

RUQAS 2022 Ruhuna Quality Assurance Sessions 2022 Achieving Built-In Quality

PROGEEDINGS



III

-

University of Ruhuna 21st September 2022



RUQAS 2022

Proceedings

Ruhuna Quality Assurance Sessions 2022

Achieving Built-In Quality

21st September 2022

Centre for Quality Assurance University of Ruhuna Sri Lanka

Copyright © 2022 by University of Ruhuna, Sri Lanka

© 2022 All rights reserved. No part or whole of this publication may be reproduced, stored in retrieval system, or transmitted in any form or by any means such as electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the Director, Centre for Quality Assurance (CQA) of University of Ruhuna, Matara, Sri Lanka.

Editorial Board

Snr. Prof. (Mrs.) Kanthi K. A. S. Yapa (*Editor-in-Chief*)
Snr. Prof. (Mrs.) Vajira P. Bulugahapitiya
Snr. Prof. Vijith S. Jayamanne
Snr. Prof. (Mrs.) W. T. S. Dammini Premachandra
Dr. (Mrs.) T. N. Wickramaarachchi
Dr. Tharanga Ramanayake
Dr. B. L. Galhena
Dr. Asanka D. Jayasinghe
Mr. Nimal Hettiarachchi

Cover Page Design

Mr. C. C. De S. Jayamuni

Technical Editing

Mr. Nimal Hettiarachchi

Published by

Centre for Quality Assurance, University of Ruhuna, Matara, Sri Lanka. Tel: (+94) 0412222681, (+94) 0412227001 Fax: (+94) 0412222681 URL: https://adm.ruh.ac.lk/cqa/

ISBN: 978-624-5553-31-0 (EBook)

The correct citation of the proceedings:

Author (s), (2022). Title of the paper. Proceedings of the Ruhuna Quality Assurance Sessions 2022 (RUQAS 2022). University of Ruhuna, Sri Lanka. 21st September 2022. Pp.

Table of Contents

	Page
Preface	iv
Message from the Vice-Chancellor, University of Ruhuna	v
Message from the Director, Quality Assurance Council, University Grants Commission	vi
Keynote Speech of the Ruhuna Quality Assurance Sessions 2022 Rethinking built-in quality in higher education: Strategies for success Emeritus Professor Deepthi Bandara	viii
Research Papers/Extended Abstracts on Quality Assurance	
Use of online mode in quality assurance: Experience from a medical faculty in Sri Lanka B. J. Wijerathne, K. L. M. D. Seneviwickrama, R. B. Marasinghe, & D. R. Wickremasinghe	1
Determinants of quality of university education from undergraduates' perspective: A case of Faculty of Agriculture in the University of Ruhuna, Sri Lanka <i>R. P. A. D. Thakshila, M. G. T. Lakmali, & G. C. Samaraweera</i>	7
Assessing the quality assurance awareness of nonacademic staff: A case study of the Faculty of Agriculture in the University of Ruhuna, Sri Lanka <i>R. P. A. D. Thakshila, M. G. T. Lakmali, & G. C. Samaraweera</i>	15
Upper extremity impairments in higher education: Types of assessment accommodations provided and student perspectives <i>P. V. S. S. Ranthilini</i>	20
Satisfaction on the opportunities and employability skills received during the undergraduate period: A study of graduates of Allied Health Sciences Faculty in the University of Ruhuna, Sri Lanka	28
	26
K. G. S. H. Gunawardana, V. H. P. Vitharana, K. K. N. B. Adikaram, I. K. Dias, & R. L. Hettiarachchi	36
Temporal analysis of student satisfaction on degree programmes conducted by the Faculty of Fisheries and Marine Sciences & Technology in the University of Ruhuna, Sri Lanka <i>H. B. Asanthi, K. S. S. Atapaththu, S. S. Herath, L. N. Wijewardene, & A. W. A. T. Dilhan</i>	43

Perception of students on online examinations: A case study of the Faculty of Fisheries and 51 Marine Sciences & Technology in the University of Ruhuna, Sri Lanka *E. G. K. Y. C. Bandara, R. D. N. Wijesinghe, & R. G. Sanuja*

Models/Concepts/Proposals for Quality Assurance

Centralized online course evaluations conducted by the Faculty of Medicine in the University 59 of Ruhuna, Sri Lanka S. S. Jayasinghe, U. A. P. A. Chandrasiri, H. G. G. I. Manthika, & W. K. A. Prasadi

Implementation of teaching excellence model and measuring teaching performance: Case of 63 Department of Finance in the University of Kelaniya, Sri Lanka *S. S. Weligamage, R. Abeyesekera, W. G. I. D. Premarathne, & P. A. S. D. Perera*

Introduction of a competency-based evaluation framework to assess clinical skills in undergraduates of BSc (Hons) in speech and hearing sciences in audiology 67

L. D. Ileperuma, & M. D. K. de Silva

Preface

The editorial board is very pleased to unveil the proceedings of the 2nd Ruhuna Quality Assurance Sessions – 2022 under the theme "Achieving Built-In Quality". At present, universities in Sri Lanka very actively engage in improving the quality of their final products, the graduates they produce, to satisfy varying societal needs. In order to produce a "Global Graduate", a university has to nurture critical thinkers, effective communicators, innovative problem solvers, and socially responsible global citizens. To produce such quality graduates, all study programmes, services, and extra-curricular activities that a university offers need to have quality built in at every level of planning and at every level of execution. As academics, administrators, and service providers it is our utmost duty and responsibility to assure such built-in quality in all university processes that we engage with. The Ruhuna QA Sessions 2022 is particularly aimed at awakening the university community of the need for such commitment and dedication.

The Ruhuna QA sessions is a platform for researchers to share their concepts, good practices, innovative models, and research outcomes in the context of improving and assuring quality in all levels of engagements. The Centre for Quality Assurance and all Internal Quality Assurance Cells of the University of Ruhuna present their quality assuring activities that were taken place during the past year, mainly to recognize and appreciate efforts by all involved, to share innovative ideas with others, and to motivate the university community to continue its quality improving engagements in the coming years. This year, the editorial board extended its invitation of call for papers beyond University of Ruhuna, to other public and private higher education institutions in the country widening the forum to share quality aspects. From the eighteen manuscripts received, eleven have been accepted after a thorough review for presentation at the sessions together with publication in the proceedings.

The editorial board extends its sincere appreciation for all authors who submitted their manuscripts in varying aspects of quality assurance to make the sessions a success. The exhaustive effort by reviewers in attending to the review process promptly and giving suggestions and comments for further improvement of manuscripts is deeply appreciated. The editorial board sincerely wishes that these proceedings will help the university community to achieve built-in quality in all aspects of services, processes and deliveries.

Editorial Board

Ruhuna Quality Assurance Sessions 2022 (RUQAS 2022) University of Ruhuna Sri Lanka. 21st September 2022

Message from the Vice-Chancellor, University of Ruhuna

It gives me great pleasure to send the Vice Chancellor's message to the second Ruhuna University Quality Assurance Session this year (RUQAS-2022) under the theme "Achieving Built-In Quality." As the Vice Chancellor, it is one of my duties to promote the University of Ruhuna as a Lean Management Organization, which needs continuous quality improvements. This approach relies on the use of continuous quality improvement tools to improve processes rather than quality inspections to identify deficiencies following event or process implementations. Built-in quality will identify issues as they emerge.

The specific objective to establish a Centre for Quality Assurance (CQA) at University of Ruhuna was to enhance the quality and maintained that enhanced quality in each section of the university with the ultimate goal of providing the highest quality education not only to the nation, but also for the worldwide. During that effort, CQA will follow necessary procedures to expand access to education to meet the needs of the country and align with national educational policy frameworks, ensuring justice, transparency, and equity functions and processes, contributing towards good governance, and inculcating the culture of quality enhancement among students and staff.

RUQAS is a platform that facilitates a stimulating environment for academics and administrators to share their newly created knowledge by engaging in research and futuristic ideas under the broader thematic areas of quality higher education. Conducting these kinds of sessions is important to disseminate knowledge and establish channels of communication among researchers and professionals.

I believe that the knowledge everyone shared and received from this session would be helpful for the betterment in providing the best quality higher education for future generations.

I profoundly appreciate the enormous effort of the Director, Centre for Quality Assurance, and the committee for organizing RUQAS-2022. I wish to extend my wholehearted wishes for RUQAS 2022 to be successful.

Senior Professor Sujeewa Amarasena

Vice-Chancellor University of Ruhuna Sri Lanka.

Message from the Director, Quality Assurance Council, University Grants Commission

Learning is a lifelong process where we gather knowledge, skills, and competencies intentionally or unintentionally. Education is a man-made, systematic process to facilitate learning by transmitting knowledge and fostering skills through purposeful activity to achieve certain aims. In this context, universities aim to provide higher education to those who have completed their secondary education and can obtain higher level of knowledge, skills, and competencies in a specific discipline, and get a degree to recognize this.

We are now living in a postmodern society that is different from modern society which is considered to have ended in the late 20th century, in the 1980s or 1990s. The value system of the postmodern society is different from the modern era. These changes are demanding skills that are different to the skills needed in the past.

Though learners who obtained their degrees through formal higher education systems are valued socially, their knowledge and skills are different from what is currently in demand. This skill mismatch refers to the gap between skills supplied by the education process and the skills in demand. This skills gap between graduates and employer expectation is a key issue in university education as its knowledge contribution is intricately linked with the economic growth of a country. In examining the contribution of higher education to economic growth, the mismatch between supply and demand, rise in graduate unemployment, and a growing trend of key qualifications can be identified as common issues in many countries.

Transforming education to address the skill gap requires serious attention and must be underpinned by strong political commitment, sound planning, and assurance of its quality based on a robust evidence base. In that sense, Sri Lanka's Higher Education system has a long way to go in order to address the skill gap. Quality Assurance serves three main purposes: commitment to maintain and improve the performance quality of higher education institutions; accountability to provide accountability to society for the use of public funds and compliance; and control to ensure that higher education institutions do what public and governments want them to do.

The Quality Assurance Council (QAC) of the University Grants Commission (UGC) has taken every step to address the skill gap issue through its QA tools and has noted some improvements in the state sector higher education. Also, it has given its recommendations to transform future educational landscape fitting the forecasted demand areas.

The University of Ruhuna has shown its interest to comply with the national QA framework better than any other university. At the recent Institutional Review conducted by the QAC, the university has

shown its competency as a higher education provider and has obtained a very good grade. During the last few years, the university has been able to increase diversity of its programmes, providing more opportunities for students to follow more demanding programmes. I hope this academic session on QA will help review the experience gathered in the past and apply them better to ensure the quality of its education provisions. I extend my best wishes to this influential academic event, Ruhuna QA Sessions 2022!

Senior Professor Tilak P. D. Gamage

Director Quality Assurance Council University Grants Commission Sri Lanka.

Keynote Speech of the Ruhuna Quality Assurance Sessions 2022

Rethinking built-in quality in higher education: Strategies for success

Professor Deepthi Bandara

Emeritus Professor, University of Peradeniya, Sri Lanka

The modern concept of quality, which evolved from the original "fitness for purpose" or "exceptional nature with zero defects" to a "process of transformation providing value for money", is now considered a desirable attribute of every human activity including higher education. However, unlike the industrial model of quality where precise control is expected of its product, in the role of Universities and Higher Education Institutes (HEIs) as providers of knowledge generation or innovation, the concept of quality is applied to the education service and not only to the output of the process - it is graduate. Hence, the concept of quality in higher education has to be viewed for its multi-dimensional nature, which encompasses all its functions and activities including teaching/ learning, research, and community service.

At present, Sri Lanka is in an unprecedented critical situation amounting to a crisis. Hence, I strongly believe that rethinking built-in quality in higher education would be an appropriate topic for us to consider, especially to strategize how we could succeed to contribute to recover/overcome the situation and move towards better times. The higher education system must produce graduates/citizens who would contribute to the economy and society to ensure that such crises do not come in the future.

Quality of higher education can be described as the degree to which the education meets the client's needs and demands. In this respect, higher education has two different clients: students and society. Quality assurance in higher education includes all policies, procedures and practices through which the quality of higher education is maintained and developed.

Let us now consider how we can meet the clients demand successfully. Has Sri Lanka's higher education been able to achieve this?

Currently in the QA framework for State Universities in Sri Lanka, a five-pronged approach is taken. These are the external quality assurance (EQA) conducted by the QAC of the UGC, internal quality assurance (IQA) expected of all Universities, compliance with the Sri Lanka Qualification Framework (SLQF), use of subject benchmark statements (SBM) in curricula design and codes of practice (CoP) adhered to and respected by all aspects of governance and management. Since our topic is built-in quality, I hope to limit this speech to the IQA, SLQF, and the SBMs and discuss how strategies could be developed in these for success.

Three important criteria included in both Institutional reviews and program reviews, which must be considered in this respect, are Curriculum Development, Teaching and Learning, and Assessments and Awards. In my mind, strategies for success to achieve built in quality lie to a high degree with these and naturally, staff development should follow. As such, the Center for Quality Assurance (CQA) in any State University must strive to ensure these processes are at an optimal level if in-built quality is to be achieved. The requirements of the SLQF and SBMs will be automatically satisfied if such optimal systems are operational.

Let us look at some issues of concern.

- Increasing graduation rates and levels of educational attainment will accomplish little if students do not learn something of lasting value contributing to societal development.
- University students today seem to be spending much less time on their course work than their predecessors did 50 years ago.
- Employers complain that many graduates they hire are deficient in basic skills such as writing, problem solving, and critical thinking.
- Most of the thousands of additional students needing to increase educational attainment levels will come to campus poorly prepared for university work.
- A majority of university teachers and instructors do not have adequate training in curriculum development, teaching/learning/assessment strategies to design curricula, which would produce graduates who could serve society effectively.
- Governments have made substantial cuts in support per student over the past 20 years for public universities.
- While some university leaders are making serious efforts to improve the quality of teaching, many others seem content with their existing programs.

So, how do we strategize for success and achieve built-in quality?

Some immediate improvements;

Many Universities/HEIs provide a formidable array of courses, majors and extracurricular opportunities, but first-hand accounts indicate that many undergraduates do not feel that the material conveyed in their readings and lectures/lessons has much relevance to their future employment opportunities or lives.

Now that most faculties have defined the learning objectives/outcomes of their faculties and its various departments and programs, it should be possible to review recent examinations to determine whether individual professors, programs, and departments are actually designing their courses to achieve those goals.

In addition, the average time students devote to studying varies widely among different HEIs, and many HEIs could require more of their students. Those lacking evidence about the study habits of their undergraduates could inform themselves through confidential surveys that faculties could review and consider steps to encourage greater student effort and improve learning.

The vast difference between, how well senior students think they can perform, and their actual proficiencies (according to tests of basic skills and employer evaluations) suggests that many HEIs are failing to give students an adequate account of their progress. Better feedback on student papers and exams will be even more important in order to give undergraduates a more accurate sense of how much progress they have made and what more they need to accomplish before they graduate.

More substantial reforms;

More fundamental changes will take longer to achieve but could eventually yield even greater gains in the quality of undergraduate education.

They include;

- Improving teacher training
- Universities/HEIs need to reconfigure staff development programs to better prepare aspiring professors for teaching
- Aspiring college instructors also need to know much more now in order to teach effectively

In closing, the CQA in State Universities have an important if not unparalleled role to play in achieving built in quality. It is appreciated that at present the management committee of the CQA serve in a voluntary capacity. If the CQA is to make a significant impact it is imperative that these members have very good knowledge on curriculum development, teaching/learning, and assessment and that they make regular input to the university's higher education strategies. As such, it would be to the advantage of the University to select individuals who have a passion for enhancement of the quality of higher education, provide them with adequate and effective training, permit them to propose and formulate strategies for success and appreciate their efforts by adopting them and crediting them when success is achieved.

Research Papers/Extended Abstracts

on

Quality Assurance

© Proceedings of the Ruhuna Quality Assurance Sessions 2022 (RUQAS 2022) 21st September 2022

Research Papers/Extended Abstracts

Use of online mode in quality assurance: Experience from a medical faculty in Sri Lanka

B. J. Wijerathne, K. L. M. D. Seneviwickrama^{*}, R. B. Marasinghe, & D. R. Wickremasinghe

Internal Quality Assurance Cell, Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka

*Corresponding author: maheeka@sjp.ac.lk

Abstract

Internal Quality Assurance Cell (IQAC) of the Faculty of Medical Sciences, University of Sri Jayewardenepura (FMS-USJ) faced several challenges in the implementation of its quality assurance (QA) activities during the COVID-19 pandemic. One of the main challenges was the restriction of face-to-face meetings. Therefore, IQAC started using online platforms for possible activities. This paper showcases the experience gained by IQAC FMS-USJ using online platforms. Face-to-face attendance of the committee members (N=23) at monthly IQAC meetings over the year 2020 was compared with online meetings in 2021. Student satisfaction on teaching and learning activities and facilities provided were assessed using a Google form shared with the whole batch at the end of each phase: Phase 1- first two years, Phase II- 3rdto 4thyear, and Phase III- final year (N=459). The questionnaire consisted of closed-ended questions on a 5-point Likert scale on different aspects of teaching and learning activities and facilities provided. The responses were analysed and the report was submitted to relevant committees to take remedial actions. Response rates and mean satisfaction scores were compared between the three phases. Peer evaluation was conducted by allocating each colleague to a peer teacher. Online evaluation forms were used and the collected feedback was reviewed at the departmental level. Summary of the peer evaluation report is to be submitted to the Department of Medical Education and then to the Curriculum Development Committee. Compared to face-to-face attendance, online attendance was consistently higher and became statistically significant in September (t=3.32, p=0.0008). In student satisfaction, a higher response rate was observed in Phase I. Completeness and clarity was 100% for all the online responses in peer evaluation. The most common teaching method evaluated was lectures. Monitoring the quality assurance (QA) activities, student satisfaction, and peer evaluation via online platforms is feasible and acceptable.

Keywords: Medical education, Online, Quality assurance

Introduction

The external review of the MBBS programme of the Faculty of Medical Sciences, University of Sri Jayewardenepura (FMS-USJ) was conducted in September 2019. The Internal Quality Assurance Cell (IQAC) reviewed the report and an action plan was drafted which was presented to a number of committees and discussed extensively before finalising for the faculty board and the senate for the approval.

Main challenge faced in implementation was the COVID-19 travel restriction. However, with the introduction of online video-conferencing modality (Zoom), the faculty started its activities online, hence IQAC recommended using it for possible activities. This paper showcases selected areas, mainly monitoring of the quality assurance (QA) activities, student satisfaction, and peer evaluation, which use online platforms to continue quality assurance activities.

Methodology

Monitoring of the QA activities

The inclusion of QA as an agenda item in the minutes of the meetings held at each level such as departmental, phase, curriculum development, and faculty board meetings has created a conducive environment for QA. Extracts of these meetings were sent to the relevant academic committees. The IQAC committee met monthly and discussed the progress of the QA related activities under each criterion. Extracts of the monthly IQAC committee meetings were submitted to the Faculty Board. Action plan monitoring was carried out by the same criterion sub-committees and discussed monthly at IQAC meetings. Action plan monitoring was made a separate agenda item in the Faculty Board meetings. Extracts of the monthly IQAC committee meetings were forwarded to the Senate while the confirmed minutes were forwarded to the Centre for Quality Assurance (CQA).

For each QA related activity introduced, responsible persons and the reporting mechanisms were identified. Based on the sources of evidence identified by criterion subcommittees, responsible persons for submission of the evidence and the reporting frequency were identified. A database was created for the IQAC to streamline the collection of all evidence under each standard of the eight criteria (UGC, 2015). A training session was conducted for all who are responsible for uploading the documentary evidence for the IQAC database.

Attendance of IQAC members at monthly meetings, held face-to-face from August 2020 to January 2021, was compared with online meetings from August 2021 to January 2022 (Figure 1).

Student satisfaction survey

An anonymous student satisfaction survey questionnaire was prepared by referring to the areas stated in the programme review manual (UGC, 2015). Each section contained 2-3 closed-ended questions containing responses on a 5-point Likert scale where 1= highly unsatisfied and 5= highly satisfied. At the end of each section, an open-ended question was included to gather information on any issues pertaining to that section or suggestions to improve. Thematic analysis was carried out for the qualitative data.

The questionnaire was converted to a 'Google form' and the link was given to the batch representative of each phase to be shared with batchmates at the completion of the bar examination. The feedback was analysed and the report was submitted to relevant committees to take remedial actions. Response rates and mean satisfaction scores were calculated (Table 1).

Peer evaluation

Although peer evaluation of teachers is a broad concept, the Faculty of Medical Sciences (FMS) started peer review mainly to improve teaching practices of the academics. The Department of Medical Education (DME) coordinated the process through the Heads of Departments (HoDs) by allocating each colleague to a peer teacher. Three evaluation forms were used, for large groups (lecturers), small groups (tutorial/seminar) and clinical teaching. Questions included predominantly on the delivery of the content. Written space was provided to include qualitative responses. The allocation table including the names of evaluator and 3valuate was distributed at the beginning of the academic year through the relevant HoDs, requesting each 3valuate to make arrangements with the evaluator to get their session evaluated. The feedback was collected and reviewed at the departmental level by the HoD and remedial actions were discussed and agreed upon with the each 3valuate. The summary of the peer evaluation report is then to be submitted to the DME. Final report of peer evaluation for the faculty is prepared by the Head of the DME and will be submitted to the Curriculum Development Committee.

Results

Monitoring of the QA activities

Figure 1 compares the attendance for monthly meetings of the IQAC which were held face to face pre-COVID and the meetings held online post-COVID during a similar time period in two consecutive years. Generally, online meetings show a consistent higher attendance compared to face to face meetings.

When comparing the meeting attendance, a higher percentage of attendance was observed in online meetings except for January, the beginning of the new year. However, these observed differences

failed to show any statistical significance except for the attendance in the month of September (t=-2.3994, p=0.0164).





Student satisfaction survey

The majority of the students in all three batches were female students. In Phase I and III, response rates of female students (Phase I-100%, Phase III-68.63%) were higher than the response rates of male students (Phase I-92.98%, Phase III-48.98%). In contrast, the response rate of male students (51.06%) was higher in Phase II. Table 1 shows the variation in the response rates (Phase I-97.47%, Phase II46.67%, Phase III-62.91%) together with the average scores (with teaching and learning activities - Phase I-3.84, Phase II-3.50, Phase III-3.90) (with facilities provided - Phase I-3.85, Phase II-3.50, Phase III-3.50) for the student satisfaction survey among three academic phases.

Average scores calculated for overall satisfaction with teaching and learning activities were 3.84, 3.50, and 3.90 while average scores calculated for overall satisfaction with facilities provided were 3.85, 3.50, and 3.54 in Phase I, II, and III respectively.

Statistically significant higher response rate was observed in Phase I. Furthermore, statistically significant higher mean satisfaction score for teaching and learning activities was observed in Phase III.

	Phase I	Phase II	Phase III
	(N=158)	(N=150)	(N=151)
No. of responses (Response rate%)	154 (97.47)	70 (46.67)	95 (62.91)
Response of female students (Response rate%)	101 (100.00)	46 (44.66)	70 (68.63)
Response of male students (Response rate%)	53 (92.98)	24 (51.06)	24 (48.98)
Satisfaction with teaching and learning activities (1-5 scale)	3.84	3.50	3.90
Satisfaction with facilities provided (1-5 scale)	3.85	3.50	3.54

 Table 1: Summary of the Student Satisfaction Survey

Peer evaluation

Total number of responses is improving after a remarkable dip from pre-COVID (face to face) results. Completeness and clarity were 100% for all the online responses. The most common teaching method evaluated was lectures. Phase II secured the highest responses.

Highly rated areas were (a) conducting the session in a non-threatening manner, (b) time management, (c) coverage of the topic, (d) explaining skillfully and (e) emphasising objectives of the session. The least rated areas identified were (a) obtaining students' attention, (b) recall of prior learning, (c) ability to summarize/reinforce (d) encouraging questions/opinions/further readings and (e) avoiding distractions during the session.



Figure 2: Peer evaluation ratings

Discussion

When the meeting attendance was concerned, post-COVID online meetings show a consistent higher percentage of attendance compared to pre-COVID face-to-face meetings. A survey conducted in the UK of over 2,000 working adults suggests that online meetings are more efficient for smaller

gatherings of 2 to 4 people, while in-person meetings are preferred for gatherings of 10 or more (Taneja et al.,2022). Overall satisfaction with teaching and learning activities in Phase III where clinical teaching takes place was 78% (3.90 out of 5) in our study. This finding is in par with the Egyptian study which showed an overall satisfaction of 86.8% with the clinical training.

Conclusion

Monitoring the quality assurance (QA) activities, through Student satisfaction and Teacher peer evaluation, using online platforms is feasible and acceptable.

References

- Taneja, S., Mizen, P., & Bloom, N. (2022). Comparing online to in-person meetings | VOX, CEPR Policy Portal. Retrieved August 6 2022, from <u>https://voxeu.org/article/comparing-online-person-meetings</u>
- University Grants Commission. (2015). Manual for Review of Undergraduate Study Programmes of Sri Lankan Universities and Higher Education Institutions, University Grants Commission.

Research Papers/Extended Abstracts

Determinants of quality of university education from undergraduates' perspective: A case of Faculty of Agriculture in the University of Ruhuna, Sri Lanka

R. P. A. D. Thakshila, M. G. T. Lakmali, & G. C. Samaraweera*

Department of Agricultural Economics, Faculty of Agriculture, University of Ruhuna, Sri Lanka

*Corresponding author: gangani@agecon.ruh.ac.lk

Abstract

Quality assurance plays a vital role in delivering higher education. Even though university education targets to produce quality graduates, the quality of the education system is quite questionable, particularly in developing countries. Hence, this study aims to examine determinants of quality of university education system while taking a sample of 164 undergraduates of the Faculty of Agriculture in the University of Ruhuna, Sri Lanka. The primary data was collected through a Google form-based structured questionnaire. Eight factors were considered as the determinants of the quality of higher education. The data were analyzed using Wilcoxon signed rank and Pearson Chi-Square Test. All the statements given to the respondents regarding the eight determinants were proven valid and significant by the Wilcoxon Signed Rank Test (p< 0.001). Accordingly, undergraduates perceive that curriculum planning, professors/lecturers, infrastructure, extra-curricular activities, lectures, library services, university reputation, and other services significantly contribute to the quality of university education. Pearson Chi-Square Test results suggest that, a significant association exists between degree followed by undergraduates and their perception of the quality of university education (p<0.005), while gender, and year of studying show no association. The findings of this study provide valuable insights for the policymakers in university education to uplift the quality of the Sri Lankan university education system.

Keywords: Quality determinants, Undergraduates, University education,

Introduction

Providing a quality education is one of the key responsibilities of any government (Rahman & Uddin, 2009) that has significant social and economic effects on society (Hannum & Buchmann, 2005). Governments and society, therefore, have a stake in maintaining a steady stream of students in higher education (Akareem & Hossain, 2016). Even though education expects to produce quality graduates, the quality of the education system is questionable in particular in developing countries (Fomba et al., 2022). A significant number of students from various developing countries travel overseas each year to

pursue the quality higher university education. For instance, in terms of global trends, the number of international students enrolled in tertiary education worldwide rose significantly during the past few decades, from 2 million in 2000 to 5.3 million in 2017, with the US, UK, Australia, France, Germany, and Russia being the topmost destination countries (Migration Data Portal, 2020). As a result, a sizable sum of money leaves the country, resulting in lost economic opportunities. By ensuring the quality in higher education offered by local universities, local students may be kept in university and international students can be drawn in (Akareem & Hossain, 2016). Quality assurance is required to deliver higher education of a high standard. Collaborations between international and regional quality assurance organizations at the international and regional levels have been sparked due to the importance of quality assurance for higher education institutions around the world (Akareem & Hossain, 2016). Therefore, it is a due responsibility of education institutes in the Asian context in particular to see whether the higher education gives quality education as the name implies. Lack of research exploration in this regard keeps the question; does Sri Lankan higher education system give a quality education.

Researchers have found determinants of education quality in developed countries (Akareem & Hossain, 2016; Hanushek & Woessmann, 2011). However, there is a dearth of empirical research on this issue in Sri Lanka.

The originality of the study lies in the perspective on the quality of university education according to the experiences of undergraduates. Therefore, this study provides empirical evidence on quality research in Sri Lankan higher education institutions while bridging the massive research gap in the area.

Main objective

To examine the determinants of quality of university education system

Specific Objectives

- 1. To find out the perception of undergraduates on quality of university education
- 2. To explore how the main demographic characteristics influence on undergraduate perception of higher education quality
- 3. To recommend significant determinants of quality of university education to enhance the quality of university education system in Sri Lanka

Methodology

The primary data were collected using a structured questionnaire. In line with past literature, eight factors were taken into account in this study to assess the quality of higher education, including curriculum planning, professors/lecturers, infrastructure, extracurricular activities, lectures, library service, university recognition, and others (Del & Avolio, 2020). Two sections of the questionnaire were used to evaluate the undergraduates' demographic characteristics and these eight main quality factors influencing how they perceived the quality of higher education. Quality factors were presented as statements and measured by using five points Likert scale ranging from 1 to 5 (strongly disagree to strongly agree).

The undergraduates of the Faculty of Agriculture, University of Ruhuna were selected as the population of the study as study aims to explore the determinants of Quality of University Education from Undergraduates' perspective. They were from three different degree programs; namely BSc Agriculture Resource Management and Technology, BSc Agribusiness Management and BSc Green Technology, and from four different academic years. It comprises 256 first year students, 237 second year students, 187 third year students, and 230 fourth year students. An online survey was designed for the data collection and the link was sent to 164 students of the faculty who were selected by the stratified random sampling method. The sample was selected proportionate to the students in each batch. The link of the questionnaire survey was sent via their academic emails, and the link was disabled after 7 days of circulation. The data were analyzed using SPSS statistical software. Descriptive and inferential statistics were used to analyze first and second objectives respectively.

Results and Discussion

Table 1 shows that in terms of gender, the majority were female accounting of 82% while only there were 18% male respondents. The majority of responses are between the ages of 20 and 25. When degree programs were taken into consideration, respondents from the BSc Agricultural Resource Management and Technology program made up 43% of the total, those from the BSc Agribusiness Management program made up 36%, and those from the BSc Green Technology program had the least number of respondents (21%). Most undergraduates are in their first year of study while considering their current academic year (42%). Respectively 20% and 20% undergraduates are from 2nd year and 3rd years. The lowest number of respondents are from final years accounting of 18%.

The characteristics of the study sample are given in Table 1

Table 1: Characteristics of the Sample

Character	% /number		
Gender			
Female	82		
Male	18		
Age			
Majority	20-25 yrs		
Respondents			
BSc Agricultural Resource	43		
Management and Technology			
BSc Agribusiness Management	36		
BSc Green Technology	21		
Undergraduates			
First year	42		
2nd year	20		
3rd years	20		
Final year	18		

Wilcoxon Signed Rank Test was used to find the significant determinants that determine the quality of higher education. Table 2 shows the results of the Wilcoxon Signed Rank Test obtained from responses concerning each statement on the perception of the undergraduates towards the quality of higher education within the faculty of Agriculture, University of Ruhuna, Sri Lanka. Perception toward the quality of education is measured using eight parameters proposed by Del and Avolio (2020). According to the results, undergraduates perceive the curriculum planning, and service of academics (professors/lecturers) of the faculty are valid and significant (p<0.001). Students significantly consider that the infrastructure, library service, and recognition of the faculty are reputable (p<0.001). Moreover, the results show that all the statements given to the respondents regarding other services including laboratory facilities, job opportunities cafeteria services are proven as valid and significant (p<0.001) while only on campus banking facility shows insignificant.

In the curriculum planning, majority respondents (70%) agree on adequate and varied selection of elective courses among other statements under curriculum planning. The findings are in line with the literature suggesting that lectures and course structure are the most significant determinants of student satisfaction (Arnon & Reichel, 2007). Academic issues (the learning process) are a critical criterion in the measurement of student satisfaction, and that teaching, and assessment quality has a significant impact on students' perceptions of academic satisfaction (Masserini, Bini, & Pratesi, 2019). Interestingly, 74% of the respondents think that effective transmission of knowledge mainly affects for quality education delivery from professors/ lecturers rather than other parameters under professors/lecturers. Del and Avolio (2020) found that the quality of academic staff and their behaviors

have significant impacts on student satisfaction levels in the higher education industry. Under infrastructure, majority undergraduates (69%) perceive relaxing environment with green areas affects quality of higher education rather than other infrastructure parameters. Career seminars are more effective for quality education under extracurricular activities as 64% perceives it than other parameters. According to undergraduate perceptions, majority (74%) perceives that, both the mode of teaching and the effectively scheduled continuous assessments are important in lectures in similar for quality education. In the aspect of library services, majority (72%) consider that constant availability of books is mainly affects for quality education service other than remaining parameters under library service. Under other services, laboratory facilities are prompt according to majority of undergraduates (65%). In terms of university recognition, according to respondents' perceptions, all statements of university reputation, the institution should be listed in top university rankings, international agreements and MOUs, local agreements and MOUs, employment status/ positions of the pass out graduates shows similar importance in quality education service.

According to the chi-square test findings, only the degree following shows significance relationship (p<0.05) with the undergraduate perception of quality of education, while gender, and year of studying show no significance.

	Statements		Р
		Value	value
Curriculum Planning	Update in every 5 years	8.767	0.000
	Adequate structure in the organization of the courses and the content of each course	9.485	0.000
	Adequate and varied selection of elective courses	9.36	0.000
	Curriculum with more practical	8.355	0.000
	Curriculum with more theory	6.913	0.000
	Equal weights for theory and practical	6.921	0.000
	Credit content of a particular course	9.327	0.000
	ILO's of a particular course	9.544	0.000
Professors/Lecturers	Effectively transmit knowledge	10.110	0.000
	Qualification of the teacher (Communication skills of the lecturer)	10.247	0.000
	Facilitate enough practical exercises	8.614	0.000
	Have professional experience	9.734	0.000
	Adequately prepare students for the exams	9.081	0.000
	Respect the class schedule	9.773	0.000
	Don't miss classes without prior notice	9.685	0.000
	Balance the workload	8.414	0.000
	Follow the syllabus	9.997	0.000

Table 2: Perception of Undergraduates on the Quality of Higher Education: Results of the Wilcoxon
 Signed Rank Test

	Statements		Р
		Value	value
	Encourage students to conduct research	9.104	0.000
	Have time and patience to clear up doubts	9.855	0.000
Infrastructure	Classrooms with air conditioning	4.749	0.000
	Adequate faculty capacity	8.238	0.000
	Classrooms with an adequate number of students	8.999	0.000
	Strong wireless network	3.203	0.001
	Comfortable classrooms and furniture	7.205	0.000
	Operating computers (IT unit)	7.418	0.000
	Adequate water service and sanitary facilities	6.210	0.000
	Relaxing environment with green areas	9.798	0.000
Extra-Curricular	Bringing industry experts to talk about their experiences	8.988	0.000
Activities	Visits to career-related organizations	7.397	0.000
	Extra-academic workshops	7.718	0.000
	Extra academic trainings	7.598	0.000
	Sports activities	9.673	0.000
	Career seminars	9.851	0.000
Lectures	Academic counseling when needed	9.375	0.000
	Class Hours: consistent class schedules	9.993	0.000
	Effectively schedule midterm and final exams	8.446	0.000
	Effectively schedule continuous assessments	9.409	0.000
	Adequate coordination among the professors who teach	9.302	0.000
	the same course		
	Have the option to complete courses online	7.574	0.000
	Availability of academic counseling	9.763	0.000
	Mode of teaching	10.108	0.000
	Way of presenting	10.238	0.000
Library Service	Constant availability of books	9.662	0.000
	Provide an adequate service to the students	9.946	0.000
	Have enough room to work in groups	9.061	0.000
	Have enough computers with internet access	6.208	0.000
	Air conditioning service	5.780	0.000
	Comfortable furniture	8.151	0.000
	Respect the rule of silence	9.866	0.000
	Extend book loan periods	9.696	0.000
Other Services	Laboratories: availability of laboratories when required;	8.605	0.000
	teach the courses in the laboratory when required;		
	Job opportunities: internships; guidance to write your	9.042	0.000
	resume; guidance to succeed in a job interview		
	Cafeteria: Avoid long queues; have enough space to have	6.469	0.000
	lunch and rest		0.005
	Photocopies: Avoid long queues	4.536	0.000
	On-campus banks	-1.084	0.278
	Transportation	3.339	0.001
	Parking space	7.925	0.000

	Statements	Test	Р
		Value	value
University	University reputation. The institution should be listed in	9.757	0.000
Recognition	top university rankings		
	International agreements and MOUs	9.757	0.000
	Local agreements and MOUs	9.603	0.000
	Employment status/ Positions of the pass-out graduates	9.209	0.000

*5-point Likert; 1- Strongly disagree; 2-Disagree; 3-Neutral; 4-Agree; 5- Strongly agree

*Significance level- 0.05

Conclusion

The findings of the Wilcoxon sign rank test suggest that out of eight parameters used in the study, curriculum planning, professors, extracurricular activities, infrastructure, library services, lectures, university recognition, and other services have significantly contributed to quality of higher education, while on campus banking of the other services have no any significant contribution on this. Moreover, out of the demographic and other factors, only the degree following shows a significance relationship with the undergraduate perception of quality of education, while gender, and year of studying show no any significance. The findings of this study will be of great significance for policymakers in higher education to uplift the quality of the Sri Lankan higher education system to produce quality graduates. The present study addressed the undergraduate perception regarding factors affecting the quality of education of the Faculty of Agriculture, the University of Ruhuna only. Therefore, it will be beneficial to consider graduate perceptions regarding other higher education institutions in Sri Lanka as a whole to develop a feasible quality assurance system in higher education. Since the quality assurance may vary according to the course contents, the type of the university (private, public), etc. the consideration of these factors as well accounts the generalizability of the present findings. In addition, here the present study considered students' perception only. The perception of other stakeholders such as academics, nonacademics, etc., may contribute to decide the quality. Therefore, taking the perception of them as well can decide the overall system. Due to the limitation of time, present study considered only students' perception. Though these limitations limit the generalizability of the results, present study gives a great avenue for further researchers to continue researches in this area.

References

- Akareem, H. S., & Hossain, S.S. (2016). Determinants of education quality: what makes students' perception different? *Open review of educational research*, *3*(1), 52-67.
- Arnon, S., & Reichel, N. (2007). Who is the ideal teacher? Am I? Similarity and difference in perception of students of education regarding the qualities of a good teacher and of their own qualities as teachers. *Teachers and Teaching: theory and practice*, 13(5), 441-464.

- Del Carmen Arrieta, M., & Avolio, B. (2020). Factors of higher education quality service: the case of a Peruvian university. *Quality Assurance in Education*, 28 (4), 219-238.
- Fomba, B. K., Talla, D. F., & Ningaye, P. (2022). Institutional Quality and Education Quality in Developing Countries: Effects and Transmission Channels. *Journal of the Knowledge Economy*. https://doi.org/10.1007/s13132-021-00869-9
- Glewwe, P., & Kremer, M. (2006). Schools, teachers, and education outcomes in developing countries. *Handbook of the Economics of Education*, *2*, 945-1017.
- Hannum, E., & Buchmann, C. (2005). Global educational expansion and socio-economic development: An assessment of findings from the social sciences. *World Development*, 33(3), 333–354.
- Hanushek, E. A., & Woessmann, L. (2011). The economics of international differences in educational achievement. *Handbook of the Economics of Education*, *3*, 89-200.
- Koslowski, F. A. (2006). Quality and assessment in context: A brief review. *Quality assurance in education*.
- Lizzio, A., Wilson, K., & Simons, R. (2002). University students' perceptions of the learning environment and academic outcomes: implications for theory and practice. *Studies in Higher education*, 27(1), 27-52.
- Masserini, L., Bini, M., & Pratesi, M. (2019). Do quality of services and institutional image impact students' satisfaction and loyalty in higher education? *Social Indicators Research*, *146*(1), 91.
- Migration Data Portal. (2020). *International Students*. Retrieved July 12, 2021, from https://www.migrationdataportal.org/themes/international-students#key-trends
- Walker, P. (2008). What do students think they (should) learn at college? Student perceptions of essential learning outcomes. *Journal of the Scholarship of Teaching and Learning*, 45-60.

Research Papers/Extended Abstracts

Assessing the quality assurance awareness of nonacademic staff: A case study of the Faculty of Agriculture in the University of Ruhuna, Sri Lanka

R. P. A. D. Thakshila, M. G. T. Lakmali, & G. C. Samaraweera*

Department of Agricultural Economics, Faculty of Agriculture, University of Ruhuna, Sri Lanka

*Corresponding author: gangani@agecon.ruh.ac.lk

Abstract

Nonacademic staff including administrative staff contribute immensely to conducting the university operations without disturbances. Despite being key stakeholders within the university system, their awareness of the quality assurance of university education is not adequately explored in Sri Lanka in particular. Hence, the present study intends to bridge this research gap by assessing the quality assurance awareness of nonacademic staff within the university education system and specifically by identifying the awareness of nonacademics on quality assurance. The nonacademic staff of the Faculty of Agriculture, University of Ruhuna was selected as the target population. The population was equal to the sample and 35 respondents were individually interviewed conveniently using a semi-structured questionnaire for primary data collection. Descriptive and inferential statistical methods including Pearson Chi-Square Analysis were used for the data analysis. The sample consisted of 66% of males and 34% females. 69% and 31% of respondents are engaged in operational level and managerial level occupations respectively. The majority (57%) are having more than 20 years of working experience. Results revealed that 45% of the respondents are having moderate awareness of quality assurance while 34% are having slight awareness. Interestingly, none of them is having adequate awareness of quality assurance in university education. According to the results of the Pearson Chi-Square test, a marginally significant association exists between gender and the quality assurance awareness of nonacademic staff (p=0.056). The findings concluded that the majority of the nonacademic staff are having moderate awareness of quality assurance. The majority of respondents (64%) recommended conducting workshops and training programs to educate nonacademic staff in order to enhance their awareness of the quality assurance of university education. The findings of this study will be of great significance for university administrators to further improve the quality of university education with the enhanced contribution of nonacademic staff.

Keywords: Awareness, Nonacademic, Quality assurance,

Introduction

Any society's progress starts with education. Education improves good human behavior and promotes civility, economic prosperity, and a reduction in conflict. Individuals' growing intellectual capacities contribute to the general growth of any economy. Any society's foundation is higher education, and a nation's human resource quality is determined by how well its higher education institutions perform in that role. Institutional effectiveness is an applied discipline with practical implications for the betterment of the national education system, not only a developing area of theoretical academic research. There are two basic ways to approach effectiveness in any organization: from the standpoint of the institution's internal operations (Kaur & Bhalla, 2018). Stakeholders within the institution are involved in the institution's internal operations. From the perspective of university institutions, academic staff, and nonacademic staff including administrative staff are under this stakeholder's operations within the institute.

The university's main missions of teaching and learning, research, and community participation are intended to be improved by internal quality assurance. However, nothing is currently understood about whether these areas have seen improvements as a result of internal quality assurance (Tavares et al., 2017). The majority of earlier studies have looked into the effects of quality assurance generally from the perspective of academics and students (Stensaker et al., 2011), not only through internal quality control procedures but also externally (Tavares et al., 2017). However, this has not been adequately addressed in the Sri Lankan context, where the awareness of this concept is questionable. Many types of research have undergone in the educational sector regarding the exploration of the quality assurance perception of academics and undergraduates on the quality of the education and the service provided within the university system (Akareem & Hossain, 2016; Williams et.al., 2013; Tavares et al., 2017; Kaur & Bhalla, 2018). The situation in the Sri Lankan context in this regard is questionable. Therefore, this research study was done to address the research gap of assessing the quality assurance awareness of nonacademic staff including the administrative staff within the university education system with the main objective of exploring and enhancing the awareness of quality assurance among the nonacademic staff attached to the University of Ruhuna, Sri Lanka. To identify the awareness of administrative staff on quality assurance, to find the relationship between the quality assurance awareness of the nonacademic staff and their profile, and to give suggestions to improve the quality assurance within the institute were the specific objectives.

Methodology

The study was carried out in the Faculty of Agriculture, the University of Ruhuna and as the population, the nonacademic staff of the faculty including administrative staff, library staff, and

departmental nonacademic staff were considered. The whole population was selected and 35 respondents were individually interviewed as per convenience through a semi-structured questionnaire for primary data collection. Awareness was measured by using the Likert scale. Primary data were analyzed by using descriptive and inferential statistical methods such as the chi-square test.

Results

When considering the demographic profile of the respondents, the nonacademic staff of the faculty of agriculture, the University of Ruhuna is comprised of the administrative staff of the dean's office, library, and the seven departments namely, the Department of Agricultural Economics, Agricultural Biology, Soil Science, Food Science and Technology, Crop Science, Animal Science, Engineering and the Computer Unit. In terms of gender, 66% are male and 34% are female. According to the professional level, 69% of respondents are engaged in the operational level in terms of occupation while 31% are engaged in the managerial level. Figure 1 describes the distribution the designations of the nonacademic administrative staff dispersed in the faculty of Agriculture, University of Ruhuna.



Figure 1: Designation of the nonacademic staff

Table 1: Results of the Pearson Chi-Square Test

Demographic Variable	χ^2 Value	Degree of Freedom	P Value
Gender	5.411	3	0.056
Occupational Level	2.906	3	0.406
Working Experience (Years)	7.986	12	0.788

Discussion

According to Figure 1, designation of the nonacademic Staff, the majority of the staff members belong to GCE advanced level category (45.71%), while 25.71% are educated up to GCE Ordinary level. Diploma or degree holders are in similar percentages (14.29). In terms of working experience, the majority of 57.14% are of more than 20 years of working experience, 20% are of less than 5 years of working experience and 11.43% are of 5-10 years of working experience. The least percentage of 5.71% shows in diploma holders and degree holders. According to the results on the awareness of quality assurance, 45% of the respondents are having moderate awareness of quality assurance while 34% are not aware at all. No one is having extreme awareness of quality assurance.

When testing the association between the demographic variables and quality assurance awareness of the administrative staff, only gender has a marginally significant association with quality assurance awareness according to the chi-square test results (Dawar & Pilutla, 2000) with the awareness of quality assurance (Table 1).

The majority of respondents (64%) suggest organizing awareness programs, workshops, and training programs for all employees within the administrative staff regarding quality assurance for improving quality assurance awareness. Educating the staff (10%), conducting formal programs and supervising them (10%), making arrangements to provide knowledge/understanding by covering up every work sector in the institution (21%), annually organizing quality assurance sessions with participation of sections of the institution (5%) are the main recommendations presented by the administrative staff of the faculty.

Conclusion

The findings of this study of assessing the quality assurance awareness of nonacademic staff. A Case study of the Faculty of Agriculture, University of Ruhuna conclude that majority of the nonacademic staff are having moderate awareness of quality assurance. Only gender significantly shapes the awareness of quality assurance. Male are aware more of quality assurance than their female counterparts while the educational level, years of working experience, and level of occupation are non-significant. In terms of respondents' suggestions, it is recommended that quality assurance can be enhanced mainly by conducting workshops, and training programs to educate the employees of an organization.

References

- Akareem, H. S., & Hossain, S. S. (2016). Determinants of education quality: what makes students' perception different? *Open review of educational research*, *3*(1), 52-67.
- Kaur, H., & Bhalla, G. S. (2018). Determinants of effectiveness in public higher education-students' viewpoint. *International Journal of Educational Management*.
- Stensaker, B., Langfeldt, L., Harvey, L., Huisman, J., & Westerheijden, D. (2011). An in-depth study on the impact of external quality assurance. Assessment & Evaluation in Higher Education, 36(4), 465-478.
- Tavares, O., Sin, C., Videira, P., & Amaral, A. (2017). Academics' perceptions of the impact of internal quality assurance on teaching and learning. Assessment & Evaluation in Higher Education, 42(8), 1293-1305.
- Williams, R., de Rassenfosse, G., Jensen, P., & Marginson, S. (2013). The determinants of quality national higher education systems. *Journal of Higher Education Policy and Management*, 35(6), 599-611.

Research Papers/Extended Abstracts

Upper extremity impairments in higher education: Types of assessment accommodations provided and student perspectives

P. V. S. S. Ranthilini

Department of English and Linguistics, University of Ruhuna, Sri Lanka

ranthilinivithanage@gmail.com

Abstract

Assessment accommodations in tertiary education levels the proverbial playing field for students with disabilities by removing disabling barriers related to assessments that may affect their performance. It is vital that effective assessment accommodations are provided by higher educational institutes in order to assess all students justly, equitably, and fairly. In this context, this research explores the assessment accommodations provided for students with upper extremity impairments in the University of Kelaniya. The research objectives are to identify the types of assessment accommodations provided by the institution for students with upper extremity impairments and to explore their reception by students with disabilities. To achieve these objectives, a qualitative research methodology was adopted. The documents related to assessment accommodations guidelines and data gathered through interviews were treated as primary data. The documents were subjected to manifest content analysis. Semi-structured interviews with two students with disabilities were conducted. Snowball sampling was used to identify research participants and their anonymity is ensured. A thematic analysis was conducted to analyze the interview data and the theoretical underpinning of this research relates to the socio-political understanding of disability. It was found that three types of assessment accommodations are provided by the institution: assessment accommodations related to the medium of presentation, medium of response, and the physical environment. Displaying varying opinions, students responded positively to accommodations related to the medium of presentation and response and held somewhat negative attitudes towards accommodations related to the physical setting due to the exclusion they may lead to. It is recommended that the institution revises assessment accommodations to improve the effectiveness of accommodations provided and involves stakeholders in the guideline formation/revision process.

Keywords: Assessment accommodations, Higher education, Students with disabilities, Upper extremity impairments,

Introduction

Assessment accommodations (AAs) allow Students with Disabilities (SWDs) to demonstrate their knowledge or ability fully without the validity of assessments being affected and further level the "playing field by providing SWDs the opportunity to take state assessments without their disability or disabilities hindering their ability to succeed on the tests" (Cox et al., 2006). Many higher educational institutions mandate the provision of AAs. The University of Kelaniya (UoK), in particular, has guidelines pertaining to reasonable accommodations at examinations. It is vital that adequate research is conducted on AAs in higher education as they directly relate to how assessments can be conducted in a manner that evaluates all students justly and equitably (Abayasekara, 2020). Such assessments provide "a fair chance for achievement and an accurate measurement of achievement", without which "students could feel disregarded, demotivated and even incompetent" (Abayasekara as cited in Abayasekara, 2021). However, despite the aforementioned importance, it seems that extensive research has not been done on AAs in the local context. Among the research done, Abayasekera (2021) discusses universal assessments with reference to hearing impairments and Yatigammana et al. (2021) note the types of accommodations provided in class and academics' willingness to provide accommodations in four universities in Sri Lanka, excluding UoK. It seems that there is a significant lacuna in the literature regarding the AAs provided for students with upper extremity impairments in higher education and the present research addresses this gap by exploring the AAs provided for students with upper extremity impairments in UoK.

Methodology

The objectives of this research are to

- I. Identify the types of AAs provided by UoK for students with upper extremity impairments.
- II. To explore the reception of AAs by students with upper extremity impairments.

The research adopted a qualitative methodology. Documents related to AAs and the data collected through interviews were treated as primary data. Reasonable Accommodations at Examinations for Students (RAES) and Reasonable Accommodations Guidelines (RAG) are the two main documents analyzed. Semi-structured interviews with two students with disabilities who are affiliated with the UoK were conducted. Snowball sampling was used to identify research participants. Both participants are persons with upper extremity impairments and one has had a temporary impairment that lasted for more than 5 months. The participants were provided with relevant information via email and/or phone and their consent was acquired through a consent form. Participants' anonymity is ensured.

To achieve the first objective, which is to identify the types of AAs provided, the said documents were analyzed using the method of manifest content analysis. In terms of the second objective, thematic analysis was conducted to analyze the interview data. The theoretical underpinning of this research draws from the socio-political models of disability, maintaining that disability arises through the students' interaction with society.

Limitations

It should be noted that the interviewee sample can be a limitation. However, situated in the nonpositivist social-constructivist paradigm, the researcher believes that reality is constructed by individuals, and the experiences of individuals provide valuable insights for research.

Results

Types of assessment accommodations

In terms of the first objective, the analysis of the documents shows that three types of assessment accommodations related to upper extremity impairments are provided by UoK: accommodations related to the medium of presentation, accommodations related to the medium of response, and accommodations related to the physical environment.

Accommodations related to the medium of presentation

UoK provides AAs that enable the medium in which the examination is presented to be modified and altered. Specific guidelines mentioned in the RAG include AAs that relate to students with upper extremity impairments such as the "provision of a reader to read aloud the questions" and the provision of the questions "via a computer or mechanical aid" (University of Kelaniya, n.d.). The former accommodates students who encounter difficulties when physically engaging with the exam paper (turning the pages, etc.) by assigning a reader to read out the questions on the paper, thereby minimizing the need for the student to physically handle the paper during the examination. The latter, too, serves the same purpose by presenting the exam paper on a screen that can be easily navigated by a mouse or a similar device.

Accommodations related to the medium of response

UoK provides several AAs that concern the medium of response. For example, Specific guidelines and the REAS propose "recording of the student's verbal responses by a scribe," the use of assistive or adapted writing equipment, and recording answers on a voice- recorder, a word processor, or other computer-assisted technologies as AAs that concern the medium of response. They are further complemented by alterations made to the time allocated for the examination. For example, students who are provided with technical devices and scribes to record their answers are given 15 extra minutes per hour (ibid).

Accommodations related to the physical environment

UoK provides reasonable accommodations that allow the modification of the environment in which the student sits the exam. The *Specific guidelines* indicate that alternative examination hall arrangements can be made to ensure that neither students with disabilities nor students without disabilities are at a disadvantage. For example, alternative hall arrangements are to be considered when scribes, mechanical aids, etc are used so that the students without disabilities are not inconvenienced. The same applies to the allocation of extra time and alternate hall arrangements are made to ensure that students leaving the examination premises would not be distracting to students who are given extra time. Further, the REAS states that necessary arrangements to place the wheelchairs, writing desks, etc in the examination premises would be made (University of Kelaniya, 2017; University of Kelaniya, n.d.)

Reception of AAs by SWDs.

In terms of the second objective, it seems that the reception of the AAs identified varies. The thematic analysis of the interview data led to two contrasting themes: while SWDs' reception of accommodations related to the medium of presentation and response was positive, the same cannot be said about the accommodations related to the physical environment. The reception of the three types of AAs by SWDs is explored in detail below.

The reception of AAs related to the medium of presentation

Accommodations related to the medium of presentation are well received by SWDs, who suggest that they respond to disabling barriers faced by SWDs in examinations. As stated by participant 2, she finds it difficult to "fiddle with the exam paper" and handling the paper constitutes a somewhat difficult task, provided that environmental conditions (such as gusts of wind) come into play. Such disabling barriers are minimized through the provision of AAs related to the medium of presentation.

The reception of AAs related to the medium of response

AAs related to the medium of response were positively received by SWDs, thereby validating their effectiveness. For example, participant 1 has been provided with additional time at examinations and she holds rather positive views of this particular accommodation. According to her, this provision of additional time levelled the playing field for all students. However, it seems that the AAs thus provided by the institution are not transferred into continuous assessments. As highlighted by participant 1, additional time is not provided for "assignments."
The reception of AAs related to the physical environment

While the participants agreed that AAs related to the physical environment are useful, they simultaneously expressed the view that they may undermine the inclusion of SWDs. For instance, participant 2 expressed the view that alternative hall arrangements may result in the exclusion of the SWD. Though she has not been a receiver of this accommodation, she stated that "sitting the exam in some other place makes you miss out on a lot. After the exam students usually talk about the paper and discuss the answers and if you have to write the paper in a different location, you wouldn't be able to take part in after-the-paper discussions." Thus, while she believes that alternative hall arrangements are important, she notes that segregated hall arrangements may lead to exclusion from societal activities.

Discussion

The three types of AAs found resemble the types of testing accommodations identified by Thurlow *et al*: "presentation format, response format, setting of test and timing of test" (Thurlow et al., 1993). Even though the types of accommodations identified by them do not specifically relate to upper extremity impairments, they reinforce and validate the findings of the current research. For example, "presentation format" and related AAs identified by Thurlow et al. (1993) involve "the materials used to administer the assessment being changed to a format most appropriate for the student" (Case, Zucker & Jeffries, 2005) and accommodations related to the medium of presentation provided by UoK essentially alter the presentation format of the paper as an AA.

Accommodations related to the medium of response can be understood in relation to the second type of testing accommodations identified by Thurlow et al. response accommodations that involve providing the opportunity to "respond to assessment items in the way in which he or she is best able (to)" (Case, Zucker & Jeffries, 2005). The findings show that most of the AAs provided by the institution relates to the medium of response. The provision of these accommodations would rectify the disabling circumstances that may arise had the student sat the exam with pen-and-paper as the only mode of responding. Thus, UoK, aligning with the socio-political models of disability, situates disability not in the body but in the interaction with unaccommodating environments and attempts to eliminate disabling environmental barriers through the provision of AAs as evidenced in the documents studied (University of Kelaniya, 2015)

The findings further show that the response accommodations provided by UoK are accompanied by time-related alterations that resemble another type of testing accommodations identified by Thurlow et al. time accommodations. While the time accommodations provided by UoK align with the shared goal of AAs which is to level the playing field for all students, it seems that there are discrepancies in the

provision of time accommodations at examinations and assignments. As stated by participant 1, she has not received extra time for assignments (continuous assessment) and this may be due to the fact that the AAs provided by UoK only apply to examinations technically. The documents pertaining to AAs are titled as Reasonable Accommodations at Examinations for Students and Reasonable Accommodations and neither specifically concerns continuous assessments. Therefore, it seems that the institution is not obliged to provide accommodations related to continuous assessments, even though the term 'assignments' is used in certain instances. However, this gives rise to questions regarding the extent to which SWDs are truly accommodated. It can be conceived that, as argued by socio-political models of disability, negative attitudes towards people with disabilities may have caused this non-decision made (McCalla-Chen, 2000). It is clear that, to level the playing field for all students, AAs should be extended to encompass continuous assessments as well.

The third type of AAs identified in this research is accommodations aimed at modifying the physical environment and they can be understood in terms of setting accommodations identified by Thurlow et al. (1993). Setting accommodations involve "changes (being) made to the environment or location of the administration (Case, et al., 2005). Contrasting opinions are held by participants regarding the provision of alternate examination halls as an AA. Participant 2 indicated that facing the exam at an alternative location leads to the exclusion from certain activities. Facing the examination at an alternate location resembles segregated education to a certain extent. Research shows that "while probably not intended, segregation practices effectively limit or even prevent children with physical disabilities from engaging in a wider social setting (Finnvold, 2018)," which seems to be the case related to UoK's provision of alternative hall arrangements. However, alternative hall arrangements are a vital AA and it would be impractical to advocate its elimination. Rather, one way of navigating this context is to provide alternate settings within or close to the main examination premises itself, when and if possible, as suggested by the participants.

In addition, the present research highlights the importance of including stakeholders, mainly SWDs, in policy/ guidelines formulation/ revision. Their insights and lived experiences provide invaluable input and the involvement of SWDs will result in enriched and effective AAs.

Conclusion

Responding to the first objective of this research, it can be stated that three types of AAs are provided by UoK and they reinforce the existing research findings on AAs. In terms of the second objective, SWDs hold varying opinions regarding the AAs provided. While the reception of AAs related to the medium of presentation and response is positive, SWDs are skeptical of AAs regarding the physical environment. Based on the findings, it is recommended that the institution revises relevant documents to increase the effectiveness of AAs. Further, the research suggests that UoK can benefit from involving stakeholders in the guideline formation/ revision process.

References

- Abayasekara, S. A. (2020). Inclusive assessment: Designing assessment according to student needs and abilities. *16th annual conference, Sri Lanka Association for Improving Higher Education Effectiveness (SLAIHEE)*, 6–10. <u>https://www.researchgate.net/publication/343229923</u>
 _Assessment_and_feedback-driven_learning_platform_to_improve_the_attendance_of_undergraduates_in_tutorial_labsessions.
- Abayasekara, S. A. (2021). Universal assessment: Reflections on equitable evaluations in a Sri Lankan higher education classroom. University of Colombo Review (New Series 111), 2(1), 102-118. <u>https://ucr.sljol.info/articles/10.4038/ucr.v2i1.41/galley/40/download/</u>
- Case, B.J., Zucker, S., & Jeffries, J.L. (2005). *A primer on assessing the visually impaired*. Harcourt Assessment Inc. <u>http://images.pearsonclinical.com/images/PDF/assessmentReports/Visually</u> <u>Impaired.pdf</u>
- Cox, M. L., Herner, J. G., Demczyk, M. J., & Nieberding, J. J. (2006). Provision of Testing Accommodations for Students With Disabilities on Statewide Assessments: Statistical Links With Participation and Discipline Rates. *Remedial and Special Education*, 27(6), 346– 353. https://doi.org/10.1177/0741932506027006040
- Finnvold, J. E. (2018). School segregation and social participation: the case of Norwegian children with physical disabilities. *European Journal of Special Needs Education*, 33(2), 187-204. https://www.tandfonline.com/doi/abs/10.1080/08856257.2018.1424781
- McCalla-Chen, D. (2000). Towards an understanding of the concept of non-decision making and its manifestation in the school sector. *Educational Management & Administration*, 28(1), 33-46. https://journals.sagepub.com/doi/abs/10.1177/0263211x000281004
- Thurlow, M. L., Ysseldyke, J. E., & Silverstein, B. (1993). Testing accommodations for students with disabilities: A review of the literature (Synthesis Report 4). University of Minnesota, National Center on Educational Outcomes. <u>https://eric.ed.gov/?id=ED358656</u>
- University of Kelaniya. (2015). Reasonable Accommodations at Examinations for Students.
- University of Kelaniya. (n.d). Reasonable Accommodations Guidelines.
- Yatigammana, S., Dorabawila, S., & Abhayaratne, A. (2021). Developing inclusive education for students with disabilities in Sri Lankan universities (IncEdu): Needs assessment survey

report. University of Peradeniya. http://www.esn.ac.lk/incedu/docs/Survey%20Report%20

%20Developing%20Inclusive%20 Education.pdf

Research Papers/Extended Abstracts

Satisfaction on the opportunities and employability skills received during the undergraduate period: A study of graduates of Allied Health Sciences Faculty in the University of Ruhuna, Sri Lanka

N. Rathnayake^{1*}, H. Peiris², S. Hettihewa³, E. Weeratunga¹, & I. Kotapola¹

¹Department of Nursing, ²Department of Medical Laboratory Science, ³Department of Pharmacy Faculty of Allied Health Sciences, University of Ruhuna, Sri Lanka *Corresponding author: nirmala.priyanthi@gmail.com

Abstract

Health science graduate programmes have recently been established to fill gaps in the health care system by producing health care professionals. These graduates are produced providing wide range of opportunities and inculcating the employability skills for them to find an appropriate job, engage in it effectively and proceed in the future careers effectively. To evaluate the satisfaction of Allied Health Science (AHS) graduates on the opportunities and employability skills they received during the undergraduate period. A descriptive cross-sectional survey was carried out after obtaining ethical clearance from the Ethics Review Committee of the Faculty of Allied Health Sciences. The satisfaction on opportunities and employability skills received during the undergraduate period were obtained using a pretested questionnaire set on a Google form with five-point Likert scale to answer. It was distributed among all the graduates of the 1st to 4th batches of each degree programme. The data were analyzed with descriptive statistics and Pearson's chi-square test using SPSS.25 version. Only 76 graduates responded. Of respondents, 12 (15.8%) were BSc Medical Laboratory Science (MLS) graduates, 48 (63.2%) were BSc Nursing graduates and 16 (21.1%) were B Pharmacy graduates. The majority (>70%) of the graduates highly satisfied about the knowledge and clinical/laboratory training they received. Majority of the graduates highly satisfied with all the skills while >90% satisfaction with the skills such as communication (90.8%), time management (90.8%), research (90.8%), teamwork (93.4%) and ethical awareness and responsibility (94.7%). Comparatively lower satisfaction (<60%) was observed for motivational, time management, and anger management skills. Furthermore, satisfaction on the skills; ethical awareness (p=0.005) (nursing; 100%, MLS; 75% and pharmacy 93.8%) and time management (p=0.005) (nursing; 93.8%, MLS; 75% and pharmacy 93.8%) were significantly associated with the degree programme demonstrating different satisfaction among the degree programmes. Majority of the AHS graduates of the University of Ruhuna highly satisfied with the opportunities and employability skills they received during their undergraduate period. The study findings will help to enhance the outcome of graduates of degree programmes and further investigation with serial graduates or alumni satisfaction surveys are recommended.

Keywords: Allied Health Sciences graduates, Employability skills, Opportunities, University of Ruhuna, Satisfaction

Introduction

The Nursing and other allied health professionals, specially, pharmacist and medical laboratory scientists' (MLS) education are one of the most radically changing educational fields in nationally and internationally during the recent past. In Sri Lanka, undergraduate degrees for these nursing and allied health professions have commenced in Sri Lankan conventional universities in the year 2005 by the Ministry of Higher Education with the aim of producing intellectually and professionally competent nursing and allied health graduates to meet the emerging health needs of the national and international community with special emphasis on the social, economic and cultural needs of Sri Lanka (Jayasekara & McCutcheon, 2006).

University of Ruhuna (UoR) initiated the Allied Health Sciences (AHS) Degree programmes by becoming the 3rd conventional University in Sri Lanka, which started such degree programmes. The curricula of the degree programmes have been designed for four years, complying with Sri Lanka Qualification Framework (SLQF) guidelines with essential components including individual research projects and appropriate training programmes (hospital, clinical, community, and industrial) (University of Ruhuna, 2022).

These degree programmes make every effort to improve student learning and satisfaction within the clinical/laboratory setting. They are trained to deliver high-quality patient care. The expected outcomes of these trained nurses and allied health professionals are basically to provide patient-centered care, work in interdisciplinary teams, employ evidence-based practice, apply quality improvement and utilize informatics (Jayasekara & McCutcheon, 2006). Therefore, many opportunities, including receiving sound updated knowledge, training, and blended skills are provided to the students during the undergraduate period.

Up to now eight batches of BSc Hons Nursing and MLS and six batches of B Pharm Hons passed out successfully completing all the necessary theory and clinical components in these degree courses from UoR.

The tracer study reports of UoR stated that the employability of the AHS graduates of UoR is approximately 100% (University of Ruhuna, 2020; University of Ruhuna, 2021). Further, these graduates are in many key positions in the healthcare industry and research arena in Sri Lanka and internationally with a high rate of employability.

In any kind of profession, employability determines the probability of obtaining a new or upgraded job and the incorporation of job matching. When employees do not perform well in the workplace, the employer gets frustrated and pays a burden on the staff. To solve these types of issues, higher education institutions should pay focus on training, which can build employability skills in students' personalities and facilitate bright careers (Bala, 2021). It is a proven fact that employers give preference to those candidates who are a complete package of employability skills and avoid those candidates who lack skills in the recruitment process. Employability skills are identified as one of the valuable policy tools to upgrade mobility and earnings. The organization's employees are required to possess the knowledge and skills for increasing the organization's performance, competitiveness, and advancement (Sisodia & Agarwal, 2017; Messum et al., 2015).

When concerning healthcare even, the employees should possess sound knowledge and training that matched with all the requirements and certain employability skills apart from the knowledge and clinical competency they gained during the training period. Therefore, when training healthcare undergraduates, the educational institutions should also try to future healthcare professional enriched with employability skills while fulfilling education-related requirements such as knowledge and training (Crebert et al., 2004). Studies have identified some of the core skills such as communication skills, information communication, and technology skills, work psychology skills, teamwork skills, interpersonal skills, critical thinking and problem-solving skills, time management skills, self-management skills, planning and organizing skills and conceptual and analytical skills which are the backbone of a successful health care organization (Sisodia & Agarwal, 2017).

Since our graduates have nearly 100% employability and are working in a variety of healthcare institutions (national and international) and a few in education and research institutions, it is imperative to identify how satisfied they are with their already obtained opportunities and skills. Further, no study has been conducted to evaluate the graduates' satisfaction on the opportunities and skills they received during the undergraduate period in the Faculty or University level except the tracer studies. Therefore, the current study evaluated the satisfaction of AHS graduates on the opportunities and employability skills they received during the undergraduate period with the hypothesis that AHS graduates are satisfied with the opportunities and required employability skills received equally in all three-degree programme during the undergraduate period.

Methodology

A descriptive cross-sectional survey was carried out after obtaining the ethical clearance from the Ethics Review Committee of the Faculty of Allied Health Sciences, UoR, Galle, Sri Lanka. A Google form was used to collect the relevant information and e-mailed to the Allied Health Sciences graduates

(from 1st to 4th batches of each degree programme) who passed out from the UoR using the e-mails available at the three Departments of the Faculty. Only 76 graduates responded to the form.

In the Google form, information sheet and consent form were included in the first part of the form while the relevant questions were in the second part. Basic information such as registered academic year, gender, degree programme, employment status, and the satisfaction on received opportunities and necessary employability skills during the undergraduate period (such as communication skills, information communication, technology skills, work psychology skills, teamwork skills, interpersonal skills, critical thinking and problem-solving skills, time management skills, self-management skills, planning and organizing skills and conceptual and analytical skills) were asked. The satisfaction was asked in a five-point Likert scale of "highly satisfied, satisfied, neutral, dissatisfied and highly dissatisfied". This questionnaire was developed guiding the existing literature while the content of the questionnaire was evaluated by three senior academics in the Faculty of Allied Health Sciences. Finalized questionnaire was pre-tested with 06 graduates of the University of Sri Jayewardenepura who followed the AHS Degree Programmes.

The data were analyzed using the descriptive statistics including frequencies and percentages and Pearson's Chi-square test was used to identify whether AHS graduates of all three-degree programmes have equally satisfied about the opportunities and employability skills they acquired. During the analysis, since there were only a few responses for some components of the Likert scale, both highly satisfied and satisfied components were combined together as "satisfied" and both dissatisfied and highly dissatisfied components were combined together as "dissatisfied". Statistical significance was set at p < 0.05. SPSS 20.0 version was used for data analysis.

Results

Among the 76 graduates responded to the questionnaire, 12 (15.8%) were BSc Hons MLS graduates, 48 (63.2%) were BSc Hons Nursing graduates and 16 (21.1%) were B Pharm Hons graduates. Only three (03) graduates were not employed at the moment of study mentioning that they are not employed due to family commitments.

The satisfaction of graduates on the opportunities mainly on the knowledge they received, clinical/laboratory training, internship/apprentice training, and opportunity to attend for additional professional development courses and explore higher education were asked (Table 1). The majority of the graduates satisfied about the knowledge and clinical/laboratory training while showing a comparatively less satisfaction for the opportunities to explore higher education opportunities and opportunities to follow professional development courses during the undergraduate period.

The satisfaction of the graduates on the employability skills they received from the undergraduate period is also shown in Table 1. The majority of the graduates satisfied with all the skills pointed out in the questionnaire while giving > 90% of satisfaction for the skills such as communication skills (90.8%), time management (90.8%), research skills (90.8%), teamwork (93.4%) and ethical awareness and responsibility (94.7%). Comparatively lower satisfaction was seen for motivation, time management, and anger management skills.

Table 1: Satisfaction of AHS Graduates on the Opportunities and Employability Skills they Received During the Undergraduate Period (n=76)

	Satisfied	No idea	Dissatisfied			
Opportunity/Skill	Frequency	Frequency	Frequency			
	(%)	(%)	(%)			
Opportunities	Opportunities					
Updated sound knowledge	64 (84.2)	7 (9.2)	5 (6.6)			
Clinical/laboratory training	58 (76.3)	8 (10.5)	10 (13.5)			
Explore future higher education opportunities	47 (61.8)	9 (11.8)	20 (26.3)			
Follow additional professional development courses	46 (60.5)	12 (15.8)	18 (23.7)			
Employability skills						
Presentation skills/public speaking skills	65 (85.5)	3 (3.9)	8 (10.5)			
Academic writing skills	64 (84.2)	3 (3.9)	9 (11.8)			
Communication skills	69 (90.8)	2 (2.6)	5 (6.6)			
Leadership skills	63 (82.9)	4 (5.3)	9 (11.8)			
Emotional intelligence skills	57 (75.0)	8 (10.5)	11 (14.5)			
Interpersonal relationship skills	63 (82.9)	5 (6.6)	8 (10.5)			
Time management skills	69 (90.8)	4 (5.3)	3 (3.9)			
Stress management skills	56 (73.7)	5 (6.6)	15 (19.7)			
Decision making skills	66 (86.8)	7 (9.2)	3 (3.9)			
Research skills	69 (90.8)	0	7 (9.2)			
Data handling and management skills	66 (86.8)	5 (6.6)	5 (6.6)			
Information and computer literacy skills	67 (88.2)	6 (7.9)	3 (3.9)			
Team working skills	71 (93.4)	3 (3.9)	2 (2.6)			
Ethical awareness and application skills	72 (94.7)	4 (5.3)	0			
Ability to adapt to different situations in professional		8 (10.5)	5 (6 6)			
life/professional adjustment	03 (82.9)	0 (10.3)	5 (0.0)			
Planning and organizational skills	67 (88.2)	4 (5.3)	5 (6.6)			
Motivation and initiative skills	56 (73.7)	4 (5.3)	16 (21.1)			
Conflict resolution skills	54 (71.1)	13 (17.1)	9 (11.8)			
Anger management skills	52 (68.4)	12 (15.8)	12 (15.8)			

Furthermore, Chi-square test results indicated that the satisfaction on the skills; ethical awareness (p=0.005) (satisfied; nursing; 100%, MLS; 75% and pharmacy 93.8%) and time management (p=0.005) (satisfied; nursing; 93.8%, MLS; 75% and pharmacy 93.8%) were significantly associated with the degree programme demonstrating different satisfaction among the degree programmes.

Students' satisfaction on the opportunities and other employability skills had no significant association with the degree programme they followed (p>0.05).

Discussion

This study found the AHS graduates of UoR are highly satisfied with the opportunities and skills they received during the undergraduate period.

UoR has started these programmes with the broad aim, to prepare a competent, caring, compassionate and reflective allied health graduate skilled in the delivery of patient care in collaboration with other healthcare professionals and capable of becoming potential care giving leaders, educators and researchers in the field of allied health sciences (University of Ruhuna, 2022). Therefore, based on the findings of this study, it is obvious that the aim has been achieved as many of the graduates have a high level of satisfaction with what they have received during the undergraduate period which strengthen their career paths.

Employability skills are the personal skills and attributes demonstrated by an individual that distinguish one job seeker from another in their field of specialization and help them to secure gainful employment, sustain them in that job and progress in their career to achieve their maximum potential and contribute towards their personal goals and that of their organization (Sarfraz et al., 2018). Since most of the graduates are satisfied with the received employability skills during the undergraduate life, they have acquired appropriate jobs, and will secure and progress well in their career for the betterment of both personal organizational goals.

The satisfaction on skills such as ethical awareness and time management have been shown interdegree programme difference. This might be related to that these aspects are not much addressed during the programme as a separate course unit or combined section in a course unit. Even though these aspects are addressed in the orientation programme at the very beginning of their undergraduate period, these aspects are necessary to be discussed and inculcated among the students later in their undergraduate life.

Even though the highest percentage of graduates satisfied about the opportunities and skills they received, the graduates who had dissatisfaction cannot be disregarded. It should be highly considered by the study programmes in future revisions of the curriculum and by introducing many programmes for them via career guidance unit of the UoR.

Further, some graduates may find an immense amount of gap in the skills they possess and the skills that employers' demand. This gap might be eradicated by improving the appropriate interaction between educational institutions and employers. Therefore, views of employers and policy makers can

be obtained in the curriculum revisions and even motivational speeches by the health care industries to the final year students might be more worthy. If the international employers can also be consulted focusing all aspects of our graduates are employed is also an appropriate strategy such as research, industry and clinical setting.

Conclusion

This cross-sectional study found the majority of AHS graduates of UoR highly satisfied with the opportunities and employability skills they received during their undergraduate period. Despite the low response rate, this study provided important information about the outcomes of the entire Allied Health Sciences study programmes. The study findings will help for the academic and administrative authorities of these degree programmes to re-think to enhance the outcome of graduates of already available degree programmes and potential degree programmes to be initiated in future. Further investigation with serial graduates or alumni satisfaction surveys are highly important to identify how these opportunities and skills contributed them to proceed and survive in their careers.

References

- Bala, R. (2021). Perception towards Employability Skills: Comparative Analysis of Students and Faculty Viewpoint. Proceedings of the International Conference on Innovative Computing & Communication (ICICC).
- Crebert, G., Bates, M., Bell, B., Patrick, C. J., & Cragnolini, V. (2004). Developing generic skills at university, during work placement and in employment: graduates' perceptions. *Higher Education Research & Development*, 23, 147-165.
- Jayasekara, R. S., & Mccutcheon, H. (2006). The history of nursing services and education in Sri Lanka and the effects on developing professionalism. *Journal of nursing education*, 45, 391-395.
- Messum, D., Wilkes, L., & Jackson, D. (2015). What employability skills are required of new health managers?. *Asia Pacific Journal of Health Management*, *10*(1), 28-35.
- Sarfraz, I., Rajendran, D., Hewege, C., & Mohan, M.D. (2018). An exploration of global employability skills: a systematic research review. *International Journal of Work Organisation and Emotion*, 9(1), 63-88.
- Sisodia, S., & Agarwal, N. (2017). Employability skills essential for healthcare industry. *Procedia computer science*, *122*, 431-438.
- University of Ruhuna. (2020). Tracer study report.

University of Ruhuna. (2021). Tracer study report.

University of Ruhuna. (2022). Student Handbook: Faculty of Allied Health Sciences,

Research Papers/Extended Abstracts

Scaling marks distribution of underperformed assessments to avoid higher failure rates

K. G. S. H. Gunawardana^{1*}, V. H. P. Vitharana¹, K. K. N. B. Adikaram², I. K. Dias², & R. L. Hettiarachchi³

¹ Department of Engineering Technology, ² Department of Multidisciplinary Studies, ³ Dean's Office Faculty of Technology, University of Ruhuna, Sri Lanka *Corresponding author: harshadewa@etec.ruh.ac.lk

Abstract

Scaling assessment marks of underperformed assessments provide a temporary solution for unforeseen anomalies in student's letter grade distributions of a course unit. In this work, a model of linear mapping is employed to scale the marks of an underperformed assessment of a course unit. The mapping process is based on shifting the average of raw marks to an expected average. It is demonstrated that the effect of such a scaling process on higher GPA value letter grades (A, A+) are minimal. It is confirmed that the shifting of letter grades is only short range in the middle and lower letter grades. The increment of the number of lower and middle range letter grades is mainly due to satisfying the condition on passing the continuous assessment. The imposed condition on passing the continuous assessment is to obtain 50% marks from the continuous assessment components of the course unit. Further, this analysis suggests having a minimum of class average of 60% marks for each component of continuous assessments is sufficient to achieve a reasonable number of passing grades for a course unit.

Keywords: Assessments grades, Average marks, Letter grades, Scale marks distribution,

Introduction

Students' performance in assessments and true evaluation of student's knowledge is complex. As a result, grade inflations and deflations are commonly observed in newly introduced course units (Wetzler, 2019; Swart & Hertzog, 2016). The problem is critical in newly introduced degree programs for students with different background. For instance, the recently introduced technology degree programs can be considered. In such cases, various ad hoc procedures are commonly in practice to remedy the unprecedented grade deflations. However, a proper scaling mechanisms of assessment marks are virtue in such situations to systematically rescale the marks distributions of underperformed assessments without losing the credibility of the final grades of the course unit (Kulick & Wright, 2008; University of Oxford, 2020; Cardiff University, 2020; Loughborough University, 2013; University of Bath, 2014).

In common practice, students are purely assessed against a given question paper. The students' development during the teaching learning activities of the course unit and its efficiency are generally disregard in assigning the grades. In STEM disciplines, student centered teaching learning methods are highly encouraged. In this concept, students are expected to work as a group in achieving the intended learning outcomes of the course unit. On this context, it is important to consider student's performance with reference to the group it belongs as a factor, when assigning the letter grades. Thus, rescaling the entire mark distribution is a meaningful act to meet the fixed letter grade cutoffs and institutional policies (University of Bath, 2014). On this context, an underperformed assessment could be a critical factor in ruling out the passing percentage of students in a course unit.

The main objective of this study is to demonstrate the efficacy of a marks scaling process on the distribution of final letter grades of a course unit having higher failure rate. In this work, First, a model of linear mapping is implemented to scale the entire mark distribution of an underperformed assessment. Next, it is discussed how would the proposed method influence the pass/fail conditions and final letter grades of a course unit. Finally, some suggestions are made to better plan the teaching/learning activities and assessments to overcome the issues in grade inflation and deflation.

Methodology

A linear model

The raw mark distribution of a given assessment can be represented by x_R , where the subscript *R* refers to the raw mark distribution. The class average of the raw marks distribution x_R can be denoted by $\overline{x_R}$. The entire mark distribution of the assessment can be scaled to a new distribution x_S , where the subscript S refers to the scaled mark distribution. The class average of the scaled mark distribution x_S can be denoted by $\overline{x_S}$. A linear model can be employed to map the raw mark distribution x_R to the scaled mark distribution x_S as described below. Assuming the maximum marks possible for the given assessment is x_R^{max} and no student will be entitled to receive marks above x_S^{max} . Thus, the maximum possible mark in the scaled distribution is also x_S^{max} . With above conditions, a linear mapping between the raw marks (x_R) and the scaled marks(x_S) can be defined as below.

$$x_{S} - x_{S}^{max} = \frac{(\overline{x_{S}} - x_{S}^{max})}{(\overline{x_{R}} - x_{R}^{max})} \times (x_{R} - x_{R}^{max})$$
(1)

The standard deviation of x_R and x_S can be denoted by σ_{x_R} and σ_{x_S} respectively. According to the above liner transformation, the standard deviation transforms as,

$$\sigma_{S} = \frac{(\overline{x_{S}} - x_{S}^{max})}{(\overline{x_{R}} - x_{R}^{max})} \times \sigma_{R}.$$
 (2)

In Figure 1, it is shown that the linear mapping of a mark distribution having an $\overline{x_R} = 40$ to $\overline{x_S} = 60$ using the above equation (1). The horizontal axes represent the raw marks, and the vertical axes is the scaled marks according to the linear model.



Figure 1: The scaled marks against the raw marks of a mid-semester assessment. The raw marks are scaled using a linear mapping (Eq. 1) and represented on the vertical axis. In this linear mapping, the class average of the raw marks (40) is mapped to a scaled mark distribution having an average of 60.

Results

A course unit consists of several components of assessments. Mainly it is divided in to two parts: the continuous assessment (CA) and the end semester examination (ESE). The CA component consists of several components of formative and summative assessments. For instance, the mark allocation of 40 and 60 are adapted for CA and ESE components of a course unit. The 40 marks of CA is distributed among several components of assessments. It is commonly adapted 5 marks for the weekly assigned tutorials, 10 marks for 2 quizzes (5 marks from each), and 25 marks for the mid-semester assessment. Moreover, the policy decision on passing criteria of the course unit is to obtain a minimum of 50% mark from the CA component.

In the Figure 2 below it is depicted the total CA mark distribution of students for 4 new course units (Named as A, B, C, and D). These course units are taught to the students for the first time. The number of students in the class is 81. The class averages of the CA components of course units A, B, C, and D are 15.44, 21.70, 18.73, and 23.40 respectively. Thus, the implementation of the condition of passing the course unit (obtain more than 20 marks) would lead to fail a significant number of students in course units A, B, and C. In this scenario, the number of failing students of course units A, B, C, and D are 69, 32, 45, and 7 respectively. As a percentage, they are 84%, 39%, 55%, and 8%. Thus, it is essential to analyze the students' performance on underperformed assessments causing the problem. The major summative component of all 4 course units is the mid semester assessment which

contributes 25 marks for CA. In course units A, B, and C the mid semester assessment was the underperformed assessment which rules out the passing percentage.



Figure 2: The total of continuous assessment marks is plotted in ascending order for the course units A, B, C, and D.

In proceeding, the assessment marks of course unit A is considered for this analysis. In the Figure 3a it is plotted the mark distribution of the mid-semester evaluation of course unit A. The class average of the mid-semester assessment is $\overline{x_R} = 40$. It is used linear mapping (Eq.1) to scale marks to shift the class average to $\bar{x}_s = 60$. In Figure 3b, it is depicted the distribution of the scaled marks obtained from the linear mapping. The marks distribution is represented in bins of width 10 units. In Figure 1, it is plotted the linear mapping of the marks of the mid-semester assessment. Due to the linear model, it can be noted that the shifts of marks in higher ranges are small compared to that in lower ranges. This supports the requirement of improving the passing percentage having the lowest impact on the results of the high performing students. The maximum change of mark in the mid-semester assessment is 30 points which occurs at the students having the lowest mark. The minimum change in the mid-semester assessment marks is 10 which is added to the student having the highest mark. It must be noted that the contribution of these changes to the final total mark is 25% of the above values. Thus, the effective adjustment of the marks ranges from 2.5 to 7.5. It is confirmed that this adjustment of marks mainly influences the passing condition on continuous assessments. If the passing condition on continuous assessment is removed, 86% of students receive passing grades according to the total marks of the course unit. This is due to the students has performed well in the end-semester examination. In this case, the number of students having grades A and above is 3. Moreover, the number of students having grades B and above is 18.

In Figure 4, the red bars represent the grade distribution with the scaled marks of the mid-semester assessment. A considerable improvement of the grades in the middle ranges are observed. The percentage of students receiving passing grades is 65%. As a result, a student receives a grade "A+" whereas the number of students receiving "A" grades has not been changed. The increase of the

intermediate grades (A-, B, B-, C+, and C) are mainly due to fulfilling the passing criteria of the course unit. Moreover, short-range boundary crossing of the grades are also observed. It is confirmed that this number is small. In the absence of the passing criteria on CA, there are 12 number of C+ grades. This number reduces to 8 and increases the B- grades by 6 after rescaling the mid-semester assessment and imposing the passing criteria on the continuous assessment (See Figure 4). The number of students having grades B+ and above are 18, whereas the number having grades B or above is 18 without scaling marks and imposing the passing criteria on CA. Thus, it is confirmed that the shifting of grades are short-range and does not contribute grade inflations.

The above analysis suggests that a minimum class average of each assessment should be at least 60% to pass a fair number of students in the course unit. The teacher can plan in subsequent years to improve the teaching/learning activities and to optimize the course unit learning outcomes and content in curriculum revisions to rectify the anomalies. The two quizzes (quiz 1 and 2) of this course unit have class averages 50% and 30% respectively. Thus, the class average of quiz 2 is well below the expected. The mark distribution can be scaled to shift the class average to 60% marks. In figure 4, the gray columns represent the grade distribution with the scaled marks of the mid-semester assessment and quiz 2. It is observed that only an A- grade switches to A. Further, the observed gain of 3 B's, 5C's, and 2 D+ are due to passing the condition of 50% requirement on CA. At this stage the failing percentage is reduced to 22%.



Figure 3 The marks distribution for the mid semester assessment of course unit A is plotted in the histogram. The subfigure (a) shows the raw marks distribution and the (b) is the distribution of scaled mark as shown in the Figure 1.



Figure 4: Letter grade distribution for course unit A. The letter grades are issued according to the total marks obtained for the course unit. The grade boundaries for grades A+ to D are 85,70, 65, 60, 55, 50, 45, 40, 35, 30, and 25, respectively. The grade "F" is assigned for students who do not meet the 50% requirement of the continuous assessment component.

Conclusion

In this work, assessment marks of a selected course unit are analyzed statistically. A model of linear mapping is implemented to scale the entire mark distribution of an underperformed assessment. The mapping process is based on shifting the average of raw marks ($\overline{x_R}$) to the expected average ($\overline{x_S}$). The adjustment to the assessment marks due to the employed linear mapping is small at higher marks and larger in the lower mark regions. As a result, the effect of such a scaling process on higher GPA value letter grades (A, A+) are minimal. Further, it was confirmed that the shifting of letter grades is only short-range. The increment of the lower and middle range grades is mainly due to satisfying the passing condition on the continuous assessment. Further, this analysis suggests having a minimum of 60% class average for all the components of continuous assessments is sufficient to achieve a reasonable number of passing grades for a course unit.

References

- Cardiff University. (2020). Scaling of Marks. <u>https://www.cardiffstudents.com/advice/academic /scaling/</u>
- Kulick, G., & Wright, R. (2008). The impact of grading on the curve: A simulation Analysis.. International Journal for the Scholarship of Teaching and Learning., 2(2).

- Loughborough University. (2013). Academic Quality Procedures Handbook. <u>https://www.lboro.ac.uk/services/registry/pqtp/aqphandbook/</u>documentation/cop-scaling-<u>marks/</u>
- Swart, A. J., & Hertzog, P. E. (2016). Contrasting three different academic assessments of a compulsory capstone module in power engineering indicates reliability. Vereenigingn.
- University of Bath. (2014). Guidance on the scaling of marks for assessments. <u>https://www.bath.ac.uk/publications/qa35-assessment-procedures-for-taught-programmes-of-</u> <u>study/attachments/qa35-appendix-4-guidance-on-addressing-problems-with-assessments-</u> including-scaling.pdf
- University of Oxford. (2020). Supplementary advice regarding scaling of marks <u>https://academic.admin.ox.ac.uk/files/supplementaryadviceregarding scalingofmarks.pdf</u>
- Wetzler, E. L. (2019). How using a restricted grading range distorts GPAs and disproportionately penalizes low-performing students. *Policy and practice reviews*, *4*, 10.

Research Papers/Extended Abstracts

Temporal analysis of student satisfaction on degree programmes conducted by the Faculty of Fisheries and Marine Sciences & Technology in the University of Ruhuna, Sri Lanka

H. B. Asanthi*, K. S. S. Atapaththu, S. S. Herath, L. N. Wijewardene, & A. W. A. T. Dilhan

Faculty of Fisheries and Marine Sciences & Technology, University of Ruhuna, Sri Lanka

*Corresponding Author: asanthi@fish.ruh.ac.lk

Abstract

Student-centered teaching and learning are one of the key concepts of the undergraduate degree program at present, and thus, 'student satisfaction' is a prime factor behind the success of academic programmes and curriculum development. Student feedbacks on academic programmes through student satisfaction surveys using questionnaires are the best way to collect the information and analyzing responses over the years is necessary to have a holistic view of the student satisfaction perception of the degree program. Although the faculty of Fisheries and Marine Sciences & Technology (FMST) has conducted annual student satisfaction surveys since 2019, no attempt has been taken to temporal analysis. Therefore, the present study was designed to analyse the trends of responses in annual student satisfaction surveys over years and understand student satisfaction perception of the FMST degree programs. A Google form consisting of 13 different statements was circulated among students of the FMST. Student satisfaction levels were statistically compared using a chi-square test, while a SWOT analysis was also employed. Student dissatisfaction on services and information availability of the faculty has gradually declined, while their level of satisfaction with course selection based on their interest and future prospects increased over time. Compared to 2019, student satisfaction on the role of FMST in strengthening and gaining knowledge during their undergraduate programs was significantly higher in 2022. SWOT analysis highlighted the strengths of the FMST degree programs giving insights on the success of orientation programs, website development, course structure and progression, the role of academic staff and alumni and facilities available at the faculty. Continuous monitoring of responses and trends in student satisfaction surveys and SWOT analyses are needed and helpful to maintain the overall quality of the academic program allowing us to think of future developments to satisfy the core of the university education.

Keywords: Academic programme, FMST, SWOT, Services, Student satisfaction

Introduction

Globally, feedback and suggestions of students on all aspects of academic programs are being considered as one of the major concerns behind the improvement of the quality of degree programs conducted by educational institutes. This information is mainly collected either by using an open or a close-ended questionnaire. In student satisfaction surveys, the questionnaire is prepared to measure the ability of students to make their student life comfortable, competence, confidence, and professionalism conveyed by the ambience through their self-satisfaction (Arthur, 2020). Therefore, the evaluation of student satisfaction is mainly focused on how far teaching and learning have met student expectations rather than how teaching could be enhanced (Arthur, 2020).

The Faculty of Fisheries and Marine Sciences & Technology (FMST) was established in 2005 and the first batch of graduates in Bachelor of Science Honours in Fisheries and Marine Sciences passed out in 2011. Since then, student intake has increased while introducing the second-degree programme in 2017 in par with the recommendations of relevant stakeholders. The faculty started to conduct a student satisfaction survey with the approval of the Faculty Board in 2019 and this survey was annually conducted since then. Even though the annual summary report was presented at each year to the Faculty Board, there is no any attempt made to the temporal analysis of the results of student satisfaction surveys to identify the trend in those responses over time.

Therefore, the objective of the present study was to analyze the annual student satisfaction survey reports to taking an idea of the student's satisfaction perception on the degree programmes of FMST to improve the overall quality of the academic program.

Methodology

The student satisfaction survey was conducted by using hard copies of an objectively formulated questionnaire in the years of 2019 and 2020. Then the same questionnaire was developed into an online Google form and its link was published on LMS. The online data collection was conducted in 2021 and 2022. The sample size for the whole period of study was 403 represented 50% of the total student population of the faculty. The questionnaire was formulated under thirteen statements (S1-S13). Those thirteen main questions are given below and students were asked to provide an overall score on a scale of 1 to 5. The score of 1, 2, 3, 4, and 5 stands for very unsatisfied, unsatisfied, neutral, satisfied, and very satisfied respectively. Students were advised to submit the completed questionnaire anonymously within two weeks of time after receiving the questionnaire.

S1: I was provided with the information when I contacted the faculty office and that helped me to select this degree before I enrolled to the degree programme.

- **S2:** Information on faculty website including the curriculum was useful to get an idea about the degree program I follow.
- **S3:** I am well aware of that I have been selected for a degree in the field, which is internationally well recognized.
- **S4:** I am capable for completing the degree program within stipulated time.
- S5: I can select the courses according to my interest and my future prospects.
- S6: My senior colleagues advised me to select my optional courses.
- **S7:** I was guided by academic staff of the faculty/my mentor when selecting optional course modules.
- S8: I was able to strengthen my knowledge and skills after completing each course unit.
- **S9:** All courses that I have followed were well organized.
- **S10:** I will be able to apply the knowledge gained through the whole courses.
- **S11:** Students are free to comment and question about the content and structure of course they follow.
- **S12:** I am aware of the rules and regulations of the university and rules that applicable to students including for examinations.
- **S13:** I am confident that my English language competency is good enough for me to continue my degree and perform well in the degree programme.

In addition, students were asked to provide their comments and suggestions as those are very essential for curriculum revision and development. The statistical comparison was done by employing the χ -square test (Pearson's test) at the 0.05 significant level in IBM SPSS (25 version) while graphical illustrations were done in MS Excel. The SWOT analysis was done for the overall summary of responses for each statement considering the whole period of study.

Results

Student's satisfaction before enrollment on services and information available

The level of dissatisfaction of students with the service provided by the office of FMST gradually declined during this four-year period (Fig. 1, S1). The percentage of students who were unsatisfied with the services and availability of information in the year 2022 was significantly lower ($\chi^2 = 85.05$, df = 6, p < 0.05) than that of 2019. A similar trend was also observed for the availability of information on the website (Fig.1, S2) which support for them to get enrolled in the degree programs ($\chi^2 = 33.08$, df = 6, p < 0.05).



Figure 1: Level of dissatisfaction of students for service quality (S1, S2), course selection and preparation of future career (S5), academics guidance (S7), course structure, knowledge gain, and experience (S8, S9, S10).

Course selection and preparation of future career

Students' satisfaction with their course selection based on their interests and future prospects comparatively increased over time. The average satisfaction level in this regard (S5) during these four years was 71 ± 6 %. Students were supported by the mentoring service for them to select their courses, and this was clearly indicated by the reduction of the unsatisfaction level of student responses given for the S7 (Fig. 1), in which students were tested for the support given by the academic staff of the faculty when selecting optional course units. Student satisfaction with the support given by academic staff for selecting optional courses gradually increased over time, where this level in 2022 (65%) was significantly higher ($\chi^2 = 39.90$, df = 6, p < 0.05) than that of 2019 (63%). However, approximately 30% of students' responses fell into the neutral category for this statement.

Structure of course, knowledge gain, and experience

The satisfaction level of students of the faculty of FMST on strengthening and gaining knowledge (S8) during their undergraduate program was significantly higher ($\chi^2 = 69.60$, df = 6, p < 0.05) in 2022 (90%), than that in 2019 (55%). In parallel an increase in satisfaction with their knowledge gain (S8), the unsatisfaction level gradually decreased (Fig. 1). In terms of the organization of courses (S9), students were happy and the level of satisfaction in this regard was significantly ($\chi^2 = 81.30$, df = 6, p < 0.05) higher in 2022 (80%) than in 2019 (32%).

The Implication of their knowledge and experience

Students of the faculty of FMST are confident enough to apply the knowledge and experience gained (S10) during their undergraduate studies. The satisfaction level of students on their confidence in applying their knowledge and experience comparatively increased from 45% to 85% during this four years' time gap. In parallel an increase in their satisfaction level, the unsatisfied responses in this regard gradually declined (Fig. 1), where the lowest unsatisfaction was found in 2022 ($\chi^2 = 81.30$, df = 6, p < 0.05).

SWOT Analysis

The SWOT analysis for the 403 responses representing nearly 50% of the total student population in each thirteen statements is described in Table 1.

Statement No.	Strength	Weaknesses	Opportunities	Threats
1	Awareness of necessary	Nearly 17% of	The contact detail	Competitiveness
	information of the	students were	is made available	in advertising
	degree programs before	unsatisfied with the	for taking	degree
	the student's	information provided	information.	programmes by
	enrollment was	by the faculty office		private
	satisfactory.	before enrollment.		universities.
2	Information given in	Nearly 12% of	The well-	Competitiveness
	the faculty website was	students were	constructed	in publishing
	satisfactory for new	unsatisfied with the	website is available	attractive
	students.	information given in	for easy search of	websites by
		the faculty website.	information.	private
				universities.
3	The selection of the	Nearly 8% of	The 'Alumni' of	Less awareness
	field of the degree was	students were	FMST is well	of the
	satisfactory due to its	unsatisfied with the	established to	international
	internationally	international	support by sharing	recognition of
	recognition.	recognition of the	their own	the fields of
		field of study.	experiences.	degree.
4	The self-judgment on	Nearly 15% of	Grace attempts are	No fallback
	completing the degree	students has made the	considered upon	option was
	within the stipulated	judgment on	request.	established in the
	time was satisfactory.	unsatisfactory for		faculty for
		completing the		dropdown
		degree within the		students.
		stipulated time.		
5	Students have the	Nearly 10% of	Optional courses	External factors
	opportunity of selecting	students didn't select	are indicated in the	change the
	courses based on	courses based on	curriculum for easy	student's
	students' interest.	their interest.	search.	interest.

Table 1: SWOT Analysis

Statement No.	Strength	Weaknesses	Opportunities	Threats
6	The advices taken for	Nearly 15% of the	Considerable time	Unavoidable
	selecting optional	students did not take	duration is	external factors
	courses from senior	advices from senior	provided for the	reduce the time
	colleague was	colleagues at	registration of	for selecting
	satisfactory.	satisfactory level.	courses through	optional courses.
			MIS.	
7	The academic staff	Nearly 11% of	Maintaining	Unavoidable
	member/ mentor guides	students did not take	academic records	reasons fall
	students for selecting	guidance from	in the student	students into
	optional courses at the	academic staff for	portfolio for easy	rapid track for
	level of satisfactory.	selecting optional	observation of	completion of
		courses at the level of	mentors.	the degree.
		satisfactory.		
8	The students were	Nearly 6% of the	OBE practices at	The skills are
	satisfied with the ability	students did not	each course unit.	narrowing
	to strengthen the	satisfy with the		mostly into IT by
	knowledge and skills	knowledge and skills		the society.
	after completing each	they have strengthen		
	course unit.	after completing each		
		course unit.		
9	The students were	Nearly 9% of the	Students can	The new
	satisfied with the	students did not	compare the course	generation
	organization of all the	satisfy with the	structure with other	expects more IT
	courses.	organization the	higher universities	related courses.
		courses.	searching websites.	
10	Students were satisfied	Nearly 7% of the	Research and	The Service
	with the ability to apply	students did not	industrial training	Operation
	the knowledge gained	satisfy with their	provide	Records (SOR)
	through the all courses.	ability to apply the	opportunity to	of some
		knowledge gained	apply the	authorities and
		through the all	knowledge.	agencies has not
		courses.		include the
				degree
				programme.
11	Students were satisfied	Nearly 7% of the	Students'	External factors
	with they are free to	students did not	evaluation forms	reduce the
	comment and question	satisfy with their	on teaching and	freedom of
	about the content and	freedom to comment	Student	students.
	structure of course.	and question about	Satisfaction survey	
		the content and	are used for taking	
		structure of course.	comments.	
12	Students were satisfied	Nearly 4% of the	Examination	Some of the
	with the awareness of	students did not	criteria, rules, and	confidential
	the rules and	satisfy with the	regulations are	documents are
	regulations of the	awareness of the	available in student	not made

Statement No.	Strength	Weaknesses	Opportunities	Threats
	university and rules that	rules and regulations	Handbook and on	available in open
	applicable to students	of the university and	the website.	sources.
	including for	rules that applicable		
	examinations.	to students including		
		for examinations.		
13	Students were satisfied	Nearly 7% of the	English course is	High cost of
	with the English	students did not	conducted up to	internationally
	language competency is	satisfy with the	level III and	recognized
	good enough to	English language	university has	English
	continue the degree and	competency.	several clubs and	examinations
	perform well in the		societies to	such as IELTS.
	degree programme.		develop English	
			language	
			competency.	

Discussion

The assessment of the students' satisfaction on the quality of contact personnel in administrative sections has been identified as a survey instrument in educational service quality named as the SERVQUAL framework (Gibson, 2010). The present study also evaluated the service quality as a preenrollment factor that showed a significant reduction of level of dissatisfaction of students on the services provided by the faculty office and availability of information on the website over time

Gibson (2010) reported that the preparation of future career expecting a good job and a quality life is one of the important variables needed to be included in student satisfaction survey. The present study shows an average satisfaction level on the preparation of future career as 71 ± 6 % and it was identified as a strength in the degree programmes. We erasinghe et al. (2017), emphasized the importance of assessing the quality of service providers in student satisfaction survey. The present study considered a factor of the guidance of academic staff/mentors for selecting optional courses in the survey and the student responses in terms of dissatisfaction level declined over time. Thus, our findings agree with We erasinghe et al. (2017) as they stated that the importance of students' satisfaction is determining through cooperation, kindness of administrative staff, and their responsiveness in the educational system.

The significant higher level of satisfaction in 2022 on strengthening and gaining knowledge during the undergraduate program is one of the clearest pieces of evidence of considering the historical data for making a benchmark level of student satisfaction. Kane et al. (2008) stated that reassurance of the feedback and action cycle could be gained through benchmarking student satisfaction over the years. Martirosyan (2014) check has suggested that the questionnaire should be student-driven and then it would be reflected the concerns of the students rather than the administration.

One of the positive contributing factors in the present student satisfaction survey was the confidence of students in applying their knowledge and experience of the degree programs and the comments and suggestions given by students could be related to the current curriculum reform being implemented in the future.

Conclusion

Temporal analysis of the level of dissatisfaction for the tested variables in the questionnaire gradually declined over the years while satisfying the students of FMST in terms of the overall quality of the degree programs. However, there are still some unsatisfactory levels in certain aspects while SWOT analysis observed certain weaknesses and therefore, it is essential to make necessary arrangements to address those issues in order to improve the quality of degree programs to support prospective students. This study recommended reformulating the questionnaire used for the survey including some newly identified aspects.

References

- Arthur, L. (2020). Evaluating student satisfaction-restricting lecturer professionalism: outcomes of using the UK national student survey questionnaire for internal student evaluation of teaching. Assessment & Evaluation in Higher Education, 45(3), 331-344.
- Gibson, A. (2010) Measuring business student satisfaction: A review and summary of the major predictors. *Journal of Higher Education Policy and Management*, 32(3), 251-259.
- Kane, D., Williams, J., & Cappuccini-Ansfield, G. (2008). Student satisfaction surveys: The value in taking an historical perspective. *Quality in Higher Education*, 14(2), 135-155.
- Martirosyan, N. (2015). An examination of factors contributing to student satisfaction in Armenian higher education. *International Journal of Educational Management*. 29(2), 177-191. https://doi.org/10.1108/IJEM-09-2013-0143
- Weerasinghe, I.S., & Fernando, R.L. (2017). Students' satisfaction in higher education. American Journal of Educational Research, 5(5), 533-539.

Research Papers/Extended Abstracts

Perception of students on online examinations: A case study of the Faculty of Fisheries and Marine Sciences & Technology in the University of Ruhuna, Sri Lanka

E. G. K. Y. C. Bandara^{*}, R. D. N. Wijesinghe, & R. G. Sanuja

Department of Fisheries and Aquaculture, Faculty of Fisheries and Marine Sciences & Technology,

University of Ruhuna, Sri Lanka

*Corresponding Author: <u>yogya@fish.ruh.ac.lk</u>

Abstract

Since March 2020 up to date, smooth functioning of higher education systems in Sri Lanka is hindered by two main challenges; earlier by COVID-19 pandemic and later by the prevailing economic crisis of the country. Sudden closures of the universities lengthen the time required for undergraduates to complete their degrees, especially because of the inability to conduct examinations despite lectures and practical being completed within the allocated time. In such occasions, online examinations could be a better alternative. The present study is of utmost importance since its objective was to ascertain the students' perception of the Faculty of Fisheries and Marine Sciences & Technology on online examinations. A semi- structured questionnaire was given to the undergraduates of the faculty. Responses were summarized and analyzed using Microsoft Excel 16. According to the responses, majority of them (73.7%) seem to be of the opinion that conducting online examinations can be troublesome mainly due to issues related to networks, devices and power supplies, lack of prior experience, poor computer literacy and, disturbance at their houses. If there will be online examinations, most of the students (58.9%) will have mobile data connection followed by Wi-Fi hotspot (26.7%) and broadband (23.3%). Out of 236 respondents 28 students do not have any device to participate in online examinations while laptop and desktop computers are owned by 197 and 11 students respectively. As per the given responses 35.59% have average or below average computer literacy levels. The fact that only 77 students had earlier practice in online examinations seems to demoralize the students to participate in online examinations. It can be concluded that, if the faculty needs to conduct online examinations it should be done after conducting several practice sessions along with the provision of required facilities to all the students.

Keywords: Computer literacy, Network issues, Online examinations, University of Ruhuna

Introduction

At present, e-learning for teaching and learning is encouraged in Sri Lanka mainly due to COVID-19 pandemic and prevailing economic crisis of the country. Examinations, an integral component of teaching learning process are the mode of assessment to determine the knowledge of students, pensiveness, competence and skills (Sorensen, 2013). Technological development and digitalization facilitate the educational field via several approaches such as online teaching and online examinations (Adanır et al., 2020). Though Online examinations relief the stress and edginess of students, it leads to create academic misbehaviors that interfere with the fairness of the examinations (Tam, 2022). As online exams are being recognized as one of the effective assessment methods in higher education systems adhering to the prevailing situations, it is a necessity to ascertain the learners' perceptions since they are one of the key stakeholders in the assessment process. However, there is a dearth of studies exploring the learners' insights on online examinations. The purpose of this study was to investigate the students' perception on conducting online examinations to overcome the diverse issues and to explore the challenges and opportunities.

Methodology

A survey was conducted targeting 348 undergraduates of the Faculty of Fisheries and Marine Sciences & Technology, University of Ruhuna, Sri Lanka. A semi-structured questionnaire which includes both closed ended and open-ended questions was circulated as a Google form to obtain the information. The following aspects were the major focus of the prepared semi-structured questionnaire;

- Most preferred mode of examinations (online or physical)
- Reasons for their preference
- Devices available to assist online examination process
- Network connections to participate in online examinations
- Computer literacy
- Previous experience regarding online examinations

Retrieved data (from 236 respondents) were summarized and analyzed by using MS Excel and represented as percentages.

Results

The present study was conducted to get an insight on the perception of the undergraduates of the Faculty of Fisheries and Marine Sciences & Technology on online examinations. Out of the targeted 348 current student population, 236 (67.82%) undergraduates had given their responses where 86, 62, 46 and 42 students were from Level I, Level II, Level III, and Level IV respectively. Responses indicate that the majority of the students (73.73%) do not prefer online examinations whilst the rest (26.27%) do agree if the examinations are conducted online.

73.73% (174) of undergraduates, who think that conducting online examinations is not appropriate, had a diverse array of concerns related to online examinations. Issues related with network connections, power interruptions, lack of devices, lack of previous experience on online examinations, poor computer literacy, inability to conduct practical as online examinations, and disturbances at home were the major reasons given by the respondents followed by few minor reasons such as technical issues, additional stress incurred by online mode and difficulties caused by the electronic screen when exposed for a long time especially when the student is wearing spectacles. Interestingly two students have also considered the possibility of cheating when the examinations are conducted in online mode. Moreover, one student as a reason to reject the online examinations has highlighted the point that whoever studies the same subjects should be provided with equal facilities (Table 1).

According to the majority of the responses, (33.14% out of 174) issues in the network connection is the main obstacle for them to participate in online examinations. Further inquiries regarding this matter assert that only 132 (55.9%) respondents have a stable network connection whereas the other 104 students have difficulties in finding a stable network connection. The majority of the students (58.9%) use mobile data followed by Wi-Fi- hotspots (26.7%) and broadband (23.3%). According to the responses given by the undergraduates, it seems that some of them use multiple network connections. Also, most of the students (71.2%) have 4G coverage whilst the second common coverage is 3G (21.2%). In addition, since the connections are not very stable there is an issue of having a continuous strong connection which shifts from 4G to Edge (E) ultimately affecting the students when they face the examinations online.

Table 1: Different Reasons Given by the Respondents Why they do not Prefer Online Examinations and Respondent Percentages of Each Reason

Reason	Student Percentage (%)
Issues with network connection	32.76
Network issues + power failures/ interruptions	13.79
Lack of devices	8.62
Power failures/ interruptions	7.90
Lack of previous experience on online examinations	6.32
Network issues + device issues	5.17
Disturbances at home	4.60
Lower computer literacy	4.02
Practical examinations cannot be conducted in online mode	2.87
Device failures	2.30
Other reasons	2.30
No reason given but do not prefer online examinations	9.77

Unavailability of required devices such as laptops and desktop computers to participate in the online examination as well as smart phones or cameras to participate in the proctoring process during online examination is another major cause which discourages students to participate in online examinations. Out of the 236 respondents, 11.9% (28) do not have any device to participate in online examinations whereas 88.1% (208) students have either a desktop computer or a laptop computer in which the most common device is the laptop computer (owned by 197 students) over the desktop computer (owned by only 11 students). Since proctoring is an integral process in online examinations focus has been given to the availability of smartphones or cameras to assist with the process. 210 students only have smartphones whilst only 02 students have cameras to assist with the proctoring process during the online examinations.

Another major problem was the poor computer literacy of the students. Responses indicate that 84 students are having an average or below average computer literacy. But it is an interesting fact that most of the students are quite confident about their computer literacy where they have responded that 12 of them are excellent, 39 of them are very good, 83 of them are good and 18 of them are above average. Furthermore, responses evince that ongoing power interruptions due to fuel shortage in the country is another major hindrance for conducting online examinations. Majority of the students (61.9%) have mentioned that if there will be a power interruption during an online examination, they won't be able to participate to the examination because power failures lead to loss of network connections, malfunctioning of the devices such as laptop computers, desktop computers and smartphones which are considered as essential components of online examinations.

In addition, lack of previous experience on online examinations is another limiting factor which demoralizes the students making them unconfident to participate in online examinations. Out of 236

respondents only 77 (32.6%) had earlier practice in online examinations where they have participated in a diverse array of examinations in which Multiple Choice Questions (MCQ) were the major component. 11 students had suggested to conduct rehearsal sessions prior to conduct proper online examinations so that, experience gain through these practice sessions will be a confident booster for the students.

Critical evaluation of the overall idea of students on online examinations suggests that most (160) of them believe online examinations will not be a good alternative to be conducted instead of conventional physical examinations. Inspiringly, 18 students seem to be of the opinion that online examination is a better solution to overcome the challenges incurred by the current situation of Sri Lanka in higher education. In contrast, seven students hold the view that conducting online examinations will be really difficult with the prevailing economic crisis and power failures in the country. 30 students think online examinations are good, while 17 other students are ready to participate in online examinations if the university or other responsible authorities could provide all the students with equal facilities required for online examinations. According to the respondents, if there will be an online examination, the most preferred mode of online examination is assignment-based evaluation followed by open book tests, MCQ questions, written exams, and presentations whilst vivavoce is the least preferred mode. Also, if there will be online examinations 37.3% of respondents think they will need more preparation time as well as 34.3% believe that more effort should be exerted during online examinations than conventional physical examinations. Students will need the same preparation time and the same effort in online examinations according to the view of 59.7% and 57.6% respondents respectively. Rest of the respondents think that less preparation time and less effort will be enough to complete online examinations.

Discussion

The present study was conducted as an initial survey prior to implement online examination systems for the undergraduates of the Faculty of Fisheries and Marine Sciences & Technology, University of Ruhuna. Online examinations have several positives over conventional examinations, mainly its ability to increase the frequency of assessments, mode of assessments and feedback (Özden, 2004).

In accordance with the findings of the present study, Vershitskaya et al. (2020) suggest that issues related with the devices such as smartphones, laptop and desktop computers and other smart devices and lack of technical assistance is a key obstacle in e-learning where e- assessment is also a component of e-learning. Some of the respondents had the problems that will be occurred due to continuous exposure to digital screens making them uncomfortable to participate in online examinations. Singh et al. (2021) have found that the longer duration of online classes increases the probability of having eye strain, neck and back pain, headache, anxiety and fatigue.

According to the findings of the present study following suggestions and recommendations can be made; (1) conducting several practice sessions prior to online examinations and get the feedbacks of the students, (2) university or other authorities should try their best to provide the students with required facilities to conduct online examinations and, (3) faculty should focus on developing new assessment strategies that will be easier to conduct online especially for the practical examinations.

As a future study it is recommended to develop an online examination system and get perception of the students on the systems so that developments can be made to the system depending on the responses given by the students.

Conclusion

According to the findings of the present study the following conclusions could be made; at the moment online examinations are less preferred by the undergraduates of the faculty where the majority of them want to participate in conventional physical examinations. Main reasons for their less preference towards online examinations are; issues related with network connections, devices and, continuous power supply, lower computer literacy, lack of prior experiences and lack of appropriate environments at their houses. Students believe that it will be okay to conduct online examinations with the provision of required facilities to every student along with the satisfactory practice on online examinations.

References

- Afacan Adanır, G., İsmailova, R., Omuraliev, A., & Muhametjanova, G. (2020). Learners' perceptions of online exams: A comparative study in Turkey and Kyrgyzstan. *International Review of Research in Open and Distributed Learning*, 21(3), 1-17.
- Özden, M. Y. (2004). Students' perceptions of online assessment: A case study. *International Journal* of *E-Learning & Distance Education/Revue internationale du e-learning et la formation à* distance, 19(2), 77-92.
- Singh, H. K., Joshi, A., Malepati, R. N., Najeeb, S., Balakrishna, P., Pannerselvam, N. K., Singh, Y. K., & Ganne, P. (2021). A survey of E-learning methods in nursing and medical education during COVID-19 pandemic in India. *Nurse education today*, 99, 104796.
- Sorensen, E. (2013). Implementation and student perceptions of e-assessment in a Chemical Engineering module. *European Journal of Engineering Education*, 38(2), 172-185.
- Tam, A. C. F. (2022). Students' perceptions of and learning practices in online timed take-home examinations during Covid-19. Assessment & Evaluation in Higher Education, 47(3), 477-492.

Vershitskaya, E. R., Mikhaylova, A.V., Gilmanshina, S.I., Dorozhkin, E. M., & Epaneshnikov, V. V. (2020). Present-day management of universities in Russia: Prospects and challenges of elearning. *Education and Information Technologies*, 25(1), 611-621.

Models/Concepts/Proposals

for

Quality Assurance

Models/Concepts/Proposals

Centralized online course evaluations conducted by the Faculty of Medicine in the University of Ruhuna, Sri Lanka

S. S. Jayasinghe^{1*}, U. A. P. A. Chandrasiri², H. G. G. I. Manthika¹, & W. K. A. Prasadi¹

¹Department of Pharmacology, ²Internal Quality Assurance Cell, Faculty of Medicine, University of Ruhuna, Sri Lanka

*Corresponding Author: sudheerasj@med.ruh.ac.lk

Background

Course evaluation is an integral part in higher education system. A course evaluation is a paper or electronic questionnaire, which requires a written or response answer to a series of questions in order to evaluate a given course. It is recommended by the University Grants Commission as a best practice to be internalized, that facilitates a better understanding on how well teaching / learning needs are met by the students. The course evaluations allow a faculty to develop an action plan for course improvement as needed and to implement course changes and student concerns (Schiekirka, Feufel, Herrmann-Lingen & Raupach, 2015).

Ongoing course evaluation is a key component of quality improvement in higher education. The literature recommends a comprehensive approach in evaluating curricular, teaching / learning, assessments, learning environment and student support (Abrahams & Friedman, 1996). However, there remain a number of challenges in implementing the course evaluation process. The most critical fact is maintaining acceptable response rates. According to the literature acceptable response rate is 50% (Goodman, Anson & Belcheir, 2015).

The MBBS degree programme in the Faculty of Medicine, University of Ruhuna consist of 15 different subjects involving 15 departments, running for 5-year degree programme. The course evaluation in the faculty implemented centrally through Internal Quality Assurance Cell (IQAC) since 2020.

This paper aims to share how the Faculty of Medicine internalized course evaluation and improve the course based on the feedback received from the students.

Methodology

The tool for course evaluation had been developed by the Medical Education and Staff Development Unit. To address the diversities and the uniqueness of individual departments, the tool has been revised and individualized to each department and adopted according to their requirements. After each of the
main examinations, one department was selected to carry out the course evaluation. Different types of feedbacks are requested from the students in various stages that include teaching/learning evaluation, satisfaction survey, clinical training etc. Several departments are involved in one main examination. Therefore, it would be an exhausting exercise for students if we give course evaluation of each department that are contributing for an exam. Therefore, at a time, only one department was evaluated to minimize the student exhaustion and maintain the reliability and accuracy of the data.

The tool was converted to a Google form and distributed among the students who completed the particular examination, but before releasing the results to minimize the bias. The participation of the students was entirely voluntary. The communication was done through WhatsApp groups of students established with IQAC. Students were given one week to evaluate the course.

The questionnaire for course evaluation focused on curriculum content, teaching / learning, assessments, learning environment, coordination and facilities.

Under the section of curriculum content and teaching / learning; overall content of the curriculum, effectiveness of the teaching learning activities conducted by the department were evaluated. Difficulty level and effectiveness of the assessments were evaluated under assessments. Under coordination and facilities; satisfaction regarding the communication with the departments, support given by the lecturers, adequacy of prior noticing of assessments & teaching activities, and facilities available in the departments were also evaluated.

Information obtained in course evaluation is anonymous and participation is entirely voluntary in a non-threatening environment. After evaluation of each course, data were analyzed and a detailed report was sent to the Head of the Department requesting to table the report at the department meeting, and discuss the concerns raised by the students, and finally to inform the measures individual departments have taken to improve the course.

According to the recent interests of medical education; questionnaires have been modified including new questions. Few departments who have modified their questionnaires recently have included these trends like self-directed learning, collaborative learning, creative and critical thinking, team work, lifelong learning, and guidance given to the students.

Results

Since 2020, nine departments have undergone evaluations of their courses including one out of three Pre-clinical courses, all six Para-clinical courses and two out of five Clinical courses. Percentages given in the results were calculated from the total number of responders. The average number of respondents is 44%. Highest response rate has been reported in Para-clinical subjects which was 48%.

The response rate of Pre-clinical and Clinical subjects was 39% and 14% respectively. 77% of Preclinical, 76% of Para-clinical and 95% of Clinical students have agreed that the curriculum is adequate.

Student satisfaction towards the recently added parameters are included in Table 1

Parameter	Department A	Department B	
	(%)	(%)	
Self-directed learning	68	80	
Collaborative learning	70	73	
Creative and critical thinking	68	70	
Lifelong learning	70	67	
Teamwork	72	70	

Table 1: Recent Parameters Included to the Course Evaluation and the Rate of Student Satisfaction

Students rated the difficulty of the examinations as shown in Table 2.

Component	Pre-clinical (%)			Para-clinical (%)			Clinical (%)		
	Difficult	Average	Easy	Difficult	Average	Easy	Difficult	Average	Easy
True/False	17	83	0	20	77	8	55	43	3
SBA	13	87	0	20	78	10	58	42	0
OSPE	13	87	0	27	78	10	3	97	0
SEQ/Essay	-	-	-	32	61	10	-	-	-
Long and	-	-	-	-	-	-	10	87	3
Short Cases									

Table 2: Difficulty Level of Examination Components

Majority (96%) of the students agreed that the co-ordination and facilities of the respective departments were satisfactory. With regards to adequate prior noticing of assessments 80% agreed that the examinations were scheduled and informed well ahead. Further, 85% agreed that adequate prior noticing was given regarding teaching activities.

Updating the relevant lecture notes, increasing the number of skill demonstrations, giving model answers to structured essay questions, standardizing viva to ensure the uniformity in assessing the students, uploading the lectures and examination schedules to Learning Management System beforehand are among the steps taken by the departments in response to students' feedbacks given in the course evaluation.

Conclusion

Acceptable response rate according to the literature is 50% and in Para-clinical departments 48% of students have responded. Although response rate of Pre-clinical and Clinical subjects was 39% and

14% respectively, there were some important suggestions. The areas which need improvements were identified through feedback from the students and departments implemented the measures to improve the coursers.

References

- Abrahams M. B., & Friedman C. P. (1996). Preclinical course-evaluation methods at U.S. and Canadian medical schools, *Academic Medicine*, 71(4).
- Goodman, J., Anson, R. & Belcheir, M. (2015). The effect of incentives and other instructor-driven strategies to increase online student evaluation response rates. Assessment & Evaluation in Higher Education, 40(7)
- Schiekirka S., Feufel M. A., Herrmann-Lingen C., & Raupach T. (2015), Evaluation in medical education: A topical review of target parameters, data collection tools and confounding factors. *German medical science*, 13: Doc15. https://doi.org/10.3205/000219

Models/Concepts/Proposals

Implementation of teaching excellence model and measuring teaching performance: Case of Department of Finance in University of Kelaniya, Sri Lanka

S. S. Weligamage^{*}, R. Abeyesekera, W. G. I. D. Premarathne, & P. A. S. D. Perera

Department of Finance, Faculty of Commerce and Management Studies, University of Kelaniya. Sri Lanka

*Corresponding Author: <u>susima@kln.ac.lk</u>

Background

Quality assurance models play major roles in improving quality of educational services including the teaching quality and final focus of quality assurance models is to identify the appropriate performance measurement indicators in different aspects. Yorke (1998) considered performance indicators as standard components of the language of accountability in higher education. Hence, monitoring and assessing teaching performance, moving towards greater accountability and thereby making improvements had become as key requirements for higher education (Maheu, 1995; Alexander, 2000; Behn, 2003). In a successful organization, performance is measured by the improvements of services quality experienced by the customers as well as by the results delivered to other stakeholders. Dunkin (1992, as cited in Richardson, 2005) highlighted the purposes of collecting students' evaluation of teaching to provide diagnostic feedback to teachers about the effectiveness of their teaching and feedback information can be used as a measurement of teaching effectiveness to be used in administrative decision making. But the usage of those information and lack of communication of feedback can be taken as weak points in this process. At the same time, excellence in teaching should evaluate from different aspects of integrated and coherent academic practice (Harland, 2016; Zou et al., 2020). In order find a better solution, Department of Finance, introduced and implemented the Teaching Excellence Model to measure the teaching performance of existing staff members.

The main objectives of implementation of this award are to motivate the staff members, enhance the quality of the programmes offered by the Department of Finance, University of Kelaniya, to recognize and reward excellent teaching, to raise the esteem for teaching and to use the student feedback for administrative purposes.

Methodology

Based on the quality assurance requirement, student feedbacks via questionnaires, targeting different aspects were collected by Sri Lankan universities. Three stakeholders involved in the evaluation process such as students, course evaluation members nominated by the Department, and Head of the

Department based on the predesigned questions. The evaluation done by yearly basis covering all the years such as year 1, 2, 3, 4, and computed separately for each semester using below evaluation model.



Figure 1: Teaching Excellence Award Model (Source: Constructed by Authors)

As per the comprehensive model presented in Figure 1, the teacher will be evaluated by student in three perspectives (A). The teaching effectiveness (A1) and teaching learning technology, lecture notes, and course materials (A2) will be evaluated using a form prescribed by Faculty. And in the overall student assessment (A3), students are required to select or name the teacher they mostly like/best or most outstanding. Then the head of Department (B) assesses the overall performance covering the areas such as assessments and results issue, question paper preparation, marking papers, results issue, and overall course performance. Thereafter the final evaluation will be done by course evaluation committee members who have been appointed at Department Meeting (C) and they should carry out the evaluation on the form prescribed by Department Committee. Further, the committee should assess all the course units and lectures comparatively on teaching innovation, quality of course materials, assessment methods and achieving of intended learning outcomes of the course unit etc.

Results

Already implemented proposed model in year 2020 and 2021.

			Maalaa	Teacher	Teacher	Teacher	Teacher
		Evaluation	Marks	Α	В	С	D
	A1	Teaching Evaluation	30	26.04	25.97	27.56	25.80
	A2	Learning Resources Scale	20	17.21	17.16	18.15	16.83
	A3	Overall Student Assessment	30	30.00	20.00	30.00	30.00
	р	Course Performance by Head of the	10				
	D	Department		8.00	8.00	8.00	8.00
	C Course Moderator Evaluation		10	9.00	9.00	7.50	7.00
		Total	100	90.25	80.13	91.21	87.63
Sc 90 60	Score Card: 80-89.99 - Very Good 70-79.99 - Good 60-69.99 - Adequate Below 60 - Need Improvement						

Figure 02: Proposed teaching excellence award model for year 2021. (Source: Constructed by Authors)

In year 2020, 18 teachers were evaluated, and 2 teachers only score the marks more than 90% (Excellent) and 2 were in the area of more than 80% (Very Good). Same process was carried out for the year 2021 and similar results were found. Therefore, one of the main objectives of implementation of this award is to recognize and reward excellent teaching and to raise esteem for teaching achieved through this exercise and can be used as one of the best practices in quality assurance aspects.

At the same time, A3 is the main deciding factor of identifying the best out of the best and allocation is 30% from the student feedback. Reliability and validity of those information were checked through the analysis stage using different analysis modes and getting multiple feedback from the same group. Other than the teaching excellence evaluation, individual score cards were created using the results and identified each teachers' improvement requirements using the same exercise. For this evaluation only A1 and A2 criteria were included and based on the analysis only one teacher scored more than 90% (Excellent) in that category (excluding the teachers included in the teaching excellent award).

This information can be used by faculty members to improve and maintain high level of quality of their teaching. Further, clear goals and standards can be set to improve the teaching process. Low level of satisfaction in some areas of feedback reflects that the academic staff should go through the individual items to identify the student level of satisfaction in each question and should identify the weaknesses within the teaching process.

Expected Outcome

This study has been conducted with the purposes of mentioned objectives and following expected outcomes have been achieved:

- Identified relevant performance indicators for measuring teaching quality and other important aspects based on stakeholders' feedback.
- Solutions for weaknesses identified by the quality assurance team on students' feedback aspects such as lack of formal mechanism to obtain students' feedback, non-availability of evidence for analyzing students' feedback qualitatively and quantitatively.
- Solutions for weaknesses were identified by the quality assurance team on teaching performance evaluation aspect.
- Identified a mechanism for academic staff members to decide the improvement requirement within the programme, based on students' satisfaction and to identify and compare the level of students' satisfaction with each identified aspects.
- Proved pathway to identify quantitative answers at the teacher level based on assessments and teaching quality

References

- Alexander, F. K. (2000). The changing face of accountability: Monitoring and assessing institutional performance in higher education. *The Journal of Higher Education*, *71*(4), 411-431.
- Behn, R. D. (2003). Why measure performance? Different purposes required different measures. *Public Administration Review*, 63(5), 586-606.
- Harland, T. (2016), Teaching to enhance research. Higher Education Research and Development, 35(3), 461-472.
- Richardson, J. T. E. (2005). Instruments for obtaining students feedback: a review of the literature, *Assessment and Evaluation in Higher Education*, *30*(4), 387-415.
- Yorke, M. (1998). Performance indicators relating to students development: Can they be trusted?. *Quality in Higher Education*, *4*(1), 45-61.
- Zou T. X. P., Harfitt, G., Carless, D., & Chiu, C. S. T. (2020). Conceptions of excellent teaching: a Phenomenographic study of winners of awards for teaching excellence, *Higer Education Research and Development*, 41(2), 577-592.

Models/Concepts/Proposals

Introduction of a competency-based evaluation framework to assess clinical skills in undergraduates of BSc (Hons) in speech and hearing sciences in audiology

L. D. Ileperuma*, & M. D. K. de Silva

Department of Disability Studies, Faculty of Medicine, University of Kelaniya, Sri Lanka. *Corresponding author: dinukshi13@kln.ac.lk

Background

Implementation of Competency-Based Curricula (CBC) and the use of valid and reliable methods in assessing clinical competence have taken the attention of medical educationalists in the last few decades. This system is known to promote the acquisition of knowledge and the development of necessary skills and attitudes for practising in relevant fields to meet the demands in the labour market (Santos, 2011).

Audiology is a multidimensional field involving carrying out evidence-based and client/family-centred audiological practices, health promotion and wellbeing through appropriate communication and collaborations, lifelong learning, maintenance of ethical and professional behaviour, and advocacy. Audiology education programmes are offered at varying levels according to the requirements and resources available in different countries. In Sri Lanka, holders of the certificate of diploma issued by the Ministry of Health and graduates of the BSc (Hons) in Speech and Hearing Sciences in Audiology offered by the University of Kelaniya work as audiology technicians and audiologists, respectively in public and private audiology settings. The BSc (Hons) degree programme consists of four years of full-time study with a total of 120 credits on par with the Sri Lanka Qualification Framework (SLQF) level 6.

The graduate profile of Audiology graduates is based on the three cardinal areas; (1) Audiologist as a clinician, (2) Audiologist as a researcher, and (3) Audiologist as a professional, all of which are compatible with the SLQF level 6 learning outcomes and level descriptors. The general competencies of the programme include knowledge, clinical skills, application, interpersonal skills, community health engagement and health promotion, evidence-based practice, professional ethics and integrity, and reflective practice.

The curriculum includes theoretical modules and clinical practica across the four years. In the curriculum implemented from 2008- 2015, the clinical practica consisted of 21 credits contributing to 945 hours. These included clinical teaching, observations, supervised sessions, documentation, and

independent work. The assessment of practica consisted of a set of summative examinations; Objective Structured Clinical Examination (OSCE), portfolio, case presentation, and *viva voce* (Table 1).

		Clinical practicum					
	Year	1	2	3	4		
	Credits	2 credits	3 credits	4 credits	12 credits		
	(Supervised	(90 hrs)	(135 hrs)	(180 hours)	(540 hrs)		
Previous	hours)						
	Aggaggmant	OSCE*,	OSCE*	OSCE*	OSCE*		
	Assessment	Portfolio	Portfolio	Portfolio	Case		
	methous		Viva	Viva	conference		
	Credits/	2 credits	4 credits	4 credits	18 credits		
	Supervised	(100 hrs)	(200 hrs)	(200 hours)	(900 hrs)		
	hours						
Revised		Summative	Summative	Summative	Summative		
		assessment:	assessment:	assessment:	assessment:		
		OSCE*	OSCE*	OSCE*	OSCE*, Case		
					conference		
	Assessment	Continuous	Continuous	Continuous	Continuous		
	methods	assessment:	assessment:	assessment:	assessment:		
		ACC*,	ACC*,	ACC*,	ACC*,		
		Clinical Diary,	Clinical diary,	Clinical diary,	Clinical Diary		
		Workbook	Workbook	Workbook			

Table 1: Distribution of Assessment Methods of Clinical Practica Across the Years

OSCE* (Objective Structured Clinical Examination), ACC* (Assessment of Clinical Competence)

With the introduction of CBC in 2016, the focus of the examinations was shifted to *assessment for learning*. Emphasis was given to formative feedback through direct observation and providing an environment for learning and assessment to foster active participation in learning while assessing their readiness to progress.

Methodology

Competency-based evaluation

To choose the most appropriate assessment method(s), the instruments developed for the purpose of clinical assessments were reviewed by module committees. Based on the characteristics of the tool, such as relevance, validity, ability to cover multiple elements, acceptability of stakeholders, impact on education, and cost-effectiveness (Hager, 1993), the most appropriate assessment tools were introduced (Table 1).

Although the psychometric properties of the OSCEs are questionable, assessment through OSCE was retained, as it is a highly recommended approach to assess performance in medical and paramedical

fields (Walsh, Bailey & Koren, 2009). Portfolios were intended to capture learning over time through documenting clinical experiences and self-reflection. However, a considerable rate of plagiarism was observed in portfolios, turning down its intended outcome. Hence, clinical diary and workbook were introduced as an alternative formative assessment. These two methods are intended to reflect the application of audiological processes and the clinical decisions made.

Due to the holistic nature of the competencies, a rubric with skill competencies was developed referring to the Growth Mindset model by Dweck (2006). The rating scale, "Assessment of Clinical Competence" (ACC) consists of competencies expected from a student which were categorised into seven broad areas in audiology; (1) Assessment, (2) Assessment interpretation, (3) Treatment planning, (4) Treatment delivery, (5) Professional conduct, (6) Communication, and (7) Learning & reflection. These areas were established based on the audiology competency standards of several countries. The ACC incorporated six competency levels (Table 2). The expected competency level for each year and each competency was explicitly specified. Students refer to the competency levels and prepare a list of objectives to track their progress. Clinical supervisors provide weekly/ monthly feedback to encourage the students to reach the expected competency level. The average score on the rating scale at the end of the clinical placement is considered for the grade of that particular practicum.

Annual workshops have been conducted for the clinical supervisors on the implementation of the ACC to ensure smooth supervision. Any variation in examiner rating is controlled by these workshops that include training on observation and documentation of learner behaviours, and competencies being assessed. The outcome of the new assessment framework was assessed through individual feedback obtained by interviewing clinical supervisors and students. Braun and Clarke's (2006) six step approach in thematic analysis was used as the method for data analysis.

Competency level	Descriptor				
Independent (5)	Students are able to perform the majority of their work independently and				
	competently with well-developed and consistent skills, without guidance				
	and/or consultation unless presented with situations/clients not previously				
	experienced.				
Competent (4)	Students are expected to function effectively, take initiative, work without				
	directives, and make changes when appropriate, within the consultative				
	style of supervision whereby the supervisor provides minimal supportive				
	cues.				
Consolidating (3)	Students are expected to function effectively and display the target				
	competency/skill but requires further development with a low to moderate				
	degree of collaborative supervision dependent on the complexity of the				
	client, workplace environment and student's previous experience.				

 Table 2: Competency Level Descriptors of Assessment of Clinical Competence

Competency level	Descriptor			
Emerging (2)	Students are skilful in parts of behaviour and are able to perform competently when the supervisor provides frequent guidance, demonstration or modelling in combination with collaborative student participation.			
Novice (1)	Students demonstrate basic clinical skills but the supervisor actively provides a high level of specific direction for the student to alter performance and make changes in clinical behaviour.			
Not evident (0)	Not observed/ not applicable/unable to assess.			

Results

Feedback on assessment methods of clinical practica indicated the following. Clinical supervisors stated that students were motivated to complete the clinical diary and workbook as the guidelines and expectations were clearer. Having clear and common ratings from all clinicians was favourable to students. All areas of clinical audiology were adequately covered through the ACC. They mentioned that the Likert scale for rating each component was user-friendly. They suggested the introduction of an e-version of the form instead of hardcopies and making the form concise. Feedback from the students highlighted that the assessments were adequate and effective, and feedback given at the end of each day/ week was beneficial to improve their clinical skills. They suggested that mock exams for OSCEs be provided and requested the continuous assessment format to remain.

Outcome

Implementing a CBC is a challenge in speech and hearing sciences as clinical supervision is mandatory and involves a considerable amount of documentation. However, this method hopes to enhance student engagement and provide a meaningful learning experience to warrant that audiology graduates are prepared to meet the professional requirements and the accountability to the public. Further research into the outcomes of the CBC is necessary to ensure best practice.

References

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77–101. https://doi.org/10.1191/1478088706qp063oa

Dweck, C. S. (2006). Mindset: The new psychology of success. Random House.

Hager, P. (1993). Principles of competency-based assessment. In Testing times: A national conference on assessment for competency-based training. Retrieved July 2, 2022, from <u>https://vital.voced</u> .edu.au/vital/access/services/Download/ngv:2390/SOURCE2

- Santos, W. S. (2011). The Competency-Based Medical Curriculum. *Revisata Brasileirade Educação Médica*, 35(1), 86–92.
- Walsh, M., Bailey, P. H., & Koren, I. (2009). Objective structured clinical evaluation of clinical competence: an integrative review. *Journal of advanced nursing*, 65(8), 1584-1595. https://doi.org/10.1111/j.1365-2648.2009.05054.x.

Panel of Reviewers

Senior Prof. L. P. Jayatissa	Dr. T. R. Wijesundara
Senior Prof. P. B. Perera	Dr. (Mrs) D. M. K. N. Senevirathna
Senior Prof. (Mrs) C. M. Navarathna	Dr. M. K. Wanniarachchige
Senior Prof. L. A. L. W. Jayasekara	Dr. Chathura Senevirathna
Prof. (Mrs) H. S. C. Perera	Dr. S. G. S. Samaraweera
Prof. P. A. P. Samantha Kumara	Dr. A. C. Karunarathna
Prof. K. H. M. A. Deepananda	Dr. (Mrs) G. K. H. Ganewatta
Prof. T. S. L. W. Gunawardana	Dr. (Mrs) J. Ramawickrama
Dr. M. B. F. Mafasiya	Dr. H. L. Jayatileke
Dr. B. L. Galhena	Dr. K. D. Prasangika
Dr. K .A. Sunanda Kodikara-Archchi	Dr. A. W. L. P Thilan
Dr. A. W. M. M. Atapattu	

Organizing Committees of RUQAS 2022

Technical Committee

- Dr. Menaka Fernando (Chair)
- Dr. Chathura Senevirathna
- Mr. C. C. De S. Jayamuni
- Mr. S. H. Uyanahewage
- Mr. G. G. G. Shanaka
- Mr. H. A. Asanka Chamara

Invitation Committee

- Dr. J. A. P. Bodhika (Chair)
- Dr. V. H. P. Vitharana
- Mr. Nishantha Gamage
- Mr. I. R. Priyantha

Protocol and Session Arrangement Committee

- Prof. Subashi De Silva (Chair)
- Dr. Nirmala Rathnayake
- Dr. Hemamali Ganewatta
- Mr. I. R. Priyantha

 $\ensuremath{\mathbb{C}}$ Proceedings of the Ruhuna Quality Assurance Sessions 2022 (RUQAS 2022) 21^{st} September 2022

Centre for Quality Assurance University of Ruhuna Matara

JAL

URAN

SERVICE

