STUDENT 015

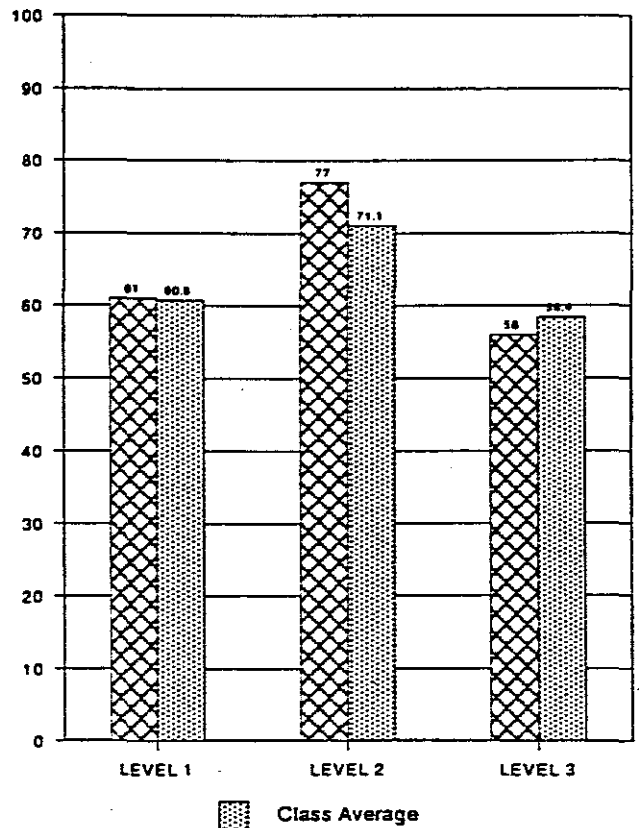
Plant Protection A



Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

STUDENT 016

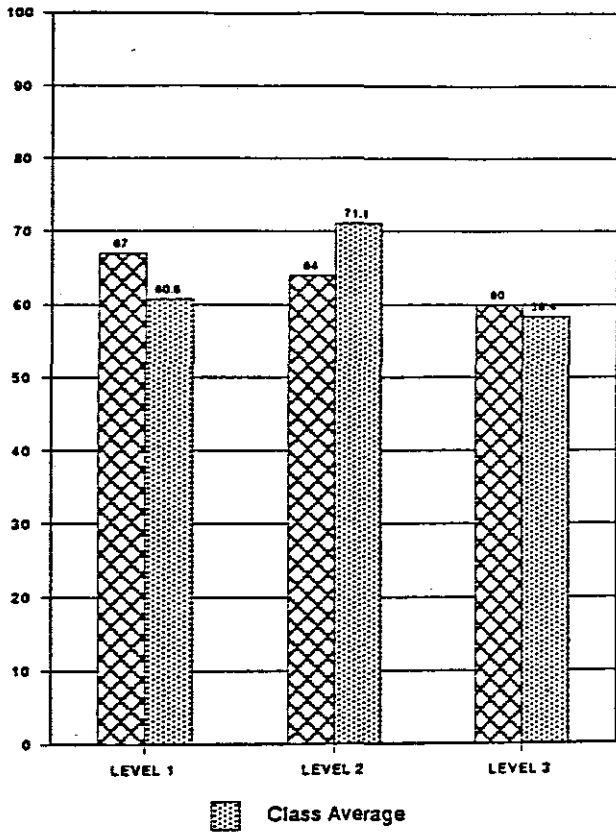
Plant Protection A



Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

STUDENT 017

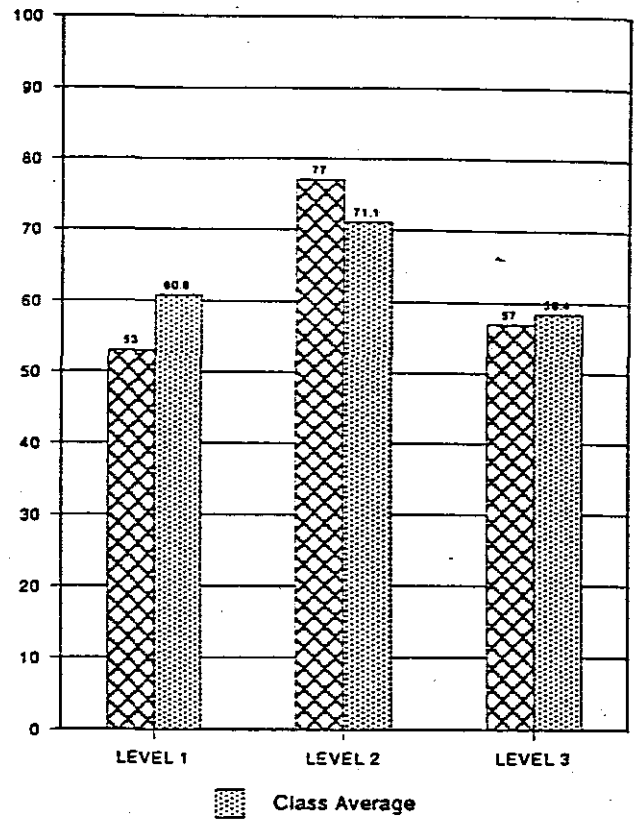
Plant Protection A



Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

STUDENT 018

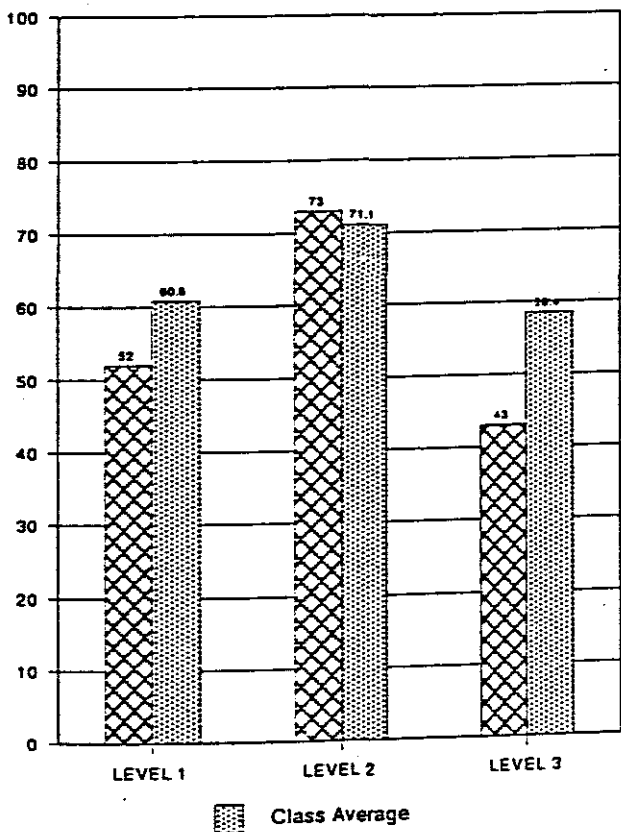
Plant Protection A



Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

STUDENT 019

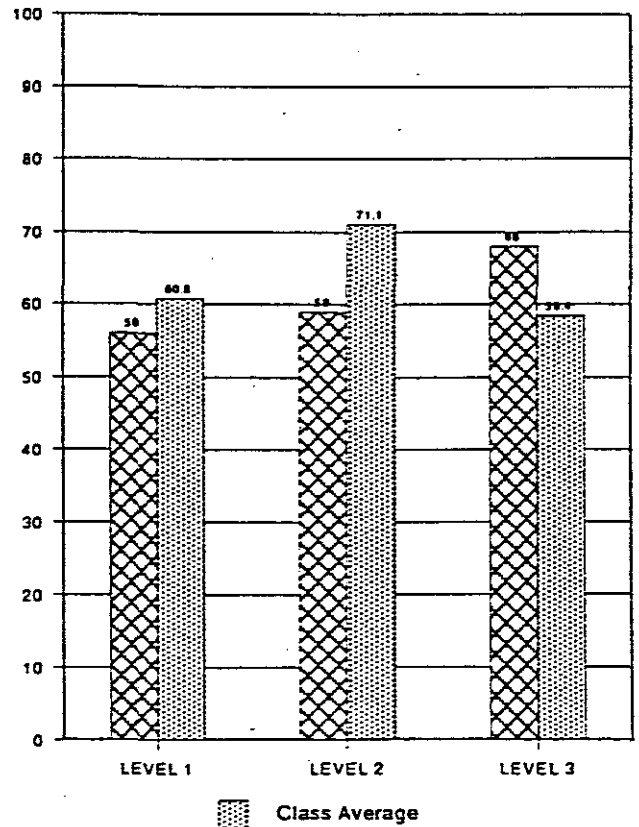
Plant Protection A



Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

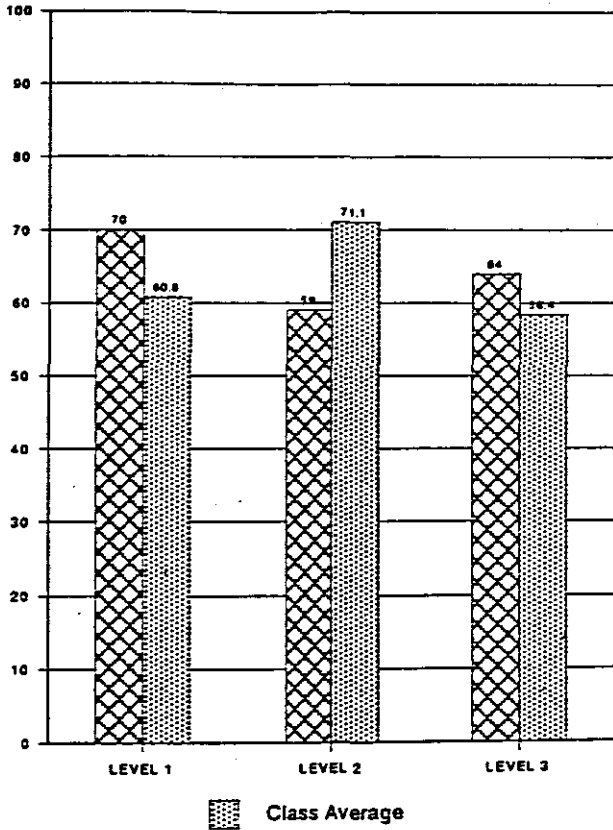
STUDENT 020

Plant Protection A



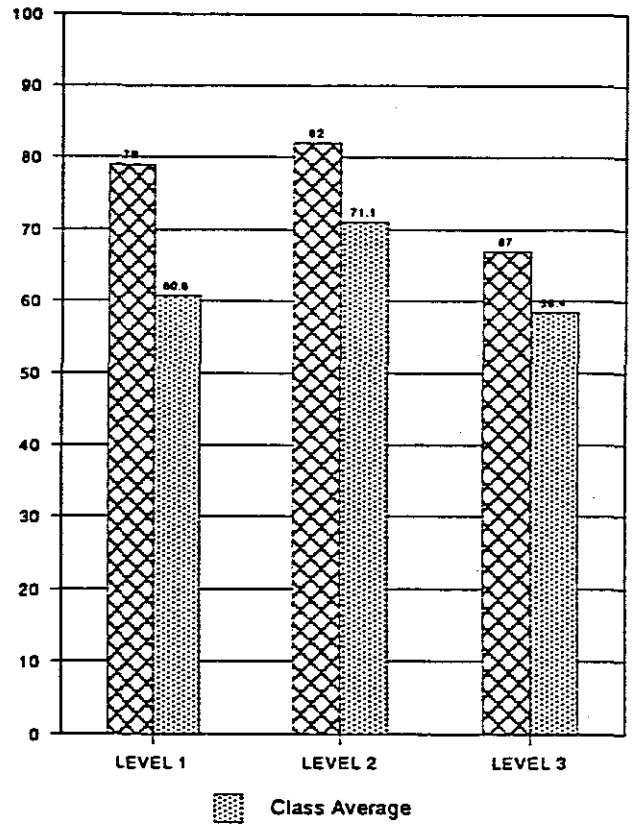
Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

STUDENT 021
Plant Protection A



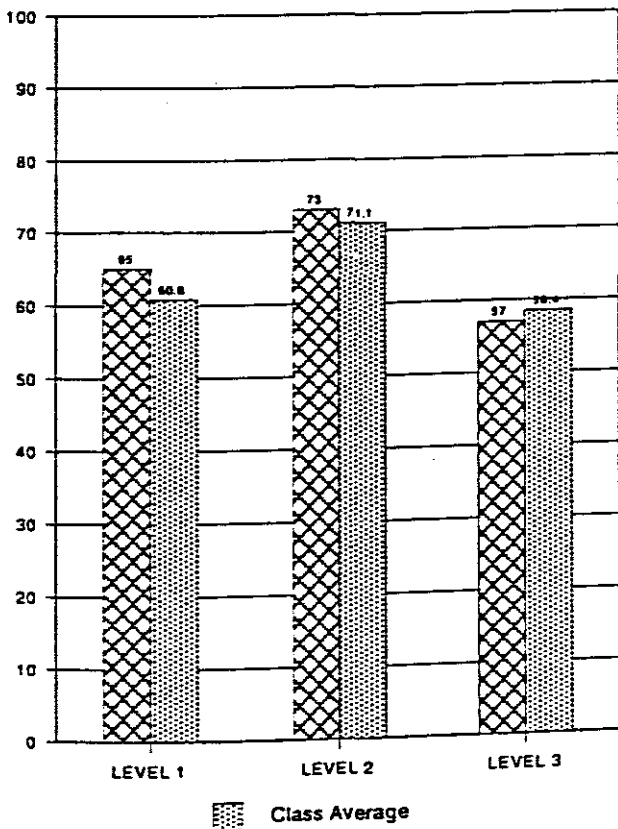
Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

STUDENT 022
Plant Protection A



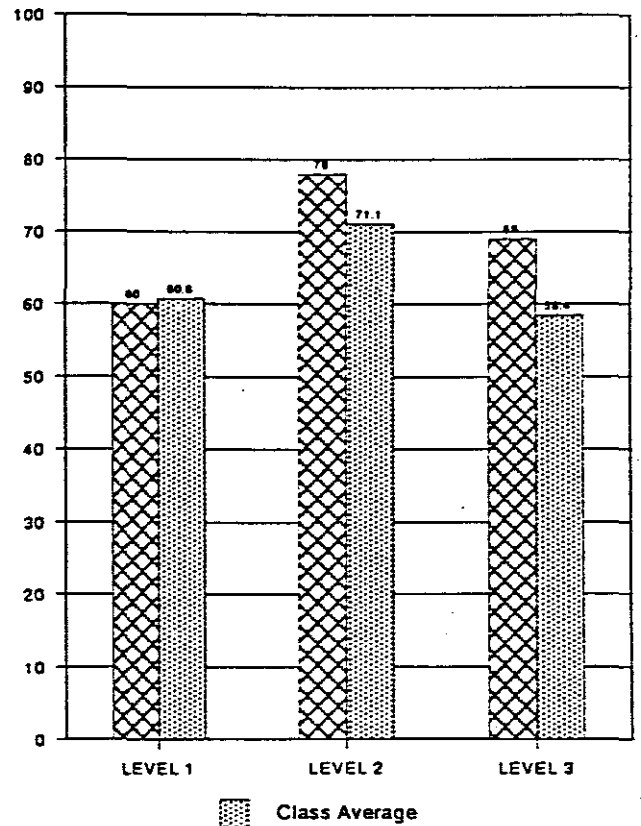
Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

STUDENT 023
Plant Protection A



Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

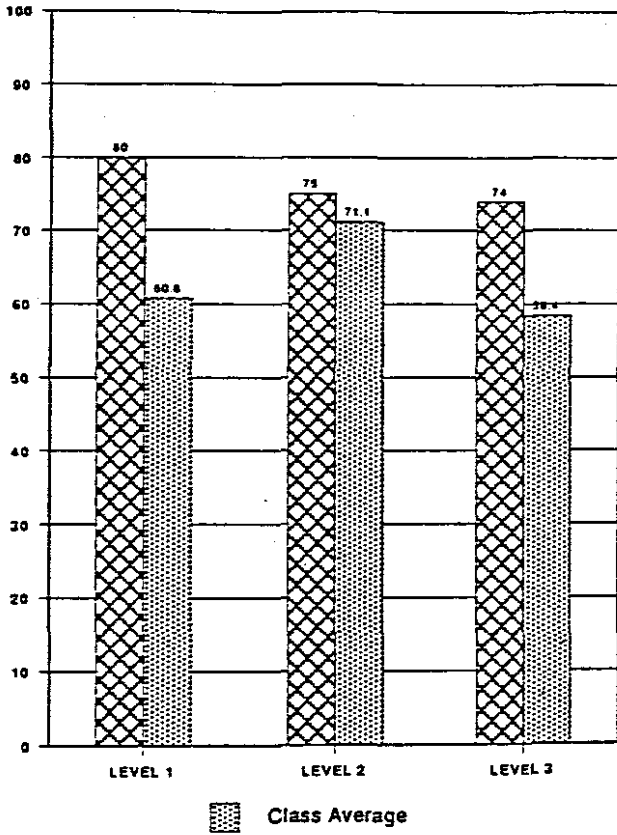
STUDENT 024
Plant Protection A



Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

STUDENT 025

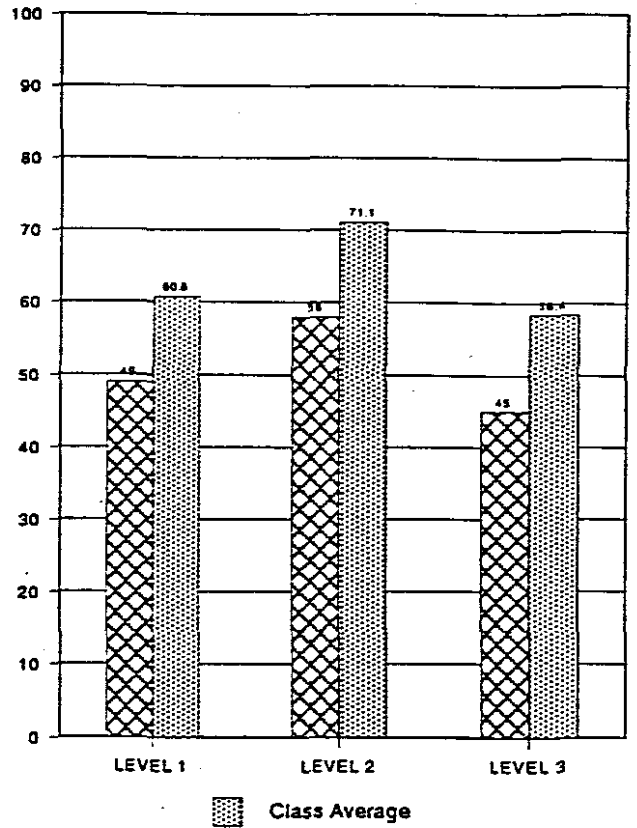
Plant Protection A



Level 1 = knowledge
 Level 2 = application
 Level 3 = evaluation

STUDENT 026

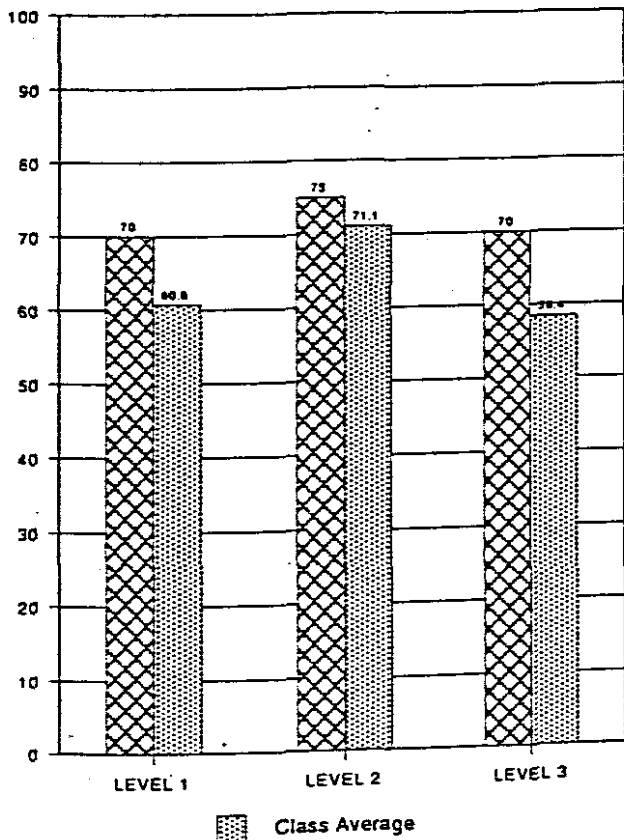
Plant Protection A



Level 1 = knowledge
 Level 2 = application
 Level 3 = evaluation

STUDENT 027

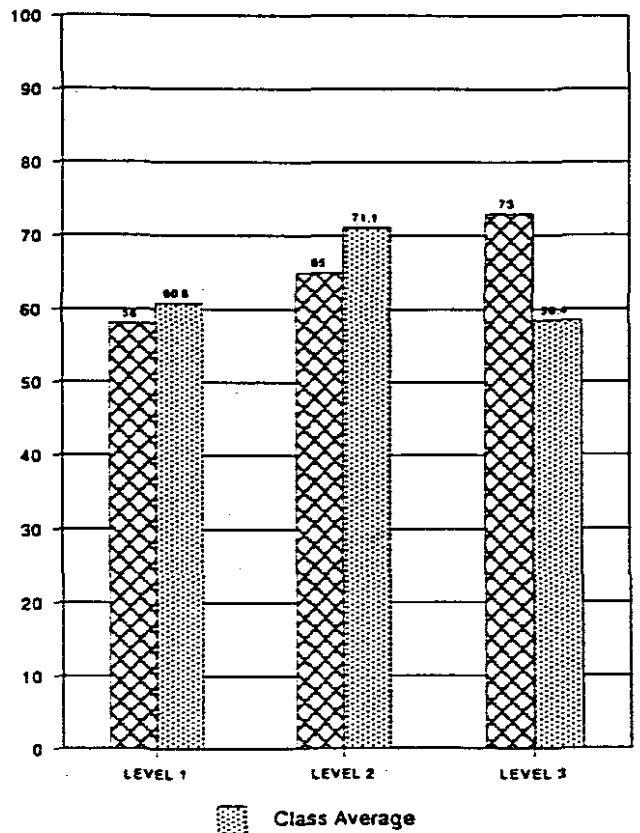
Plant Protection A



Level 1 = knowledge
 Level 2 = application
 Level 3 = evaluation

STUDENT 028

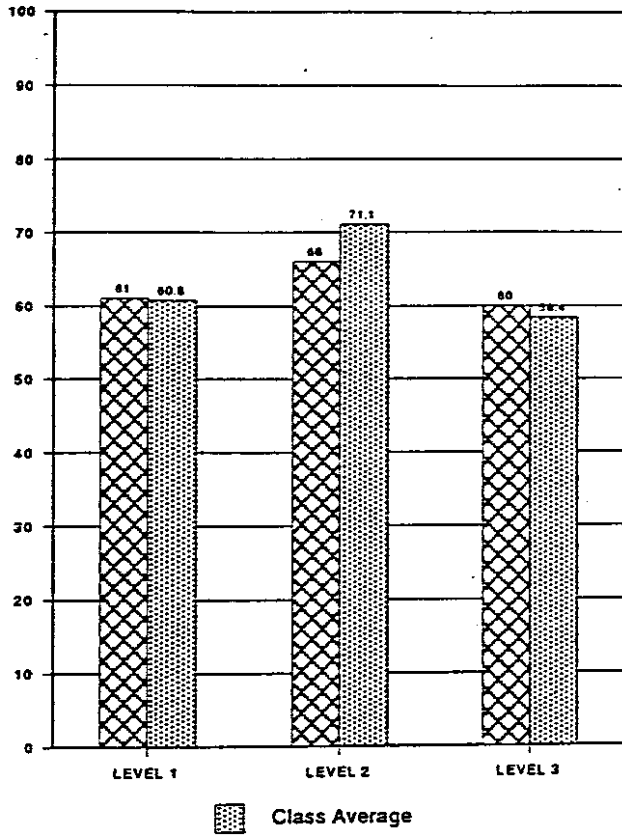
Plant Protection A



Level 1 = knowledge
 Level 2 = application
 Level 3 = evaluation

STUDENT 029

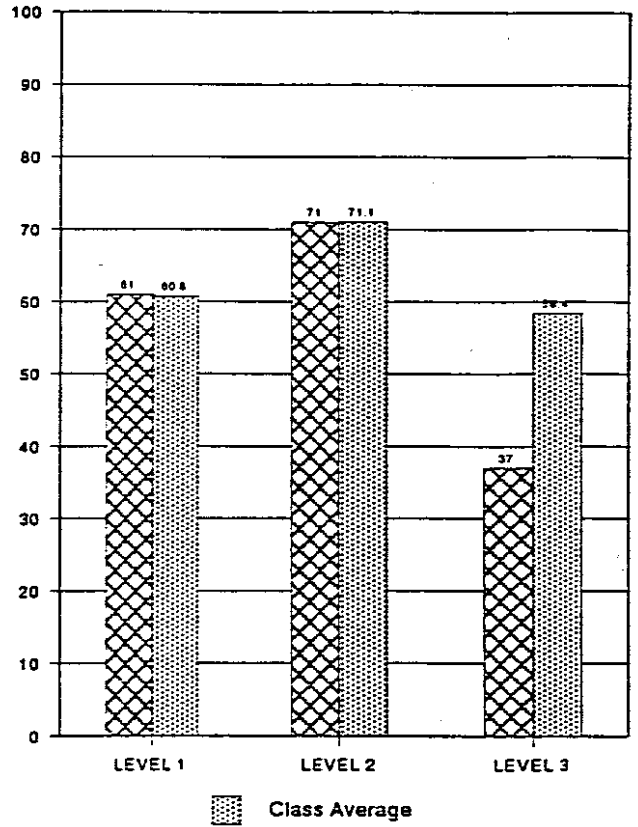
Plant Protection A



Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

STUDENT 030

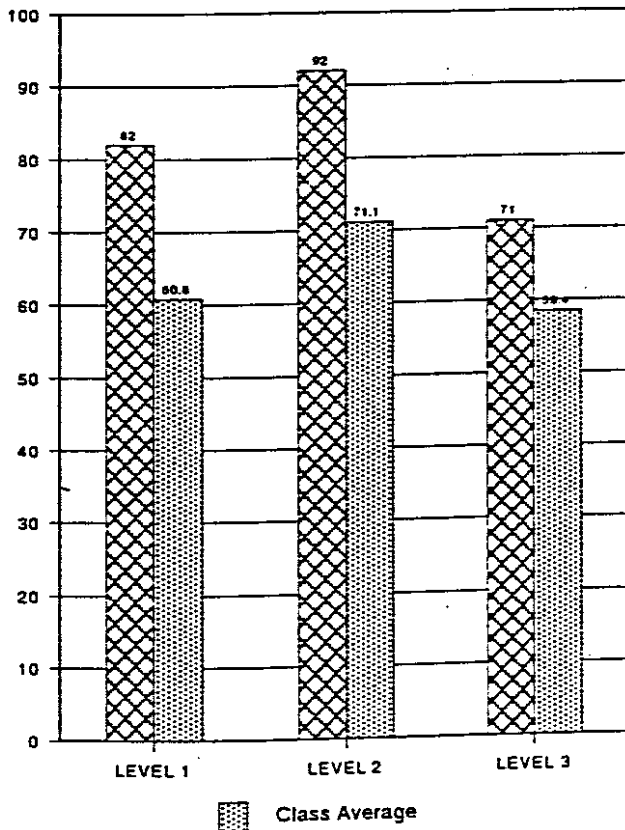
Plant Protection A



Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

STUDENT 031

Plant Protection A



Level 1 = knowledge
Level 2 = application
Level 3 = evaluation

APPENDIX M

1984 DES POLICY STATEMENT ON RECORDS OF ACHIEVEMENT

Records of Achievement: A Statement of Policy

"The Secretaries of State believe that there are four main purposes which records of achievement and the associated recording systems should serve.

1. Recognition of achievement. Records and recording systems should recognise, acknowledge and give credit for what pupils have achieved and experienced, not just in terms of results in public examinations but in other ways as well. They should do justice to pupils' own efforts and to the efforts of teachers, parents, ratepayers and taxpayers to give them a good education.

2. Motivation and personal development. They should contribute to pupils' personal development and progress by improving their motivation, providing encouragement and increasing their awareness of strengths, weaknesses and opportunities.

3. Curriculum and organisation. The recording process should help schools to identify the all round potential of their pupils and to consider how well their curriculum, teaching and organisation enable pupils to develop the general, practical and social skills which are to be recorded.

4. A document of record. Young people leaving school or college should take with them a short, summary document of record which is recognised and valued by employers and institutions of further and higher education. This should provide a more rounded picture of candidates for jobs or courses than can be provided by a list of examination results, thus helping potential users to decide how candidates could best be employed, or for which jobs, training schemes or courses they are likely to be suitable"

(Department of Education and Science, 1984 p3).