

## Identification of factors to improve the quality of graduates in Biological Science programme in University of Ruhuna

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### Abstract

*A questionnaires and interview based survey was conducted in 2005 to identify the nature, requirements and expectations of the undergraduates following Biological Science study programme in the Faculty of Science, University of Ruhuna. Objective of this survey was to assess the nature of current student population and get a feedback regarding the existing curricula to develop an effective programme to improve the quality of graduates to cater to the current demand of the country. The sample included undergraduates from all three batches (Part I, II & III) of the Biological Science study programme. Presently student intake for the study programme is 130 per year and the average Z score is  $0.99 \pm 0.24$  in 2004. Analysis of the nature of student population indicated that it does not represent a cross section of the country and 50% of the students are from southern region. Many students indicated that practical experience in industry or community based activities, communication, IT and management skills will improve their employable skills. Majority (52%) of students expected their occupation in government sector and a very few number of students indicated their willingness to work in private sector (2%) or in self employment (4%). This indicates the importance of including career guidance work into their curricula to change the attitude of students especially regarding career expectations.*

**Keywords:** Student profile, Biological Science study programme, University of Ruhuna

### Introduction

The Biological Science study programme conducted by University of Ruhuna has produced over 2000 graduates to cater to the demand of the country during the past 25 years. Generally the Biological Science graduates are employed in the natural sciences related fields in the public and private sector of the country. Since the economic policies and educational interests of the country has changed gradually in last decades, Biological Science graduates had difficulties in finding employment according to their expectations. Therefore, with the increasing competitiveness in the current employment opportunities, thorough academic knowledge is merely not sufficient. Since the lack of employability skills in science graduates adversely affect the finding of suitable employment, the development of employable skills in graduates is becoming one of the priorities in university education. To develop an effective programme it is essential to identify the nature, requirements and expectations of the undergraduates. Therefore a preliminary study was conducted in 2005 to identify the above mentioned factors in undergraduates following Biological sciences study programme.

### Method

A questionnaire and interview based survey was conducted in 2005 involving undergraduates from all three batches of the Biological Science study programme for the primary data collection. The secondary data such as Z score, student intake and student profile etc. were collected from the university documents.

### Results and Discussion

Presently student intake for the study programme is 130 per year (Table 1). The average Z score of the student population in 2004 academic year was  $0.99 \pm 0.24$ . (Table 1). However, it does not represent a cross section of all educational ranks for the biological study programme of the country (Fig 1 & 2) and mainly limited to three provinces namely Southern (48%), Uva (23%) and Sabaragamuwa (13%) (Fig 3).

Table 1 : Student intake, average Z score and student profile by gender of the students following Biological sciences study programme of University of Ruhuna

<b>Parameter</b>		
Student intake	·130/year	
Average Z score (only for Part I)	0.99 ± 0.24	
Student's profile	Male (%)	Female (%)
Part I	48.3	51.7
Part II	40.7	59.3
Part III	49.6	50.4

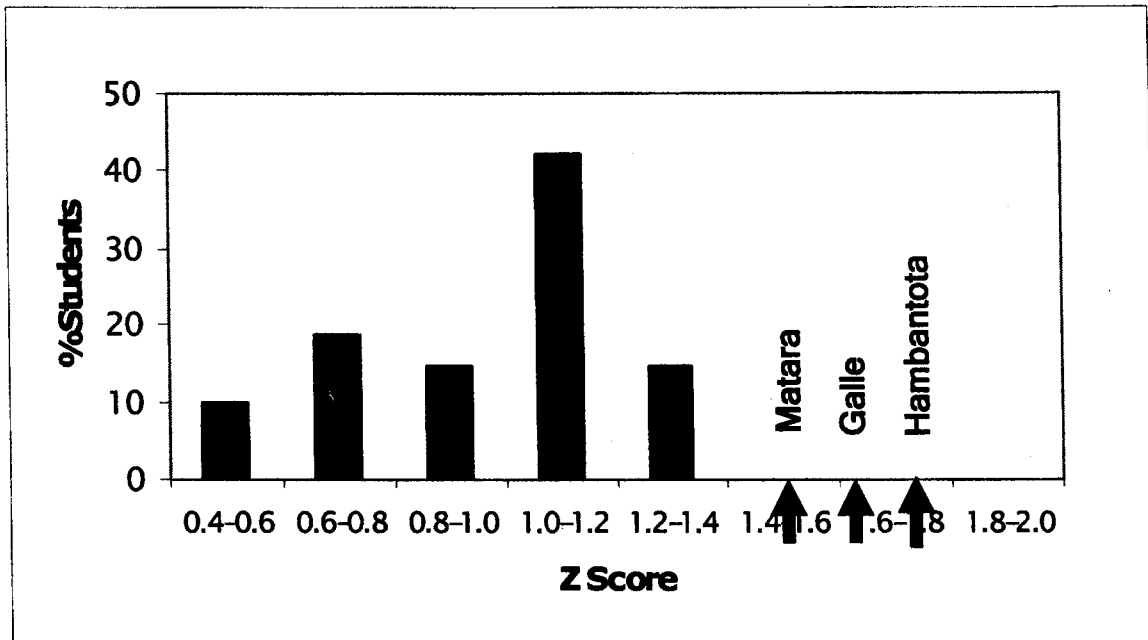


Fig 1. Z Score distribution of Students (2004 entrance) in Biological Science Programme. Arrows indicate cutoff points for university entrance for districts in Southern province in 2003.

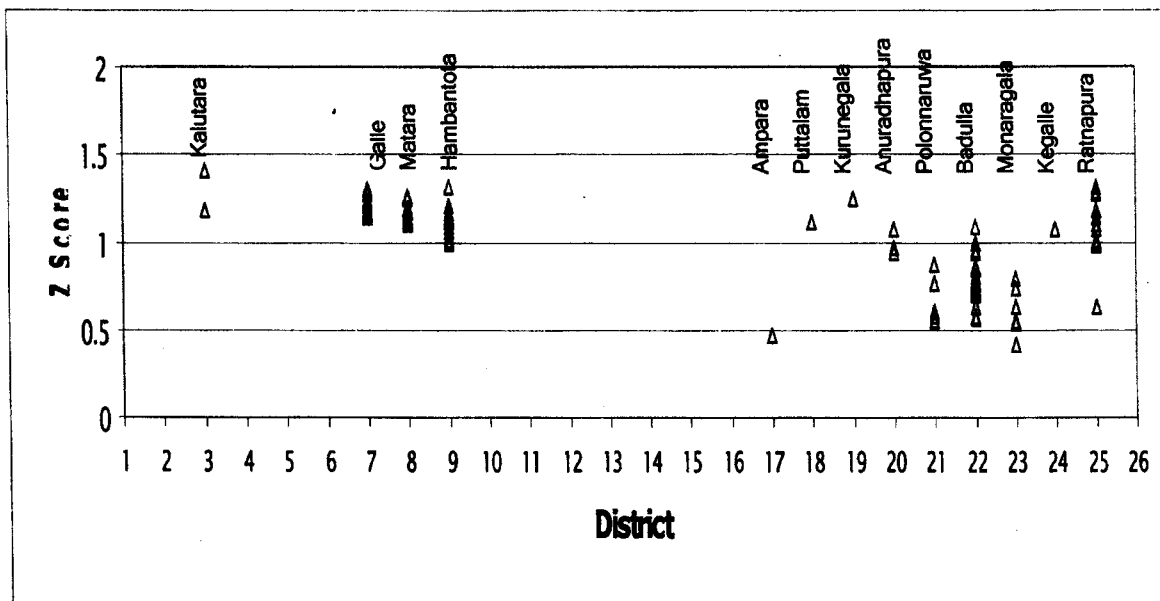


Fig 2. Z score distribution of students in relation to their regional distribution (2004 entrance). Δ- z score of a individual student

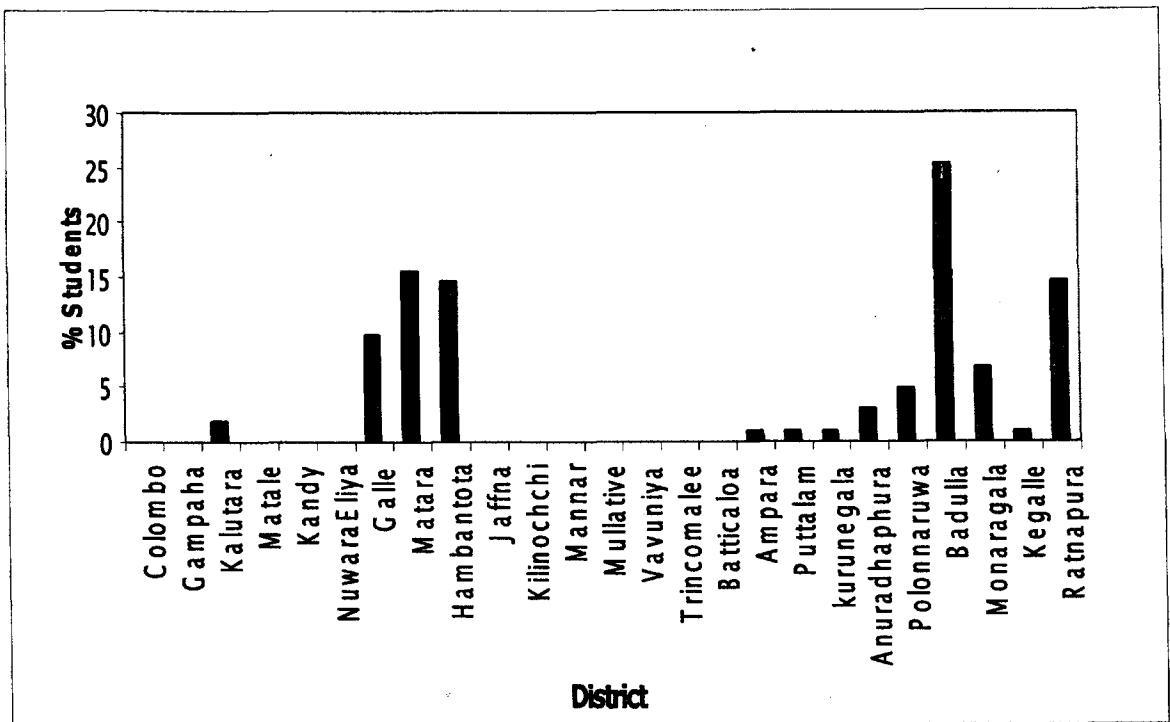


Fig 3. Regional distribution of students (2004 entrance) in Biological Science Programme.

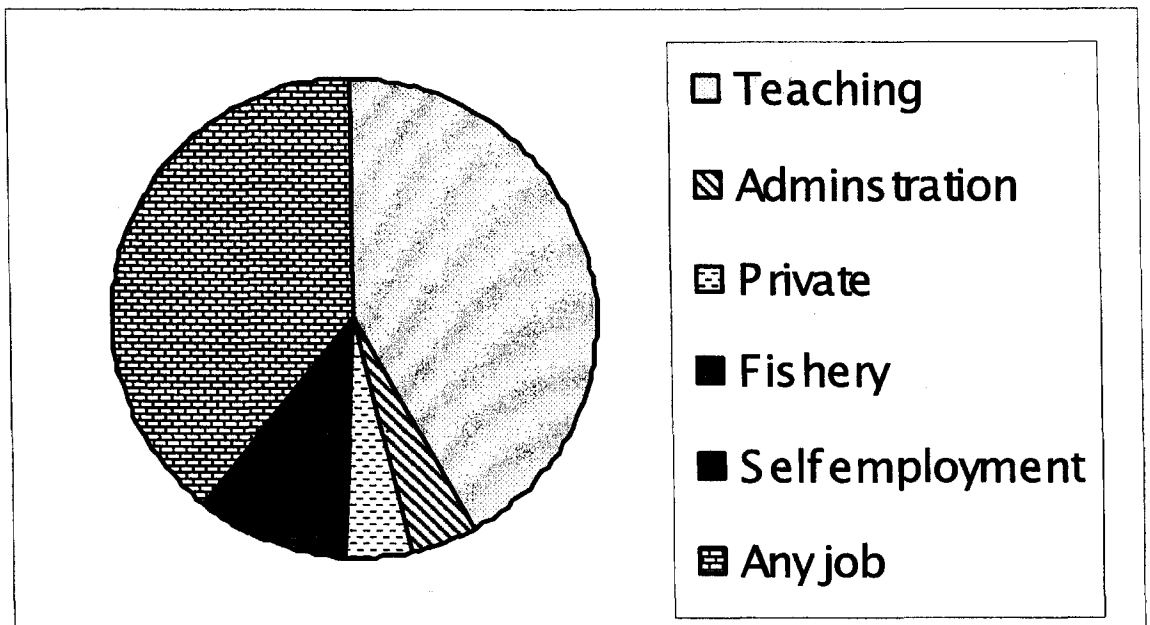


Fig 4. Expected occupations of students in Biological Science Programme.

Many students identified practical experience in industry or community based activities communication, IT and management skills as factors which would help to improve their employable skills (Table 2). In contrast to their requirements 52% of students expected their occupation in government sector. A very few number of students indicated their willingness to work in private sector (2%) or in self employment (4%) (Fig 4).

Table 2: Factors identified by students that will improve their employable skills

Factors	% Preference
Communication skills	4
IT & Management skills	14
Language capabilities	18
Practical experience in industry	64

Generally the Biological Science graduates are employed in the natural sciences related fields in the public and private sector of the country (Careem, 2005). Since the economic policies and educational interests of the country has changed gradually in last decades, Biological Science graduates had difficulties in finding employment according to their expectations (Kumar, 2005). It was also indicated that with the increasing competitiveness in the current employment opportunities, thorough academic knowledge is merely not sufficient and improvement of employable skills during university education is necessary to cater to the current demand of the country (Kumar, 2005). Analysis of the nature of student population indicated the monotonous nature of the student population prevents them from experiencing multiethnic and multiregional exposure during their university life, which is very important to develop the many key skills such as communication skills, leadership qualities, team work etc. Although the curricular have good practical component mainly based on theoretical knowledge, there are limited chances for having industrial training or to get interactions with industries and local community. This type of training programme is identified as one of the very successful activities for the skill development in undergraduates (Udayashantha and Dilhani, 2005). Since majority of students anticipate to work mainly in the government sector it is essential to change the attitude of students especially regarding their career expectations by including career guidance work into their curricula.

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