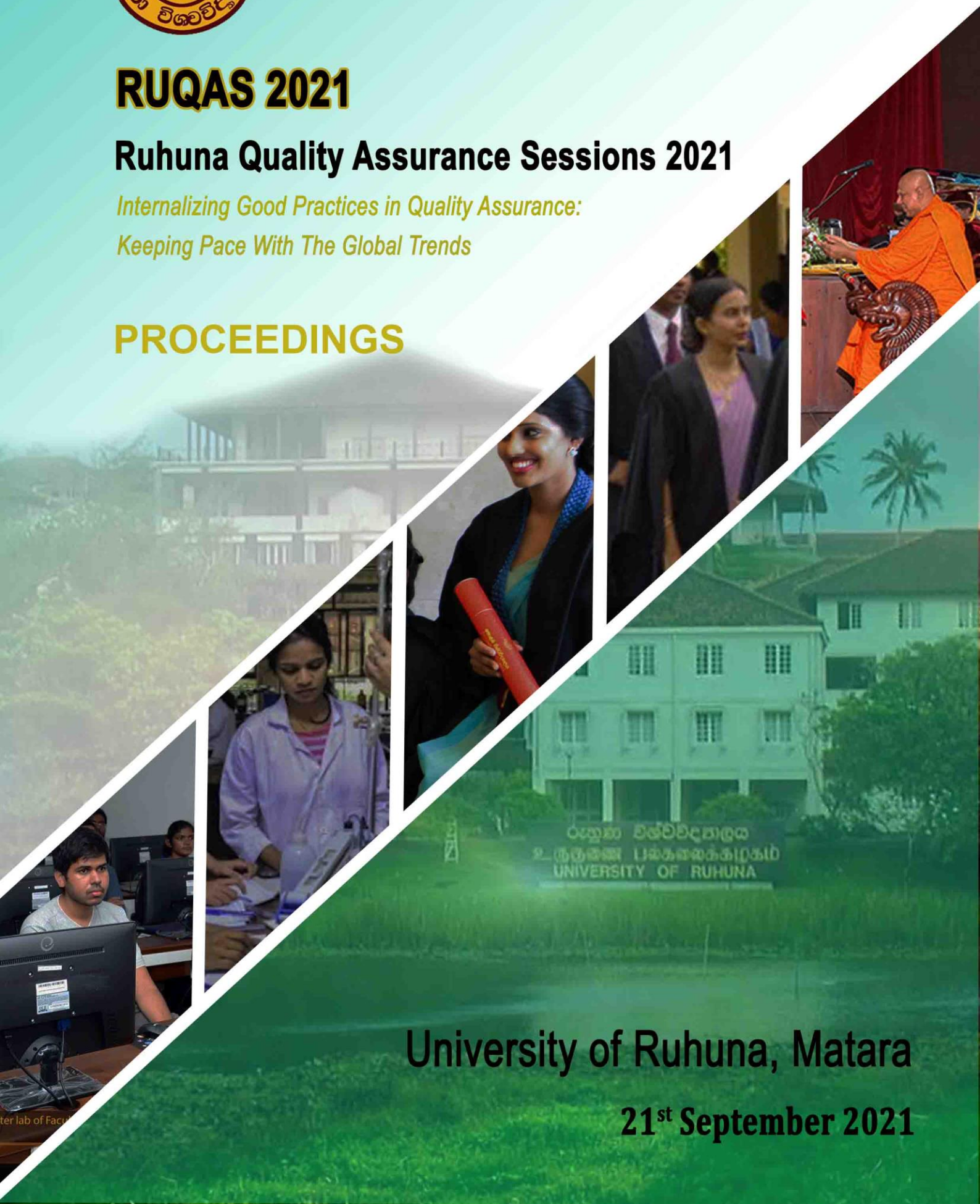
RUQAS 2021

Ruhuna Quality Assurance Sessions 2021

Internalizing Good Practices in Quality Assurance:
Keeping Pace With The Global Trends

PROCEEDINGS



University of Ruhuna, Matara

21st September 2021

RUQAS 2021

Proceedings

Ruhuna Quality Assurance Sessions 2021

Internalizing Good Practices in Quality Assurance: Keeping Pace with the Global Trends

21st September 2021

Centre for Quality Assurance

University of Ruhuna

Matara

Sri Lanka

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ABBREVIATIONS

BRITAE	Building Resilience in Tropical Agro-Ecosystems
CDC	Curriculum Development Committee
CQA	Centre for Quality Assurance
DCEU	Distance and Continuing Education Unit
EI	Emotional Intelligence
EQ	Emotional Quotient
EC	Extension Courses
EDP	External Degree Programmes
EU	European Union
GP	Good Practices
IQAC	Internal Quality Assurance Cell
LMS	Learning Management System
MC	Models/Concepts
MIS	Management Information System
ODL	Open and Distance Learning
PR	Programme Review
QA	Quality Assurance
QAC	Quality Assurance Council
RP	Research Papers
RUQAS	Ruhuna Quality Assurance Sessions
SSS	Student Satisfaction Surveys
SLQF	Sri Lanka Qualifications Framework
UGC	University Grants Commission

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Preface

Quality assurance in higher education can be defined as "A planned and systematic review process of an institution or programme to determine whether or not acceptable standards of education, scholarship and infrastructure are being met, maintained and enhanced". An efficient and effective high quality higher education system which is internationally recognized and a well-established national quality culture are essential for socio-economic development in any country. Furthermore, a sustainable quality assurance programme enhances employment opportunities, improves the education and training of future employees, harnesses future leaders, facilitates the learning environment, and enriches the academic and intellectual landscape at any higher education institution. The development of quality assurance is a continuous process and, therefore, continuity of strategies, actions and efforts is vital for maintaining the quality in the higher education sector in Sri Lanka. Therefore, any higher education institution needs to foster and nurture the quality culture within their entity with a view to enhancing the recognition of its teaching, research and outreach programmes both locally and internationally.

The University of Ruhuna, having accepted the need for ensuring quality assurance in the higher education sector in Sri Lanka, took measures to establish the Internal Quality Assurance Unit (IQAU) in tandem with establishment of the Quality Assurance and Accreditation Council (QAAC) of UGC in 2005. The IQAU was upgraded and renamed as Centre for Quality Assurance (CQA) in the year 2019 and the vision of the Centre is "To assure the highest quality in all study programmes of the University that is respected worldwide". Currently, the CQA is functioning under the directions and guidance of the Quality Assurance Council (QAC) of the University Grants Commission (UGC) and is responsible for promoting and inculcating the quality culture in the spheres of teaching, research and outreach activities with a view to uplifting the University of Ruhuna to the international level. The activities of the CQA are supported and implemented by Internal Quality Assurance Cells (IQAC) established at each and every Faculty of the University. Having realized the importance of quality assurance in higher education, the CQA took timely and appropriate measures to organize the Ruhuna Quality Assurance Sessions (RUQAS) as an annual event with the broad objective of providing a common platform for the academics and researchers, attached to various universities and research institutions in the country, to meet together and share their findings in quality assurance. The RUQAS 2021 appears to be the first conference of its kind organized in the entire national university system in Sri Lanka under the general theme "Internalizing Good Practices in Quality Assurance: Keeping Pace with the Global Trends". The editorial board, having adopted a rigorous double-blind review process, selected a total of 21 technical presentations on quality assurance (oral) and included in the technical programme of the RUQAS 2021 under three categories, namely, Research Papers/Reviews/Extended

Abstracts on quality assurance (RP), Models/Concepts/Proposals for Quality Assurance (MC) and Good Practices in Quality Assurance (GP). The technical papers and presentations address a wide range of disciplines in quality assurance including student satisfaction in higher education, employer perception on quality assurance, novel models and concepts for quality assurance, impact of contemporary issues on higher education and research collaborations, effect of increased resources and services on productivity of employees etc.

The editorial board wishes to express its sincere thanks and profound gratitude to all the authors and co-authors for showing an unprecedented enthusiasm in submitting the papers for the first symposium of RUQAS 2021 organized by the CQA of the University of Ruhuna. Further, the significant and indispensable contribution of all the reviewers to the cumbersome review process is hereby gratefully acknowledged. Moreover, we hope that the dissemination of the research findings as well as novel concepts in quality assurance published in the Proceedings will generate new ideas and strategies for uplifting the higher education sector in Sri Lanka and elsewhere. Finally, the editorial board of the RUQAS 2021 would like to take this opportunity to congratulate all the presenters and authors and wish them the best of luck with their future work in relation quality assurance.

Editorial Board
Ruhuna Quality Assurance Sessions 2021 (RUQAS 2021)
University of Ruhuna
Sri Lanka.
21st September 2021

Message from the Vice-Chancellor, University of Ruhuna

It gives me great pleasure to send this message to the first Quality Assurance sessions of the University of Ruhuna. CQA has moved forward by leaps and bounds during the last two years under the able leadership of the former Director Prof. Mahinda Atapattu who just left office on 31.08.2021. The CQA attendance has improved to near 100% for all the members including top management staff. It has handled a large workload and a number of very complex issues in the recent past including the "online examination policy with proctoring" recently.

Quality encompasses a wide range of aspects. I would focus on one aspect namely the gaps in the higher education process. There are gaps in the profile of state university graduates and the industry needs for employability. These gaps are in knowledge, skills and attitudes among graduates which should be addressed by curriculum changes and reforms. These requirements keep changing with time while the curricula of state universities change slowly. Further, the needs of the society for economic growth change with time. Best example to learn this is, Covid-19 and the non-reformed health system for decades. Hence, some educational programmes become more philosophical rather than pragmatic in that context. Certainly, the civil society, corporate sector and industry, political authorities and almost all academics understand this along with a section of the student population. However, whether state universities have been able to adopt these needs at the required pace is questionable.

As a Vice Chancellor, I believe that all state universities could adopt these changes at the required pace if not for the threatening forces challenging "every change." This aspect must be addressed by the Quality Assurance process in addition to all the other "issues in quality" to catch up with post Covid-19 economic revival in Sri Lanka. This should be our short and intermediate term target in education. This is equivalent to the post WWII situation in the world which many of us have never seen but heard or read only. This could be achieved by what had been done at Faculty and Departmental level in UOR by involving student members in the QA processes: a democratization of the system. In addition, we have established IQA cells for Library, DCEU, administration, finance branch, recently. In my opinion, there is no unit without adequate representation at CQA in the University of Ruhuna now.

QA sessions help in this process by giving opportunities to present findings of their work, come under scrutiny of the peers in that process and improve further. One good step for us is to establish an "INCIDENT REPORTING SYSTEM" in quality issues which does not lead to disciplinary or punitive action unless it is unacceptable or serious and not compatible with the level of expected performance dependent on the seniority, experience and maturity of the personnel involved. That should be one direction for the UOR to move within the next few months.

The QA sessions of the CQA, UOR is a brainchild of Prof. Mahinda Atapattu. He was supported by all the members of the CQA and the organizing committee. I wish to thank all of them for organizing this event in such a colourful way under difficult conditions.

Senior Professor Sujeewa Amarasena
Vice-Chancellor
University of Ruhuna
Matara
Sri Lanka

Message from the Chairman, University Grants Commission

It gives me great pleasure to send this message to the Inaugural Ruhuna University Quality Assurance Sessions. The education sector globally has been faced with tremendous pressure to sustain itself in the Covid 19 pandemic. The sector has been able to cope with transformation to online platforms although with different levels of capability depending on the development stage of the country. Sri Lanka has done well compared to our South Asian neighbours and traditional quality assurance process has been challenged under these conditions. Quality assurance in higher education has been made a global concern with the active involvement of non-state sector and lateral and vertical movement of students. This is as a result of the commercialization and globalization of higher education given the increase in demand for it during the pandemic. These pose new challenges to the quality assurance process. Sri Lanka's higher education system coped well with the higher demand this year with a 30% increase in the total number of admissions to the state universities. University of Ruhuna committed to the maximum increase in number up to 1500 (15%) of the total increased intake. I wish express to my sincere appreciation to the entire University of Ruhuna team in their efforts to facilitate this increased demand.

University Grants Commission places a high emphasis on quality assurance. During the last decade, Quality Assurance Council of the University Grants Commission in collaboration with the Internal Quality Assurance Units (subsequently converted in to Senate approved Centres for Quality Assurance) in universities have taken numerous efforts to establish a strong QA process within our university system. The driving forces for improvement in quality have been the Internalization of best practices and regular internal and external review. Programme and Institutional Reviews are now well established within our system as external reviews. The Ruhuna Quality Assurance Sessions, on one hand indicate the establishment of a strong quality culture within the Ruhuna University. On the other hand, it provides a platform to all quality conscious parties to learn from each other, share experiences and generate new ideas, thus serving as an internal review forum. It is also encouraging to note that both academics and administrative staff take part in the sessions and involvement of students in the future sessions should be encouraged.

I take this opportunity to congratulate the Ruhuna University for introducing a best practice into our University System, conducting many academic programmes online while successfully combating the challenges following the large intakes of new students. I wish those who participate in this event make the best out of the deliberations during the Sessions.

Senior Professor Sampath Amaratunge
Chairman, University Grants Commission

Message from the Director, Quality Assurance Council (QAC), UGC

As a nation, we have achieved significant progress in our basic education indicators compared to many other countries, particularly in the South-Asian region. The very reason is that education is recognized as a fundamental right by the Constitution of Sri Lanka, ensuring the right to access to education. Education can aid to equip the young with necessary social, cultural, and civic competencies. Importantly, higher education and its knowledge contribution are intricately linked with economic growth of a country. In examining the contribution of higher education expansion to economic growth, "mismatch" between demand and supply, "diversity" of higher education and employment opportunities, rise in graduate unemployment, a growing trend of "key qualifications", and globalization of the graduate labour markets are common issues in many countries.

Expansion of higher education towards professions that are in demand and increasing opportunities for young people to benefit from an expansion constitutes an important role of the government. Unfortunately, Sri Lanka is placed relatively low in the relationship between knowledge contribution to development of the economy. Sri Lanka is in a great need to develop its intellectual human capital to compete in a knowledge-intensive global economy. It is particularly important that Sri Lanka recognizes the importance of science, technology, and innovation to propel Sri Lanka towards realizing its full economic potential.

Quality Assurance in higher education is a concept borrowed from the manufacturing industry, that is meant to mitigate the negative effects that can accompany the massification of Higher Education that is inevitably required to support the economic growth and development of any country. Quality Assurance serves three main purposes that are improvement: 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 governments want them to do.

The concept of Quality Assurance was introduced to our state university system about two decades ago. Quality Assurance of all state universities by QAC of UGC is facilitating the transformation of its higher education system to meet the demands of the future and thereby render an immense service to the people of this country. The Standing Committee on Quality Assurance of UGC was established in December 2004 and QA Council of the UGC was established in September 2005. Now, each of the 17 universities under the UGC has a well-established central body led by a Director for Quality Assurance, who works together with cells in each faculty or institute to promote and support Quality Assurance activities.

In such an endeavour the commitment extended by University of Ruhuna is commendable. The University has shown its interest to comply with the national Quality Assurance framework better than any other university. It is reflected further by organizing an academic session on Quality Assurance which will help to review the experience gathered in the past and apply them better to ensure the quality of its education. I extend my best wishes to this influential academic event!

Senior Professor Tilak P. D. Gamage
Director, Quality Assurance Council (QAC)
University Grants Commission

Keynote Speech of the Ruhuna Quality Assurance Sessions 2021

Internalizing Good Practices in Quality Assurance

Professor Colin N. Peiris

Emeritus Professor, University of Peradeniya and Director, Academic Development and Quality Assurance, Sri Lanka Institute of Information Technology, Malabe

Introduction

Quality of higher education is one of the most critical issues since the outcomes of higher education will have a significant impact on the economic and social development of the country and it has to become a priority area for both higher education institutions and the policy makers.

The concept of quality in higher education varies depending on the stakeholder opinion in perspective. This represents a considerable challenge for the development of a comprehensive and credible quality assurance system for higher education. Students may define quality in terms of their experience about the facilities and the performance of the faculty. Parents may describe it according to the employability of their children upon completion of the degrees. The faculty may evaluate the staff development activities conducted. The employers consider the competence of the graduates joining their organizations and for the institutions it may mean the quality and quantity of academic and research outputs. Although challenging, it might be a worthwhile exercise to try to get to know all the stakeholders' views and perceptions of the quality of higher education and fulfil the expectations of all the stakeholders (Tobi and Duque, 2015). The ultimate goal is to achieve "quality education" as "fitness for the purpose".

Quality Assurance in Higher Education

Quality assurance was introduced to Sri Lankan universities as an initiative of the Committee of Vice-Chancellors and Directors (CVCD) in 2001. As a result, internal quality assurance units were established in the public universities in 2005 which coordinated the activities with the Quality Assurance and Accreditation Council (QAAC) for Higher Education (Internal Quality assurance Manual for Sri Lankan Universities, 2013). With this establishment quality assurance in higher education in Sri Lanka became a major component of university teaching. With the availability of World Bank funding, the public higher education sector was able to launch many activities related to quality assurance as it has been a major requirement at the university level over the past 10 years.

Concern in quality assurance in non-state institutes is much more than in state universities as students must pay for their education. Moreover, quality matters much more in moulding students into

employable graduates. The Quality of the education and the financial viability are the two most governing aspects of the long-term sustainability of a non-state institute. If proper quality standards are maintained continuously, then, there is demand for its programmes making it possible for the non-state institute to sustain itself in the long run. To maintain this status institutes should have impeccable track records with respect to governance and quality assurance.

Internalization of Quality Assurance in Higher Education

Internalization of quality assurance is the self-regulation of the academic community in semi-autonomous institutional environments. Internalization is a more advanced way of developing the requirements of a quality standard and, therefore, it is the key for quality management system success. The internalization process produces a set of routines and procedures (both tacit and explicit) for the internal operations which can function as "a unique factor which could not be easily imitated by other sectors which simply focus on pursuing certification".

One factor that has led to greater focus on quality assurance in higher education is massification and the rapidly rising student enrolments, along with the rising public costs and budgetary pressures on national governments. The transition from elite to mass higher education also means a greater economic and social importance of the higher education sector. In line with the "value for money" approach, the need for greater scrutiny over the money spent has emerged as part of quality assurance measures to ensure efficiency and accountability.

Today, apply internalized quality to the task on which you are working. Tomorrow, the overall quality of your activity will be improved. In time, as more of your colleagues embrace the concept of internalized quality, your organization will experience an overall improvement in quality. Institutions need to invest in strong quality culture, aimed at their institutional mission.

Internal Quality Assurance (IQA) and Good Practices

Internal Quality Assurance has a greater impact on the actual quality of teaching and learning as many of the good practices are carried out by many sectors by themselves. Peer observation and student's feedback have a greater impact in improving teaching skills of academic staff. An IQA policy approach to quality assurance is a responsibility for monitoring quality in higher education in the hands of the university academics themselves rather than a team comprising external personnel. The system of IQA would bring the staff members of the same institute together and share and learn from each other. Also, it would create a sense of responsibility and a new process approach throughout the institution.

Research Papers/Reviews/Extended Abstracts

on

Quality Assurance (RP)

RP1

How the Covid-19 Outbreak Affects the Quality of International Research Collaborations: A Case Study of EU ERASMUS+ Funded Building Resilience in Tropical Agro-ecosystems (BRITAE) Project

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Abstract

The Covid-19 pandemic has significantly affected the formal procedures for international research collaborations and other interpersonal knowledge sharing practices. Covid-19 restrictions are largely affecting the way of conducting the usual project and research activities. The advice of health authorities is to find an alternative method for these activities. In the present study, a case study approach was applied to investigate the impacts of the Covid-19 pandemic on international research collaborations. The BRITAE (Building Resilience in Tropical Agro-ecosystems) is an EU Erasmus+ program of the European Union Co-funded project which is being carried out in collaboration with five Sri Lankan universities and four foreign universities. The project activities were severely disrupted from initially planned activities due to the pandemic situation all over the world. Apart from the kick-off meeting, all other steering committee meetings were conducted via the Zoom platform. For the first year of the project, an annual self-assessment exercise was carried out in March 2021 which aimed to identify any shortcomings in project performance in order to rectify them. Further, participant evaluation of project steering committee meetings was carried out to ensure that the meetings taking place in the course of the project were conducted appropriately and effectively. The present study attempts to outline the extent of impacts of the Covid-19 pandemic on the project activities and to ascertain whether there is a need for modification of activities due to the conditions generated by the pandemic. According to the results, three areas were highlighted for improvements such as active participation of all participants, more disciplined use of technology by participants, and satisfaction of follow-up tasks and time management. The study concluded that, although the project proceeds well in most areas despite the Covid-19 pandemic, more attention should be given to the effectiveness of project activities as a consequence of the quality reduction of activities held via online platforms.

***Keywords*:** Quality Assurance, International Research Collaborations, Covid-19, Online Events

Introduction

The Covid-19 pandemic affected every sphere of human society with unprecedented impacts. Even at the moment, morbidity and mortality of the pandemic are increasing without a clear sign of a decline. Besides health and economic sectors, the scientific community has been vastly affected by the negative impacts of the pandemic due to the closure of universities and research centres and containment measures such as travel restrictions. Most of the scientific events including international conferences, training programs, and workshops were cancelled or postponed with restricted international travel affecting international research collaborations in particular (Subramanya et al., 2020). The Covid-19 pandemic and subsequent travel restrictions affected field research work followed by travel for meetings and funding mostly (Ramvilas et al., 2021). Such implications have highlighted the dire need for identifying the exact impacts of the Covid-19 on these collaborative research projects and implementing necessary mitigation measures.

The BRITAE (Building Resilience in Tropical Agro-Ecosystems) project funded by the EU Erasmus+ grant scheme connects research communities of 9 universities from 4 countries [Sri Lanka (the University of Ruhuna, University of Colombo, University of Moratuwa, University of Sri Jayewardenepura, Sabaragamuwa University of Sri Lanka), United Kingdom (the University of Huddersfield, University of Central Lancashire), Estonia (Tallinn University of Technology), and Lithuania (Vilnius Gediminas Technical University)] intending to develop curricula modules on building resilience in the tropical Agro-ecosystem in Sri Lankan universities to increase their capacity to continually modernize, enhance the quality and relevance of education of students to the global market needs and to ensure international cooperation in line with needs for solutions relevant to food security and climate change (BRITAE, 2020). This 3-year project with seven work packages was kicked off in February 2020 and progressed amidst the Covid-19 pandemic. Like various other collaborative research projects worldwide, BRITAE also has been experiencing challenges induced by the pandemic such as travel restrictions, bans on gatherings, etc. The annual progress monitoring process was carried out in March 2021 with the aim of systematic and monitoring quality assurance of the overall project. Based on findings from the progress monitoring, this paper aims at outlining the level of impacts of the Covid-19 pandemic on the overall project progress and what areas need improvements in order to incorporate conditions created by the pandemic.

Methodology

The work plan of the BRITAE project consists of seven Work Packages; 1. Preparation for BRITAE activities, 2. Development of Innovative and adaptive Curricular on Agro-ecosystem resilience-related food security and climate change, 3. Development of Smart Agro-ecosystem based Resilience Center for teaching, learning, research and development (SARC), 4. Development and implementation of Master's degree Programme on Building Resilience in Tropical Agro-ecosystems, 5. Systematic and Monitoring Quality Assurance, 6. Dissemination and Exploitation of Results, 7. Project management and Work Package 5.designated as Systematic and Monitoring Quality Assurance aims at ensuring systematic monitoring and evaluation of the project's activities to maximize the likelihood that the project will deliver its planned outputs and achieve its intended outcomes. In order to achieve this target, several methods of monitoring the progress were planned in the proposal of the work plan. Within the first year of the project, two evaluation methods were used for the purpose of monitoring the project quality.

Annual Self-Evaluation Exercise

An evaluation questionnaire was used to conduct the self-evaluation, which addressed general project success indicators based on previous experience of similar projects. The project coordinator and the lead partners for the quality work package agreed on the criteria and questionnaire format. This questionnaire consisted of four main areas named; 1). Overall Project Objectives, 2). Planning, Coordination, and Management of the Project, 3). Implementation of the Project, 4). Project Results and Outputs. Under each area mentioned above, there were several sub-indicators and project members were asked to rate each of them on a scale with five levels (poor, needs improvement, meets expectations, above average, excellent). In addition, as part of project progress reporting, lead partners for each work package were asked to report their progress against the project work plan and the qualitative and quantitative performance indicators which appear in the Project Quality Plan. The quality plan was developed by the quality management team and all the other partners have agreed on the indicators relevant to their work packages. Under each of these two methods, comments of project members were obtained at the end.

Evaluation by Consortium Meeting Participants

The BRITAE Consortium meeting participant evaluation form was created to capture both quantitative and qualitative indications of meeting quality. This evaluation is aimed at ensuring that meetings taking place in the course of the project are conducted appropriately and effectively. Evaluation forms were distributed to all participants at the end of each consortium meeting. For the kick-off meeting in

February 2020, this was done using a sheet of paper physically and, for later meetings it was an online questionnaire since 2nd and 3rd consortium meetings were held online due to international and domestic travel restrictions. Table 1 shows the form used in evaluating the quality of consortium meetings.

Table 1: Evaluation form used in consortium meetings

No.	Evaluation Indicator	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
01	I was notified of the meeting sufficiently in advance.					
02	The meeting purpose and objectives were clear.					
03	The meeting agenda was appropriate and clear.					
04	The meeting time and place were convenient.					
05	The meeting format (face-to-face / online) was suitable.					
06	The meeting started and ended on time.					
07	I was satisfied with the way decisions were made.					
08	The meeting was well-attended.					
09	All meeting participants were actively involved.					
10	We used our meeting time effectively.					
11	I was satisfied with the assignment of follow-up tasks.					
12	The meeting atmosphere was friendly and constructive.					
What aspects of this meeting were particularly good?						
What aspects of this meeting could have been better?						
Do you have any suggestions or additional comments about this meeting?						

Results, Discussion, and Conclusions

According to the responses received for the self-evaluation, the median assessment for all the criteria is either “meets expectations” or “above average”. Further, only two project objectives have received

more than three responses under the criteria “needs improvement”. Moreover, the balance between project monitoring and control activities and the administrative burden on partners is rated under “needs improvement” according to results. However, this criterion did not receive a particularly low score in the average performance assessment, suggesting that the view that it needs improvement is not widely held. Furthermore, there was a response that assesses the project performance is poor with regard to the effectiveness of project events and activities. From further comments, it was understood that this assessment relates to the quality reduction in events as a consequence of all events being online due to the Covid-19 pandemic. Annual project reporting from each partner shows that all work packages have commenced, substantial progress has been achieved, have been completed, or are proceeding accordingly. Therefore, amidst the impacts of the Covid-19 pandemic, the project can be considered to be proceeding well in most of the areas. The absence of studies in laboratories and fieldwork can be a possible reason for low impact of the Covid-19 pandemic on project activities.

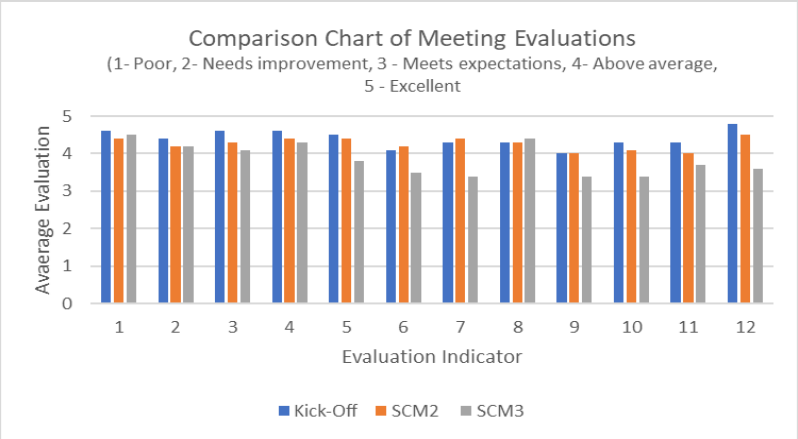

Figure 1: Comparison chart of meeting evaluations

Except for the kick-off meeting, the 2nd and 3rdsteering committee meetings of the project were held using online platforms. Figure 1 shows a comparison of the average evaluations from each of the 3 meetings held during the first year. Further, it depicts that evaluation levels for most of the criteria have decreased with time. Furthermore, results from the participants’ evaluations show that quality indicators of 2nd and 3rd steering committee meetings were not highly evaluated as much as the kick-off meeting. The decline in participants’ satisfaction from the 2nd to 3rd meeting as shown in Figure 1 was reflected by comments from participants as well. For instance, participants pointed out that having to do increasingly complex and interconnected project operations solely online is a major reason for the growing dissatisfaction. Furthermore, reduction in participants’ tolerance for technical glitches and sub-optimal use of online communication platforms have been highlighted as a severe problem since several issues arose during online meetings such as unclear sounds, repetition of contents, and disturbances caused by unmuted microphones. According to the results, three areas were highlighted

that need to be improved; active participation of all participants, more disciplined use of the technology by participants, satisfaction of follow-up tasks (though this has improved in the 3rd meeting), and time management.

Results of the quality monitoring processes suggest that though the project proceeds well, there are several areas that need improvements. There should be more focus on the effectiveness of project events and activities which are held through online platforms. It is necessary to identify both advantages and disadvantages of these virtual events and adapt their structure to incorporate the limitations of virtual events. Through more structured approaches in online events, time management can be improved. Furthermore, the disciplined use of technology by participants should be improved since disturbances can reduce the quality of these events and cause frustration among other participants. Based on the comments obtained from participants' evaluations, some suggestions can be made such as sharing materials in advance and displaying the agenda between presentations to improve the active participation in discussions. Since the project does not consist of work in laboratories and the field it is fair to conclude that the impacts of the pandemic have affected mostly workshops and meetings which do not have a great impact on the progress of the project.

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RP2

Perception of Undergraduates on Service Quality of Higher Education in Sri Lanka

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Abstract

A significant restructuring in higher education services has been processed in both European and Asian contexts recently. As a developing country, Sri Lanka needs much more to move towards an economic development within the nation thus ensuring service quality of higher education is required to enhance the competitiveness within the educational sector. Hence, the study focuses on identifying the students' perception towards the service quality in higher education as they are the primary customers who utilize the higher education service. An online survey was conducted for the randomly selected 311 undergraduates of the Faculty of Agriculture, University of Ruhuna, Sri Lanka.The study covers six dimensions of HEdPERF scale; academic, non-academic, reputation, access, understanding, and program issues that measure the service quality of higher education. All the statements given to the respondents' perception regarding the quality of higher education are proven as valid and significant by the Wilcoxon Signed Rank Test (p=0.000). Accordingly, students believe that quality service can be obtained from the academic and non-academic staff of the faculty, and they consider that the hostel facilities, academic facilities, ability of producing employable graduates, and academic programs of the faculty are reputable. Moreover, the faculty has good access and interestingly, it possesses well-organized academic programs with a flexible syllabus, proper structure, sound orientation program and variety of specialization programs. The faculty maintains a good understanding of the counselling service, health service, ideal campus layout/location, and quick response to students' requests for assistance. The results reveal that the undergraduates' overall satisfaction level of the service quality provided by the faculty is valid and significant (p=0.000). Interestingly, the majority (46.9%) of the undergraduates are satisfied with the overall service quality while 32.8% have a strong satisfaction.14.1% of the sample shows a neutral approach while 4.5% and 1.6% have dissatisfaction and a strong dissatisfaction respectively. Hence, the research findings will be beneficial for the respective higher education providers to offer satisfactory services for the Sri Lankan students.

Keywords: Faculty of Agriculture, Higher Education, Perception, Service Quality, Undergraduates

Introduction

Quality higher education plays a vital role in re-sharpening the minds of citizens so as to encourage them to make a significant commitment towards national development. By fortifying the quality of higher education services, the students can secure applicable knowledge and skills required for the sound economic process and acquire global competitiveness. Accordingly, quality service in higher education can have a positive impact on a nations' economic development (Asiyai, 2020).Thus, it has become an emerging requirement for any nation to make a great concern about the quality of higher education. Providers (financial providers),employees, users of products (students), and the users of outputs (employers) are the four main stakeholders who are involved in the higher educational services (Schindler et al., 2015). Hence the perception towards the quality of service is likely to differ from each standpoint.

Even though identifying students' expectations and perception of quality is crucial for higher education development, a relatively low priority has been given to their concerns (Senthikumar and Arulraj, 2009). Accordingly, the present study aims to explore the undergraduates' perception towards the service quality of higher education in Sri Lanka as they are the primary customers who utilize the higher education service. Service quality of higher education is one of the variables that increase the number of satisfied students and thus enhance the students' loyalty and it is defined as the difference between the students' expectation and their perceptions regarding actual delivery (O'Neill and Palmer, 2004). According to the HEdPERF scale described by Abdullah (2006), the undergraduates' perception of service quality in higher education is measured in terms of academic, non-academic, reputation, access, understanding, and program issues. Hence, the study focuses to identify the undergraduate perception towards these parameters and to examine the satisfaction level of undergraduates towards the service quality of higher education. The research findings provide a significant insight for the Sri Lankan higher education providers to identify the gaps and provide satisfactory service as it is a new and emerging requirement in the Sri Lankan education sector.

Methodology

The primary data were collected by the administration of a structured questionnaire which was developed in the English language. The initial questionnaire was prepared with the help of a literature survey. Students' service experiences are complex and distinct from those of consumers in other service industries. As a result, it is widely agreed that industry-specific service measures should be used to assess the quality of each industry's services. Accordingly, the HEdPERF scale proposed by Abdullah (2006), six dimensions (academic, non-academic, reputation, access, understanding, and program issues) were considered in this study to measure the service quality of higher education. The

questionnaire consisted of three sections to assess the demographic features of the undergraduates, perception of undergraduates towards the service quality of higher education and the overall rating of the satisfaction level of the service. Service quality items were presented as statements and measured using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree).The reliability of the questionnaire was measured using Cronbach's alpha and it has given 0.7 Cronbach's alpha value for each questionnaire item.

The undergraduates of the Faculty of Agriculture, University of Ruhuna were selected as the population of the study and 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 260 first year students, 216 second year students, 243 third year students, and 143 fourth year students. An online survey was designed for the data collection and the link was sent to 311 students of the faculty who were selected by the simple 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 it was disabled after 14 days of circulation. Secondary data were collected from research paper articles, journals, newspaper articles, and other websites etc. The data were analyzed using SPSS statistical software and descriptive statistics as well as inferential statistics were used while the Wilcoxon Signed Rank test was mainly utilized as the analytical tool in this study.

Results, Discussion, and Conclusions

Considering the gender, the majority were females (80.7%) whereas males accounted only for 19.3% of the sample. Taking the degree program into account, 59.5% comprised undergraduates who are following BSc Agricultural Resource Management and Technology degree program while 26.7% were from BSc Agribusiness Management degree program and the lowest number of respondents was from BSc Green Technology degree program (13.8%).

Table 1 shows the results of the Wilcoxon Signed Rank Test obtained from responses concerning each statement on the perception of the undergraduates towardsthe service quality of higher education within the faculty of Agriculture, University of Ruhuna, Sri Lanka. Service quality is measured using six dimensions proposed by Abdullah (2006) in the HEdPERF scale. According to the results, undergraduates believe the service of academic and non-academic staff of the faculty are valid and significant (p=0.000). Students significantly consider that the hostel facilities, academic facilities, ability of producing employable graduates and academic programs of the faculty are reputable (p=0.000). Moreover, the results show that all the statements given to the respondents regarding the access, program issues and understanding are proven as valid and significant (p=0.000). Accordingly,

the faculty has good access and interestingly, it owns well-organized academic programs with a flexible syllabus, proper structure, sound orientation program and variety of specialization programs. Furthermore, the faculty has a good understanding of the counselling service, health service, ideal campus layout/location and quick response to students' requests for assistance.

The undergraduates' overall satisfaction level of the service quality provided by the faculty of Agriculture, University of Ruhuna is valid and significant (p=0.000). The majority (46.9%) of the undergraduates are satisfied with the overall service quality of the faculty while 32.8% of the respondents have a strong satisfaction. A neutral approach to the overall service quality of the faculty was evident in 14%. Out of all the respondents, 4.5% are not satisfied with the overall quality of service provided by the faculty and 1.6% of respondents showed their strong dissatisfaction regarding this.

Table 1: Perception of undergraduates on the service quality of higher education

	Statements	**Test Value**	**P-Value**
Academic Aspects	Knowledge in the course content of the overall academic staff is satisfactory.	14.871	0.000
	The academic staff is caring and courteous towards students.	14.552	0.000
	Academics have a sincere interest in solving academic-related problems.	14.232	0.000
	The academic staff shows good communication skills.	14.802	0.000
Non-Academic Aspects	The non-academic staff shows a sincere interest in solving faculty problems.	14.104	0.000
	Non-academic staff is efficient/prompt in dealing with complaints.	13.711	0.000
	The non-academic staff has caring and individualized attention towards faculty circumstances.	13.123	0.000
	Non-academic staff show a positive attitude towards their service	13.978	0.000
Reputation	Hostel facilities and equipment given are satisfactory.	8.826	0.000
	Academic facilities are satisfactory.	11.691	0.000
	University provides easily employable graduates.	12.244	0.000

Table 1: Perception of undergraduates on the service quality of higher education

	Statements	**Test Value**	**P-Value**
	Academic programs provided by the faculty are reputable.	13.922	0.000
Access	The faculty administration can be easily contacted by telephone.	11.173	0.000
	The information provided by the faculty is confidential.	13.013	0.000
	Faculty provide equal treatment and respect for all.	12.946	0.000
	Use students' feedback for further faculty improvements.	12.540	0.000
Program Issues	Three academic programs are well organized.	14.353	0.000
	There is a flexible syllabus and proper structure within the degree programs.	14.101	0.000
	Provide a sound orientation program.	13.257	0.000
	Provide a variety of specialization programs.	14.626	0.000
Understanding	There is a sound counselling service	13.172	0.000
	There is a satisfactory health service.	9.232	0.000
	There is an ideal campus layout/location.	12.988	0.000
	There is a quick response to students' requests for assistance.	11.593	0.000

*Significance level = 0.05

Accordingly, the study reveals that the undergraduates of the faculty of Agriculture, University of Ruhuna show a good perception regarding the service quality in terms of academic, non-academic, reputation, access, understanding, and program issues of higher education. Furthermore, they show a higher level of satisfaction regarding the overall quality of the services provided by higher education in Sri Lanka.

Higher education providers must understand students' expectations and perceptions of what constitutes service quality in order to provide high-quality services to entice them and provide for their needs. Accordingly, the research findings will be beneficial for the respective higher education providers to equip the higher education service in a well-coordinated manner regarding academic, non-academic,

reputation, access, understanding, and program issues to offer a satisfactory service for the Sri Lankan students. Nevertheless, a selected sample from the Faculty of Agriculture, University Ruhuna was used in this investigation. Thus, other samples in the Sri Lankan context may provide empirical evidence on service quality perceptions of higher education, affecting the generalizability of the results.

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RP3

Perception of Employers on Quality Assurance in University Education in Sri Lanka

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Abstract

The worldwide growing attention on quality assurance in higher education induces universities to restructure their institutional objectives and programs to cater to the demands of the stakeholders. Employers are keen on the quality of higher education to recruit good quality graduates. However, it seems that the incompatibility in the employers' expectations and the quality of graduates, the graduate unemployment has become a severe problem in Sri Lanka during the last few decades. Therefore, the objective of the present study is to identify the employers' expectations on knowledge, attitudes, and skills of graduates while examining the employers' perception in developing a quality assurance system in higher education in Sri Lanka. A Google form-based questionnaire was prepared to collect primary data. The pre-tested questionnaire was sent to the employers who are recruiting (n=30) as well as not recruiting (n=30) graduates from the Faculty of Agriculture, University of Ruhuna, using the snowball sampling technique. Descriptive statistical tools and the Wilcoxon Signed-Rank test occupied as the main statistical tools for the data analysis. Concerning the performance and skills of hired graduates, 52% of the employers were satisfied with the job related knowledge that graduates possess. Moreover, 30% were strongly satisfied with the skills of the graduates employed in their respective companies while 26% were satisfied with the skills of the graduates. However, regarding performance level, only 33% of employers were satisfied with the existing performance level while 40% were satisfied with the accuracy/precision of the work. Wilcoxon Sign Rank Test results revealed that employers are dissatisfied regarding the current quality assurance system giving insights of improving an effective improved quality assurance system (Test value=1.795; P =0.0173). Based on the responses of the companies not employing graduates attached to the faculty, lack of practical experience (27%), lack of interview facing skills (17%) and better performance of graduates from other universities (13%) were the main reasons highlighted by the respondents. Among all respondents (n=30), the majority (60%) mentioned the quality of higher education as developing innovative and independent thinkers, having a knowledgeable and up to date staff, good links to industry, good university facilities, library, career guidance, and maintaining quality teaching materials and methods of teaching. 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.

***Keywords*:** Employers' Perception, Quality Assurance, University Education, Satisfaction

Introduction

Quality Assurance in higher education refers to an ongoing and continuous process of evaluating the existing status of the higher education system, quality of education institutes, and education programs (Vlăsceanu et al., 2007). The worldwide growing attention to quality assurance in higher education induces universities to restructure their institutional objectives and programs to cater their stakeholders' demands. Universities have understood that their long-term survival within the sector is mainly dependent upon the quality of the services they provide (Tsinidou et al., 2010). Institutional practices and monitoring of policies and methods to improve the quality of their education provision can be identified as internal quality assurance while external quality assurance refers to the institutional policies and practices whereby the quality of higher education institutions and programs are assured (Shamsudin et al., 2009).

The four main stakeholder groups in the higher education system are providers (educational institutes), users (students), users of outputs (employers), and employees (Schidler et al, 2015). Employers are keen on quality in higher education to hire good quality graduates. Their expectations regarding quality graduates lie in the comprehensive skills and knowledge which graduates possess to develop competencies to match with industry demands.

The failure of higher education institutes to build high-quality graduates negatively affects the graduate's employability and the relationship between employers and higher education institutes (Dicker et al, 2019). However, incompetent university graduates have become a common complaint in the labour industry. The situation in Sri Lanka is also similar to the world context. In Sri Lanka, during the last two decades, increasing concern has been expressed about the quality of university education. Therefore, developing high-quality graduates is of utmost importance to mitigate the unemployed graduate issue. For that purpose, it is necessary to identify and understand the perception of students and employers on quality assurance in higher education. However, within the Sri Lankan context, existing literature only provides the students' perception of quality assurance in higher education. Therefore, the present study aims to develop an effective quality assurance system in higher education to minimize the gap between the employers' expectations and experience regarding the performance of graduates. Thereby, the research findings will contribute to existing literature of quality assurance in higher education by providing employers perceptions and it will induce an effective implementation

and development of quality assurance system within the Sri Lankan higher education system. Therefore, the objective of the present study is to identify the employers' expectation on knowledge, attitudes and skills of the graduates while examining the perception of employers in developing quality assurance systems in higher education in Sri Lanka.

Methodology

The present study was designed to conduct as a pre-tested questionnaire survey. Employers who engaged in occupations in the Agricultural sector were considered as the targeted population. A Google form-based questionnaire was prepared to collect primary data in English medium and it was sent to the employers who are hiring as well as not hiring graduates from Faculty of Agriculture, University of Ruhuna, using snowball sampling technique. The initial questionnaire was prepared with the assistance of previous literature and pre-testing was done with 5 respondents and their feedback was considered in designing the final questionnaire. The reliability of the questionnaire was measured using Cronbach's alpha (Taber, 2018) and it has given 0.7 Cronbach's alpha value for each questionnaire item.

Accordingly, the questionnaire was designed to assess the perception of employers towards the development of quality assurance framework to enhance the employability of Agricultural graduates. A five-point Likert scale was used to identify their views on the existing quality assurance framework available in the university system in Sri Lanka. The link was disabled after 7 days of circulation (from 1st of July 2021-7th July 2021) and 30 responses were obtained. IBM SPSS version 25 software was mainly utilized for analytical purposes. Primary data were analyzed by using descriptive and inferential statistical methods such as the Wilcoxon Signed Rank test. The Wilcoxon Signed Rank test was selected to measure the significance of statements provided by the respondents.

Results and Discussion

Demographic Profile

There were 65% male and 35% female respondents. Thirty five percent respondents belonged to the 45-55 age category. Sixty two percent have stated degree level as their highest educational level while 35% have studied up to postgraduate level. The majority, 57% of the participants, represented the private sector. Seventy percent of the respondents are engaged in managerial level occupations and 35% of officials are engaged in their current job for about 10-15 years.

Perception of Employers on Hiring Graduates and Graduate Performance Level in Achieving Company Targets

The majority of (69%) the employers stated that they hire graduates from the Faculty of Agriculture, University of Ruhuna. Regarding the graduates' performance and skills, 52% of employers were satisfied with the knowledge graduates possess while 30% of employers were satisfied strongly with the skills of graduates they hired. Regarding performance level, 33% were satisfied with the current performance level. Respondents (40%) were satisfied with the accuracy/precision of the work shown by hired graduates from the Faculty of Agriculture, University of Ruhuna. Table 1 depicts the Wilcoxon Sign Rank Test results regarding the employers' satisfaction on existing and potential quality assurance systems in higher education in Sri Lanka. Interestingly, employers have shown dissatisfaction regarding the existing system giving insights of improving an effective improved quality assurance system. Furthermore, they were dissatisfied with the performance of graduates in achieving company targets particularly. However, all the other statements were proven valid as well as significant about developing a quality assurance system in higher education within the country.

Table 1:Overall satisfaction of employers regarding the quality assurance system in Sri Lanka

No	Statement	Mean	Test Value	P Value
1.	Overall satisfaction regarding the quality assurance system in Sri Lanka	0	1.795	0.073
2.	Overall satisfaction regarding the performance of graduates in achieving company targets	1	4.146	0.000
3.	Developing a quality assurance system in higher education is essential to produce outstanding and marketable graduates in Sri Lanka	1	3.910	0.000
4.	Developing an effective quality assurance system enhances the performance levels of graduates in every aspect	1.5	3.996	0.000
5.	Quality assurance system is a timely decision to minimize the gap between company's expected performance and actual performance of graduates	1	3.969	0.000
6.	Quality assurance system in higher education produces globally competitive, marketable employees	2	3.911	0.000
7.	Developing a quality assurance system promotes production of industry-oriented graduates.	1	4.096	0.000

Perception of Agricultural Industries on Developing a Quality Assurance Mechanism in University Education

The majority of respondents perceive the quality of higher education mainly as developing innovative and independent thinkers, knowledgeable and up-to-date staff, good links to industry, good university facilities, library, career guidance, and quality teaching materials and methods of teaching used. These findings embellish the findings of Gunawardena (2017), where he aroused the requirement of educational institutions with the ability to discover new knowledge, to develop innovative applications of these discoveries, and to transfer them into the marketplace through entrepreneurial activities. Furthermore, he highlighted the need of focusing more on research and publications rather than becoming only teaching universities.

According to the past literature, training/experience is a highly demanded factor in the job market especially, in the private sector. Further, there is a high demand for additional competencies such as IT skills, leadership qualities, analytical ability, teamwork and interpersonal relations along with a degree (Ariyawansa, 2008). The present study identified the reasons for not hiring graduates including lack of practical experience, lack of interview-facing skills and better performance of graduates from other universities.

Conclusions

The findings of this study conclude that the employers in the Agricultural sector are not satisfied with the existing quality assurance system in higher education. Furthermore, they show the requirement of improving job knowledge, performance level, and accuracy and precision when performing in the job. Lack of practical experience, lack of interview facing skills, and better performance of graduates from other universities were highlighted as the main reasons for not recruiting graduates. 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 employers' perception regarding graduates of the Faculty of Agriculture, the University of Ruhuna only. Therefore, it will be beneficial to consider employers' perceptions regarding graduates in Sri Lanka as a whole to develop a feasible quality assurance system in higher education.

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RP4

Student Satisfaction Surveys Conducted Among Medical Undergraduates After the Final MBBS Examination in 2020 and 2021, Faculty of Medicine, University of Ruhuna

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Abstract

Evaluating the satisfaction level among medical undergraduates is an essential step in ensuring the quality of medical education. The Faculty of Medicine (FoM), University of Ruhuna (UoR) conducts student satisfaction surveys (SSS) annually, aiming to improve the quality of teaching, learning environment, and facilities of the faculty.

Two SSSs were conducted through a Google Form in 2020 and 2021 for the students who completed the final MBBS examination before the results were released. Students were given a week to respond anonymously. The questionnaire prepared by referencing international SSS was reviewed and approved by the Internal Quality Assurance Cell. It was a self-administered questionnaire consisting of twenty-one questions on the quality of teaching, the learning environment, and the facilities of the faculty. The responses were analyzed using the Mann-Whitney U test in SPSS version 28.0.

The response rates in 2020 and 2021 were, 46/179 (25.7%) and 67/161 (41.6%), respectively ($p=0.002$). In both years, the majority of the respondents were females (2020-78.3%, 2021-73.1%). Out of 21 questions, only 3 questions showed a significant difference between the responses received in the two years. The results indicated that students were satisfied with the quality of teaching. Students rated all the aspects inquired on learning environment above average. The satisfaction of the students was high with facilities of library, IT, hostel, Deans' office, and student affairs unit. The response towards the quality of the canteen was not satisfactory. However, it has improved in 2021 compared to 2020 ($p<0.000$). Reporting of harassment faced during the undergraduate period was improved in 2021 compared to 2020 ($p=0.8$).

The information obtained through this survey is useful in identifying the deficiencies for corrective measures.

Keywords: Personal Satisfaction; Students, Medical; Surveys and Questionnaires

Introduction

Medical education worldwide is undergoing dramatic changes in pedagogical reforms recently. Therefore, continuous gauging of the system is an essential step in ensuring that the quality of the medical program is uplifted and maintained, along with the level of satisfaction among medical students with regards to their academic activities (Jayawickramarajah, 2017). One of the many invaluable sources for assessing the quality of the medical program is student satisfaction surveys (SSS). Seeking satisfaction feedback from graduates at the exit point from the program is a reasonable approach used in evaluating the quality of medical programs.

The Faculty of Medicine (FoM), University of Ruhuna (UoR), established in 1980, has come a long way to become a pioneer in medical education in Sri Lanka by providing academic, research, and outreach services. Assisting and preparing the medical students to become ethical, skilful and knowledgeable professionals while ensuring their overall satisfaction about the course has always been one of the main focuses of the faculty. The faculty started conducting SSS annually from 2020 for the final year students who faced the final MBBS examination and before releasing the results. The objectives of conducting the SSS are, to monitor students' learning experience and satisfaction annually to ensure that learning experiences are effective and help in achieving the desired outcomes, to regularly and systematically monitor to assess the students' satisfaction with the study program and the support services, and use the information gathered for continuous improvement of learning provision and support services.

Methodology

A draft questionnaire was prepared by referencing SSS of several international universities. The draft was then improved to include items related to the quality of teaching, quality of the learning environment, and quality of the facilities of the faculty. The questionnaire was reviewed and approval was obtained from the Internal Quality Assurance Cell (IQAC) and the Faculty Board of FoM.

The questionnaire consisted of 3 main categories: quality of teaching, quality of learning environment, and quality of facilities of the faculty. Students' satisfaction on those categories was assessed through 3-point Likert, 5-point Likert, Yes/No questions as well as open-ended questions.

The approved self-administered SSS questionnaire was converted into a Google Form and the link was sent through the WhatsApp Platform to the students of the 36th batch in 2020 and 37th batch in 2021, after the final MBBS examination, before the results were released. The students were given a week to respond anonymously.

The responses given by the two batches to a particular question in the two years were analyzed using the Mann-Whitney U test in Statistical Package for the Social Sciences (SPSS) version 28.0. Statistical significance is considered as when $p<0.05$.

Results

In 2020, out of 179 students in the 36th batch, 46 (25.69%) responded to the survey. In 2021, 67 (41.62%) students out of 161 students in the 37th batch responded to the survey. There is a significant improvement of the rate of response of the students ($p=0.002$). In both years, the majority of the respondents were female (2020; 78.3%, 2021; 73.1%).

Seven questions out of twelve that inquired about the quality of teaching showed the satisfaction of students towards the good side. These include, whether learning objectives and timetables are given before the commencement of the course, lecturers begin and end lectures/ tutorials and practical classes on time, lecturers are well-prepared for sessions, lecturers encourage students to ask questions and participate, lecturers answer questions clearly, lecturers know the subject matter and receive adequate help from the departments to pass the repeat exam. The responses received for the rest of the questions were within average (Table 1).

About the quality of the learning environment, students who had disabilities strongly agreed that they received adequate support from the faculty to continue their learning activities during the period of disability. Further students strongly agreed that they had a safe environment within the faculty premises. However, the responses are within average on mentoring service, support of administrative issues, sports activities, and activities of the student bodies (Table 1).

The responses from the students are towards the good side on the facilities of library, IT unit, Deans' office, student affairs unit, and hostel. Students had concerns on study areas, common rooms, and canteen facilities. The rest of the facilities that were inquired, received an average response. (Table 1)

Out of 21 questions, only 3 questions showed a statistically significant difference between the responses given in the two years (Table 1).

In addition to the above, eight open-ended questions were included in the questionnaire. Six students responded that some departments in the faculty do not provide learning objectives and timetables on time.

Table 1: Undergraduates' perception on the service quality of higher education

	Statements	**Test Value**	**P-Value**
Academic Aspects	Knowledge in the course content of the overall academic staff is satisfactory.	14.871	0.000
	The academic staff is caring and courteous towards students.	14.552	0.000
	Academics have a sincere interest in solving academic-related problems.	14.232	0.000
	The academic staff shows good communication skills.	14.802	0.000
Non-Academic Aspects	The non-academic staff shows a sincere interest in solving faculty problems.	14.104	0.000
	Non-academic staff is efficient/prompt in dealing with complaints.	13.711	0.000
	The non-academic staff has caring and individualized attention towards faculty circumstances.	13.123	0.000
	Non-academic staff show a positive attitude towards their service	13.978	0.000
Reputation	Hostel facilities and equipment given are satisfactory.	8.826	0.000
	Academic facilities are satisfactory.	11.691	0.000
	University provides easily employable graduates.	12.244	0.000
	Academic programs provided by the faculty are reputable.	13.922	0.000
Access	The faculty administration can be easily contacted by telephone.	11.173	0.000
	The information provided by the faculty is confidential.	13.013	0.000
	Faculty provide equal treatment and respect for all.	12.946	0.000

Table 1: Undergraduates' perception on the service quality of higher education

	Statements	**Test Value**	**P-Value**
	Use students' feedback for further faculty improvements.	12.540	0.000
Program Issues	Three academic programs are well organized.	14.353	0.000
	There is a flexible syllabus and proper structure within the degree programs.	14.101	0.000
	Provide a sound orientation program.	13.257	0.000
	Provide a variety of specialization programs.	14.626	0.000
Understanding	There is a sound counselling service	13.172	0.000
	There is a satisfactory health service.	9.232	0.000
	There is an ideal campus layout/location.	12.988	0.000
	There is a quick response to students' requests for assistance.	11.593	0.000

*3-point Likert; 1– Good; 2- Average; 3- Poor

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

As suggestions to improve blended learning, students requested to improve the internet facilities within the faculty and stated that online teaching has been more effective compared to in-hall lectures. To improve the quality of teaching, students suggested conducting more online lectures and tutorials, revising and updating the curriculum, introducing a module system, encouraging students to ask more questions, explaining more clearly the difficult concepts during lectures and having more clinically oriented and question-based teaching. Students suggested that the provision of lecture notes and constant attention and help from the mentors would improve the quality of learning in students with disabilities.

Regarding harassment during undergraduate life, 5 students in 2020 and 4 students in 2021 stated that consultants and hospital staff harassed them during clinical appointments, while in 2021, 3 students and 2 students stated that they got harassed by security officers and batch mates, respectively.

Students suggested allocating a place for group discussions, improving facilities of the senior common room and student rooms at the hospital, reducing the number of students in a clinical group, improving

lecture theatre facilities, and faculty staff being more friendly towards the medical students would improve the quality of the learning environment.

In order to improve the overall quality of the faculty, students suggested improving infrastructure (lecture halls, multimedia facilities, canteen, students' car park, facilities for sports, common rooms and study areas), activities of student bodies/societies, providing an updated academic calendar informing about the main examinations well ahead and conducting extra classes for repeat students.

Discussion

The SSS was introduced to FoM, UoR in 2020. The response rate increased in 2021. The proportion of females to males is greater than 1 for both batches. Jackson et al. (2001) stated that females are more prone to be engaged in online communication and surveys than males. Tu and Liao (2007) also found that females perceive responding to a survey as behaviour consistent with empathy or emotional closeness, thus leading to a higher survey response rate for females than males. Further, the higher number of females in a batch compared to male students could be another reason for the majority of the respondents being female in the current survey.

According to the results, students were satisfied with most of the facts that inquired on the quality of teaching. However, the satisfaction level was significantly reduced regarding the responsiveness of lecturers to students outside classes in 2021 compared to 2020. It may be related to the difficulties they encountered with the Covid-19 pandemic and limitations to meet their expectations. The majority rated activities of student bodies as average in both years. It may be due to the lack of active involvement of student bodies and restriction of activities related to the prevailing pandemic. In 2020 and 2021, IQAC urged the student bodies to produce their terms of reference, conduct the annual general meetings and appoint new office bearers to reactivate their activities and requested their annual activity plan.

The results indicated a significant difference between the satisfaction levels of students regarding assistance received by the faculty administrative staff in the two years. The students' satisfaction has significantly reduced in 2021 compared to 2020. In a study conducted by Weerasinghe and Fernando (2018) with undergraduates of Ruhuna, Rajarata, Wayamba, and Sabaragamuwa Universities in Sri Lanka, it was concluded that reliability, responsiveness, caring attitude, accuracy, fairness, respect, and cooperation with students during the university period play a vital role in determining students' satisfaction level regarding the administrative staff. This was further supported by Malik et al. (2010) and Elliott and Shin (2002), who found that the above factors, along with impartial treatment to all students, significantly improve the satisfaction levels of undergraduates.

According to the results obtained in both 2020 and 2021, IT facilities, library facilities, dean's office services, hostel facilities and service of the student affairs unit were rated well indicating that students are satisfied with those facilities and services. The satisfaction on study areas, common rooms, and canteen was rated as below average. Among these, the canteen facility was the lowest rated facility in the faculty according to the students' perception. Although it showed a significant improvement with respect to students' satisfaction in 2021 compared to 2020, the majority still rated the quality of the canteen facility as poor. The canteen supplies food and tea at the concessionary rates determined by the tender procedure of the university. Although the prices are affordable, the students found the canteen facility unsatisfactory. In a study conducted by Weerasinghe and Fernando (2018) it was found that facilities such as student cafeterias and social areas work as major determinants of student satisfaction levels at state universities in Sri Lanka. In the current study, as the majority of students are unhappy with the canteen facilities, it needs attention to identify the factors and measures to rectify the deficiencies.

The response rate increased significantly in the latter year compared to the previous year. The IQAC addressed most of the issues brought forward by the students in 2020 while incorporating their suggestions into the system whenever possible. In addition, during the past year, the IQAC has been closely in touch with the students of the said batches, introducing novel approaches of the faculty to them such as an online reporting system for sexual and gender-based violence (SGBV), online academic calendar, etc. Frequent recommendations made to the authority based on students' feedback could have enhanced the students' trust leading to an increased response rate.

The main areas suggested by the students to improve were infrastructure (lecture halls, multimedia facilities, canteen, students' car park, facilities for sports, common rooms and study areas), activities of student bodies/societies, providing an updated academic calendar informing about the main examinations well ahead, and conducting extra classes for repeat students.

As this is a routine survey to identify where the students' satisfaction is not up to the expectations, it would be worth conducting separate surveys in the areas where the students are not happy to recognize the exact reasons why they are not happy. Further, such in-depth studies would facilitate identifying effective remedial measures.

Conclusions

The satisfaction of medical undergraduates in the academic program and the overall experience of undergraduate life is an important factor that indicates the quality of a medical faculty. In order to measure the satisfaction levels of the medical undergraduates, SSS were introduced in 2020 by the

IQAC of the Faculty of Medicine, University of Ruhuna. Through the survey, the strengths and weaknesses in teaching/learning, learning environment and facilities of the faculty were identified. The information obtained through the survey opened an avenue to the IQAC to recommend the relevant authorities to take remedial actions to improve the quality.

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RP5

Impact of Emotional Intelligence on Academic Performance of Health Science Undergraduates: A Systematic Review

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Abstract

Perceiving, using, understanding, and managing our own and others emotions is generally considered as emotional intelligence (EI). EI is a predictor of academic success of university undergraduates and it is also associated with the successful performance of healthcare professionals. It is an important character that should be inculcated among health sciences undergraduates in order to make them more successful in academic performances and help them to achieve professional success. In this systematic review, the impact of EI on academic performance of health sciences undergraduates was evaluated. A systematic search was performed following the PRISMA Statement in MEDLINE and ERIC databases and also by a manual search to identify studies that evaluated the impact of EI on academic performance of nursing, dental and medical undergraduates. We used the search terms "Impact" OR "Effect", "Emotional Intelligence", "Academic performance" and "Health Sciences Undergraduates" (Nursing, Dental and Medical). Original studies which were published in English language till 31st June 2021 were reviewed with the agreement of authors. Search strategy returned136 articles, of them only 23 articles based on original studies met all inclusion criteria. They included seven studies focused on nursing undergraduates, three on dental undergraduates and thirteen on medical undergraduates. EI was found to be linked with the successful academic performance of health sciences undergraduates at either theory or clinical examinations in fourteen studies (60.9 %) (3 nursing, 3 dental and 8 medical). Nine studies (39.1%) (4 nursing, 5 medical) did not find an association between EI and academic performance. A majority (60.9%) of reviewed studies have observed an impact of EI on academic performance of health science undergraduates that was identified in observational studies. Interventional studies in the context are recommended to confirm this association.

Keywords: Academic Performance, Emotional Intelligence, Impact, Health Science Undergraduates, Systematic Review.

Introduction

Emotional intelligence (EI) which is also known as emotional quotient (EQ) is generally described how a person deals with intrapersonal (own) and interpersonal (with others) emotions and maintains such relationships. Mayer and Salovey defined EI as the ability to perceive emotions, to understand emotions and emotional knowledge, and to reflectively regulate emotions (Salovey and Mayer, 1990). A model of EI has been described with four-branches namely perceiving, using, understanding, and managing emotions (Salovey and Grewal, 2005).

Perceiving, using, understanding, and managing emotions (Salovey and Grewal, 2005) of own and others are vital for health care professionals as they are dealing with human beings in an environment with a multitude of stressors (Pau et al., 2007). Higher levels of EI have been shown to be associated with lower levels of stress and effective functioning among health care professionals (Pau et al., 2007).

Since EI is a part of the character development, it cannot be developed soon after the individual becomes a healthcare professional. It should be introduced from childhood and included in the education programmes from primary to tertiary level education. Further, EI is a quality that should be inculcated among health sciences undergraduates at least while they are receiving their foundation education in the university. Health sciences undergraduates are supposed to learn a curriculum with a wide subject content blend with both a theoretical component learnt in classrooms and a clinical component practiced at the real patient environment within a stipulated time period. They undergo training in a highly stressful environment with heavy workload and long hours of training. Furthermore, they have to interact with different personnel including patients, families and different categories of healthcare professionals (Singh et al., 2020). Further, they need to work under the supervision of a group of clinical experts which makes them more stressful. Therefore, dealing with emotions is an important attribute of health sciences undergraduates, especially those in medical, dental and nursing streams, who are involved with direct patient management.

Many studies have shown that EI has a close association with academic success at schools and higher education institutes including universities (Singh et al., 2020). Health sciences undergraduates' evaluations include a theoretical component evaluated with the paper-based examinations and clinical competency evaluated in a real patient environment. Therefore, it can be assumed that well performed academic grades of these two components of health sciences undergraduates might also have a direct relationship with EI.

However, it is uncertain whether EI has a direct impact on the academic success of undergraduates who follow health science streams. Since EI is an important character to be grown among the future health care professionals to provide quality patient care, exploring how EI influences academic performance of them is important. Therefore, in this systematic review, the impact of EI on academic performance of health sciences undergraduates was evaluated.

Methodology

Electronic databases (MEDLINE and ERIC) were searched for studies assessing the impact of EI on academic performance of health sciences undergraduates using the search term "Impact" OR "Effect", "Emotional Intelligence", "Academic performance", "Health Science Undergraduates (Nursing, Dental and Medical)" by one investigator following the PRISMA Statement. A manual search was also performed to find out the bibliographic references of relevant articles and existing reviews. Journal articles published in English language with no restriction of year were included. The articles based on the original studies focused on association/relationship/influence/impact of EI on objectively measured academic performance (overall, theory or clinical/practical) at examinations of nursing, medical and dental undergraduates studying in universities/measured undergraduate performance of final year were considered as the inclusion criteria. Systematic reviews/meta-analysis, general opinions, letters to editors, commentaries, articles published in other languages were excluded. Further, articles based on original studies focused on university undergraduates, however the academic performance evaluated with university entrance qualifications and other measures such as perceived academic or clinical competency, communication skills, and stress management were also excluded. All eligible studies were verified with the other investigators.

The data extracted from the studies were authors; year of publication; country; target population; sample size; tools/methods used to assess EI and academic performance and association/relationship/influence/impact between EI and academic performance (Table 1).

Results

Search Strategy

A total of 136 articles were identified through electronic database searches. Among these studies, duplicates, studies not fulfilling the selection criteria were excluded and finally only 23 articles based on original studies were selected for this review (Figure 1). They included seven studies focused on nursing undergraduates, three on dental undergraduates and thirteen on medical undergraduates (Table 1). Fifteen studies were cross-sectional in design while 05 were longitudinal and 03 were prospective/retrospective studies.None of the studies were interventional. Methods used in the studies and findings of the studies are summarized in Table.

Table 1: Methods Used and Findings of the Studies in the Review (n=23)

No	Author, Year & Country	Study population & Sample size	Study design	EI Scale used	Outcome measurement	Association/Correlation/Influence
Studies focused on nursing undergraduates – Positive association						
1	Fernandez et al., 2012 (Australia)	1st year nursing undergraduates, n=81 (80% females)	Prospective survey	Trait Emotional Intelligence Questionnaire	GPA scores at 6 months course commencement	EI score showed a positive correlation with overall academic performance (β=0.25, p=0.023)
2	Rankin, 2013 (UK)	1st year nursing undergraduates n=178 (168 females)	Longitudinal study	Schutte Self-Report Emotional Intelligence Test	Mean score for all assignments in year 1 and practice performance by clinical assessment tool	EI score showed a positive correlation with overall academic performance (r=0.16, p<0.05) EI score and clinical practice performance were positively correlated (R^2=0.68)
3	Beauvais et al., 2014 (USA)	Nursing undergraduates in all years n=73	Descriptive correlational	Mayer-Salovey-Caruso Emotional Intelligence Test	GPA of all years	Only one branch of EI (perceiving emotions) showed a positive correlation with GPA (r=0.23, p=0.04) However, EI score did not show a significant correlation with overall academic performance (p>0.05)

Table 1: Methods Used and Findings of the Studies in the Review (n=23)

No	Author, Year & Country	Study population & Sample size	Study design	EI Scale used	Outcome measurement	Association/Correlation/Influence
Studies focused on nursing undergraduates – No association						
1	Cheshire et al., 2015 (USA)	1st and 2nd semester nursing undergraduates n=96 (71 females)	Descriptive causal comparative	Mayer–Salovey–Caruso Emotional Intelligence Test	GPA in 2 courses for and final clinical evaluations	EI score showed no significant correlation with either overall academic performance or clinical evaluations ($p>0.05$)
2	Suliman, 2010 (Saudi Arabia)	Nursing undergraduates in all years n=98 (all females)	Cross-sectional	Bar-On emotional quotient inventory	GPA of all years	EI score showed no significant correlation with overall academic performance ($p>0.05$)
3	Por et al., 2011 (UK)	1st year nursing undergraduates, n=130 (117 females)	Prospective correlational	Schutte Self-Report Emotional Intelligence Test	Mean GPA of five modules in year 1	EI score and overall academic performance were not correlated ($p>0.05$).
4	Roso-Bas et al., 2016 (Spain)	3rd year nursing undergraduates n=114	Cross-sectional	Trait Meta-Mood Scale	Ratio of number of academic subjects passed to number of subjects registered last year for year	EI score overall academic performance showed no significant correlation ($p>0.05$)
Studies focused on dental undergraduates – Positive association						
1	Kumar et al., 2016 (India)	Final year dental undergraduates (just passed out from the universities) n=200 (131 females)	Retrospective correlational	Emotional Quotient Self-Assessment Checklist	Low and high performance of final year results	EI score showed a positive correlation with academic performance ($R^2=0.42$, $p<0.05$)

Table 1: Methods Used and Findings of the Studies in the Review (n=23)

No	Author, Year & Country	Study population & Sample size	Study design	EI Scale used	Outcome measurement	Association/Correlation/Influence
2	Partido and Stafford, 2018 (USA)	1st and 2nd year dental hygiene students n=45 (44 females)	Cross-sectional	Emotional quotient self-assessment checklist	Academic and clinical grades and GPA	EI score positively predicts the overall GPA of academic performance (R^2=0.35, p<0.001) EI score positively predicts the clinical performance grades (R^2=0.33, p<0.001) The EI subsets of self-control, motivation, and self-confidence were the predictors of overall academic performance. The EI subsets of social competence, empathy, and motivation were the predictors of clinical performance
3	Victoroff and Boyatzis, 2013 (USA)	Year 3 (n=62) and year 4 (n=38) dental undergraduates	Cross-sectional	Emotional Competence Inventory-University version	Weighted GPA from courses of year 1 and 2 and Overall clinical grade GPA	EI one subscale (self-management) showed an inverse correlation with and overall academic performance (β=0.39, p<0.05) EI one subscale (relationship management) showed a positive correlation with overall academic performance (β=0.50, p<0.001) EI one subscale (self-management) clinical GPA were positively correlated (β=0.49, p<0.05)

Table 1: Methods Used and Findings of the Studies in the Review (n=23)

No	Author, Year & Country	Study population & Sample size	Study design	EI Scale used	Outcome measurement	Association/Correlation/Influence
Studies focused on medical undergraduates – Positive association						
1	Fallahzadeh, 2011 (Iran)	Final year medical undergraduates n=223 (153 females)	Cross-sectional	Bar-On emotional quotient inventory	Mean last-year university GPA	EI score showed a positive correlation with (r=0.14, p=0.039) academic performance
2	Radfa et al., 2012 (Iran)	All years medical undergraduates (n=150, all males)	Cross-sectional correlational	Bar-On emotional quotient inventory	GPA of different years	EI score and academic achievements were positively correlated (p = 0.001, r=0.305).
3	Chew et al., 2013 (Malaysia)	1st year (n=84; 58 females) and 2nd year (n=79) medical undergraduates	Cross-sectional	Mayer-Salovey-Caruso Emotional Intelligence Test	Continuous assessments and final examination results	Overall EI score showed positive correlations with overall continuous assessments (r=0.24, P=0.03) and final examination (r=0.21, P=0.01) Subscale analysis: Perceiving and understanding emotion correlated with continuous assessments as well as final examination marks
4	Unnikrishnan et al., 2015 (India)	2nd, 3rd and 4th year medical undergraduates n=532 (316 females)	Cross-sectional	Schutte Self-Report Emotional Intelligence Test	Grades of all three years divided into different levels as 1st classes, 2nd class, passes and fails	EI categories and performance categorieswere positively correlated (p=0.001)

Table 1: Methods Used and Findings of the Studies in the Review (n=23)

No	Author, Year & Country	Study population & Sample size	Study design	EI Scale used	Outcome measurement	Association/Correlation/Influence
5	Wijekoon et al., 2017 (Sri Lanka)	Final year MBBS undergraduates (just passed out) n=130	Cross-sectional	Genos Emotional Intelligence full version	Final MBBS results in the first attempt	Total EI score was an independent predictor of final MBBS results [β-0.018, p = 0.006] after adjusting for gender
6	Austin et al., 2005 (UK)	1st year medical undergraduates n=156	Longitudinal	Austin, Saklofske, Huang, and McKenney scale	Year 1 students' written scores in 3 end-of-term examinations	EI score correlated with one term one subject score only (r=0.22, P=0.007)
7	Brannick et al., 2013 (USA)	Medical undergraduates of year 1 and year 2, followed till the year 4 n=203	Longitudinal	Mayer-Salovey-Caruso Emotional Intelligence Test	GPA of year 1and 2 combined, GPA year 3 and year 4 and clinical skills assessed in 12 OSCE stations	EI score predicts GPA year 3 (r=0.17, P<0.05) and GPA year 4 (r=0.16, P<0.05) EI score showed no significant correlation with clinical examination performance
8	Ranasinghe et al., 2017 (Sri Lanka)	Medical undergraduates of 2nd, 4th and final years n=471	Cross-sectional	Schutte Self-Report Emotional Intelligence Test	Examination results of different years	Only among final year undergraduates, those who passed the Clinical Sciences examination in the first attempt had a higher EI score (p <0.001)

Table 1: Methods Used and Findings of the Studies in the Review (n=23)

No	Author, Year & Country	Study population & Sample size	Study design	EI Scale used	Outcome measurement	Association/Correlation/Influence
Studies focused on medical undergraduates – No association						
1	Altwijri et al., 2021 (Saudi Arabia)	4th-6th year medical undergraduates n=296	Cross-sectional	Schutte Self-Report Emotional Intelligence Test	GPA in the most recent examination	EI showed no correlation with academic success ($p > 0.05$)
2	Holman et al., 2016 (New Zealand)	1st year medical undergraduates (48 males)	Cross-sectional	Schutte Self-Report Emotional Intelligence Test	Course performance grade	EI score and academic performance showed no correlation ($p = 0.31$).
3	Humphrey-Murto et al., 2014 (Canada)	Two cohorts of medical undergraduates (n=120 and 106) followed in years 2, 3, and 4	Longitudinal	Mayer-Salovey-Caruso Emotional Intelligence Test	Mean written examination scores of year 1, 2, 3	EI scores showed no significant correlations with written examination scores in both groups ($p>0.05$)
4	Stratton et al., 2005 (USA)	3rd year medical undergraduates of 2 different cohorts n=165	Cross-sectional	Trait Meta-Mood Scale	Clinical skills assessed by standardized patients in 12-station OSCE.	EI score and clinical skills were not correlated ($p>0.05$)
5	Austin et al., 2007 (UK)	Medical undergraduates of years 1, 2, and 5 (188 females, 85 males)	Longitudinal	Austin, Saklofske, Huang, and McKenney scale	End-of-year marks of year 1, year 2 and year 5	EI score was not associated with end-of-year marks for any year ($p>0.05$)

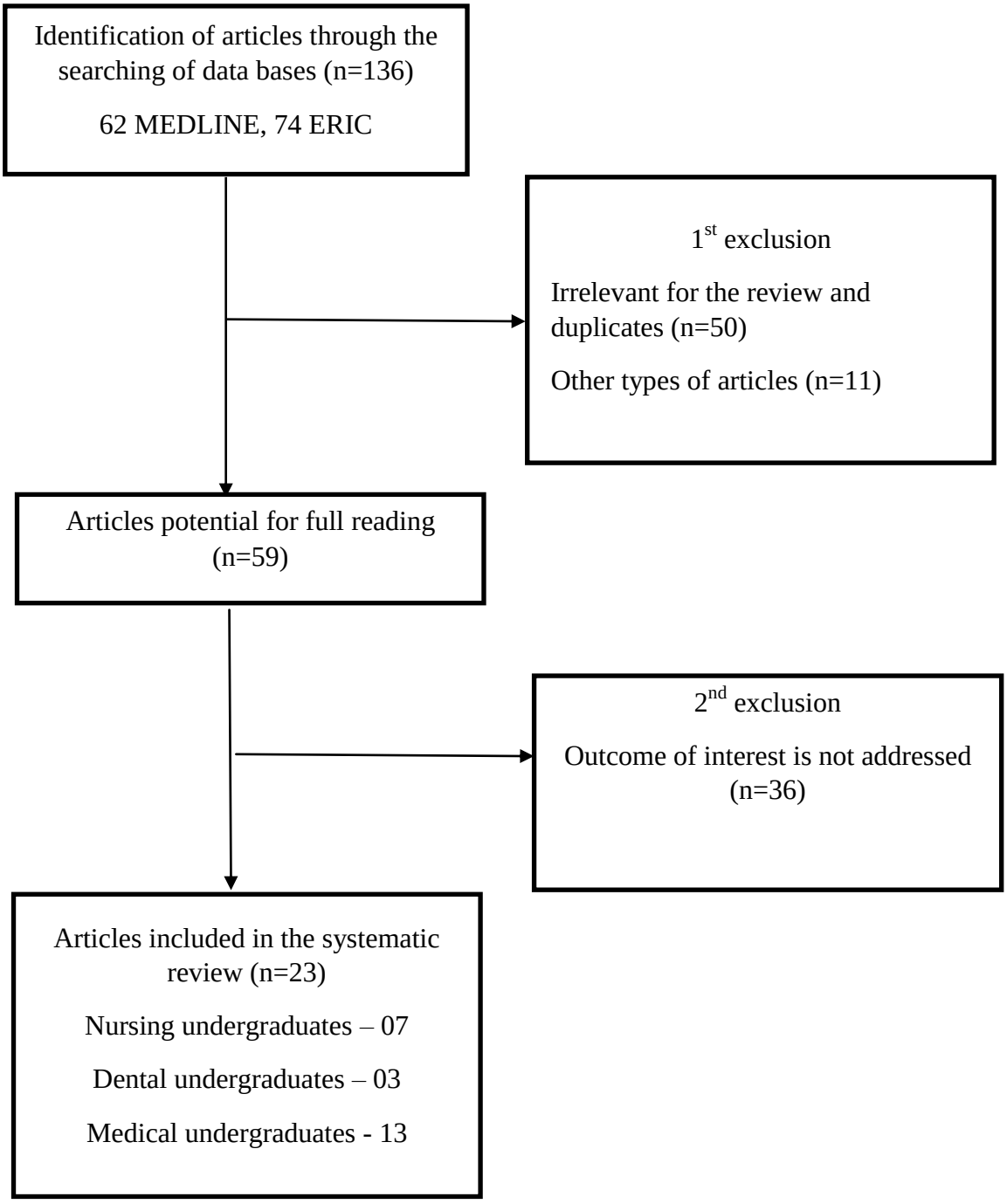

Figure 1: Summary Results of the Literature Search (PRISMA*)*

Tools Used to Assess the EI and Academic Performance

Among these studies, EI has been measured by several tools including Schutte Self-Report Emotional Intelligence Test (n=06), Mayer-Salovey-Caruso Emotional Intelligence Test (n=05), Bar-On emotional quotient inventory (n=03), Trait Emotional Intelligence Questionnaire (n=02), Emotional Quotient Self-Assessment Checklist (n=02), Austin, Saklofske, Huang, and McKenney scale (n=02), Genos Emotional Intelligence full version (n=01), Trait Meta-Mood Scale (n=01) and Emotional Competence Inventory (n=01). Further, academic performance has been assessed by taking the grade point average (GPA) score, student's year/semester/final year/continuous assessment test scores for either theory component or clinical/practical component.

Impact of EI on Academic Performance of Health Sciences Undergraduates

Of the 23, fourteen studies (60.9 %) (3 nursing, 3 dental and 8 medical) have shown that EI is linked with the successful academic performance of health sciences undergraduates. Nine studies (39.1%) (4 nursing, 5 medical) have not been able to reveal an association between the EI and academic performance (Table 1).

Impact of EI and Academic Performance in Nursing Undergraduates

EI scores were found to be positively correlated with overall academic performance evaluated with GPA scores ($\beta=0.25$, $p=0.023$) (Fernandez et al., 2012) and mean score for all assignments in year 1 ($r=0.16$, $p<0.05$) and clinical practice performance ($R^2=0.68$) (Rankin, 2013) of nursing undergraduates in Australia and UK, respectively. Beauvais et al have shown that only one branch of EI (perceiving emotions) correlates with academic performance assessed with GPA ($r=0.23$, $p=0.04$) (Beauvais et al., 2014); however, overall EI score showed no correlation with overall academic performance ($p>0.05$) of nursing undergraduates of the USA. Further, a few studies reported no association between EI and academic success in either clinical or theory competency measured with GPA among nursing undergraduates in the USA (Cheshire et al., 2015) and overall academic performance of nursing undergraduates in Saudi Arabia (Suliman 2010) and Spain (Roso-Bas et al., 2016).

Impact of EI and Academic Performance in Dental Undergraduates

EI has shown positive correlations with academic performance ($R^2=0.42$, $p<0.05$) of Indian dental undergraduates evaluated using final year grades (Kumar et al., 2016). Similarly, Partido and Stafford have shown EI scores to positively predict the overall GPA ($R^2=0.35$, $p<0.001$) and clinical performance grades ($R^2=0.33$, $p<0.001$) among dental undergraduates of the USA. The EI subsets of

self-control, motivation, and self-confidence have been identified as the predictors of overall academic performance while EI subsets of social competence, empathy, and motivation were the predictors of clinical performance (Partido and Stafford, 2018). Victoroff and Boyatzis have also shown EI subscale (relationship management) to be positively correlated with the overall academic performance ($\beta=0.50$, $p<0.001$) and self-management subscale to be positively correlated with clinical GPA ($\beta=0.49$, $p<0.05$) of another cohort of dental undergraduates in the USA. Furthermore, the clinical performance of dental undergraduates including diagnostic and treatment planning skills, time utilization, preparation and organization, fundamental knowledge, technical skills, self-evaluation, professionalism, and patient management have also shown to be significantly associated with EI scores. However, EI subscale on self-management was negatively correlated with the overall academic performance ($\beta=0.39$, $p<0.05$) of these undergraduates (Victoroff and Boyatzis, 2013).

Impact of EI And Academic Performance in Medical Undergraduates

EI have shown positive correlations with academic performance measured with GPA among medical undergraduates of Iran (Fallahzadeh, 2011; Radfa et al., 2012). Overall EI scores of Malaysian medical undergraduates have also shown positive correlations with overall performance at continuous assessments ($r=0.24$, $p=0.03$) and final examination ($r=0.21$, $p=0.01$). Further, in the subscale analysis, both perceiving and understanding emotions subscales have shown positive correlations with continuous assessments as well as final examination marks (Chew et al., 2013). EI categories have shown significant associations with grades of all three years divided into different levels of academic achievements ($p=0.001$) among medical undergraduates of India (Unnikrishnan et al., 2015). Similarly, a Sri Lankan study has also observed that total EI score as an independent predictor of final MBBS results [β-0.018 (95% CI 0.005-0.031); $p = 0.006$] after adjusting for gender of medical undergraduates (Wijekoon et al., 2017).

EI score of UK medical undergraduates has shown positive correlations only with one term one subject score ($r=0.22$, $P=0.007$) where subjects scores of other semesters showed no correlation with EI (Austin et al., 2005). A study from the USA has shown that medical undergraduates EI score is correlated with the GPA of theoretical component of examinations and is not correlated with clinical component (Brannick et al., 2013) while a Sri Lankan study providing evidence that EI scores are higher among medical undergraduates who passed clinical examinations successfully at the first attempt with good grades (Ranasinghe et al., 2017). In contrast to above studies, a Saudi Arabian study has shown EI is not associated with academic success of undergraduates (Altwijri et al., 2021). A few studies from the West also reported that EI has no association with academic performance in both theoretical components (Holman et al., 2016; Humphrey-Murto et al., 2014; Austin et al., 2007),

as well as in clinical performance evaluated based on OSCE scores (Stratton et al., 2005) of medical undergraduates.

Discussion

The main purpose of the review was to identify the impact of EI on academic performance of health sciences undergraduates. A majority of reviewed studies (n=14, 60.9%) have clearly observed that EI has a significant association with academic success in health sciences undergraduates while others have observed no associations. Studies that showed an inverse association were less in numbers. This observation is concordant with the studies which identified the relationship between EI and academic success of other categories of university undergraduates and school children in different levels. However, the assumption that EI has a significant contribution on academic success of health sciences undergraduates is still contradictory and cannot be generalized to all the health science undergraduates. Most of the studies were cross sectional in design hence considered only an academic performance of a given time. A point analysis may not capture the academic skills of an individual due to many other factors. Studies that capture the academic performance during the entire period of study or in critical evaluations such as barrier exams are likely to generate more valid information.

Though some of the studies have observed an association between EI and academic performance measured in both clinical and theoretical components, these studies have used different scales to evaluate the EI and academic performance. And further, some studies have not reported the adaptability criteria of EI tools they used for the countries and cultures (Stough et al., 2009). These reasons further limit the generalizability of observed associations between EI and academic success of health sciences undergraduates.

The academic success is not purely predicted by the EI, the IQ level, personality, childhood character development, social status, ethical behaviour and communication skills also may influence that(Epstein and Hundert, 2002)**.** Apart from that, the tools that have been used to assess the academic performance might not have captured the EI since the tools did not contain criteria focused on EI (Cheshire et al., 2015). The studies which did not observe the association between the EI and academic success might be due to these reasons.

The main limitation of this review is that we considered only the objectively measured academic performance. However, review would have been better if it was more elaborated on the contribution of EI on the competencies of future healthcare professionals such as professionalism, ethical behaviour, and ability to build a professional relationship as well. Therefore, we recommend further studies

mainly in interventional nature while considering the important aspects of professionalism, ethical behaviour and soft skills as well with proper objective measurement tools.

Conclusions

A majority of studies have observed an impact of EI on academic performance of health sciences undergraduates; however almost all the studies were cross sectional and considered only the performance at a given time. Therefore, this association needs to be tested in larger samples followed up for the entire period of study.

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RP6

Issues and Challenges of e-learning, and Performances of Students During the Covid-19 Pandemic at the Faculty of Fisheries and Marine Sciences & Technology, University of Ruhuna, Sri Lanka

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Abstract

Education systems were interrupted during the last twenty months as conventional teaching was impracticable with Covid-19 pandemic. To overcome this global challenge, "e-learning" was exponentially grown in the education sector. However, Sri Lanka is still at its initial stage adapting to this transition. Similar to most other universities, the Faculty of Fisheries and Marine Sciences & Technology had not been completely prepared for this sudden transition. Hence, e-learning has evolved gradually while confronting various issues and challenges. The present study was designed to investigate those issues and challenges that impede the quality of e-learning. A survey was conducted using two different close ended structured questionnaires, which were circulated among students and academic staff using Google forms. In addition, results of students in the most recent two semesters were analysed to determine the influence of e-learning on pass marks of subjects. Students prefer morning hours from 8.00-12.00 noon for online lectures for a maximum of two hours per lecture, which totally matches to the teacher's choice. Headaches, blurred vision and dry eyes were associated with prolonged screen time for more than two hours were recorded as the most common causes. Furthermore, continuous usage of electronic devices caused failures in their devices due to heating. Even though video conferencing allows live interaction between students and teachers, the majority of students avoid this option due to internet interruption, and high data usage. However, a major challenge of online teaching was the lower responses of students, where their responses or active participation in discussions were almost zero for certain courses. There was no significant negative

impact of e-learning on pass marks of subjects. Although students prefer both online and conventional teaching, teachers are not satisfied with e-learning. These findings would help to solve issues in e-learning as well as to improve the quality of e-learning of the faculty.

***Keywords*:** Distance-education, Video Conference, Covid-19, E-learning, Assessments

Introduction

e-learning is an active learning process that empowers students allowing better learning experience and enhances co-creation abilities. With the help of available information technology tools, e-learning can be conducted either online or offline. In the learning process, there are three components needed to be considered: teaching, learning and assessments. All of these components can be addressed effectively with the aid of modern information technology tools. However, e-learning is not a popular mode of teaching in higher education systems in Sri Lanka except in the application tools like learning management systems (LMS). However, in parallel to the Covid-19 pandemic, the entire education system of the country was partially paralyzed, and consequently, e-learning tools came into practice to make adoption of remote learning (Lockee, 2021). Among those tools, the majority of the higher education systems use LMS, web conferencing, collaboration tools, course authoring software and virtual reality (Hayashi et al. 2020). As this is a new experience for all, both teachers and students face an array of issues and difficulties that interrupt the e-learning process (Chakraborty et al. 2020). As it is difficult to depend solely on conventional teaching and learning under strict health guidelines of Covid-19, e-learning practices became compulsory in the education sector.

Faculty of Fisheries and Marine Sciences and Technology (FMST) is one of the faculties of University of Ruhuna, offering two undergraduate degree programs namely BSc Honours in Fisheries and Marine Sciences degree and BSc Honours in Marine and Freshwater Sciences degree. Although both degree programs were initially interrupted by the Covid-19 pandemic, the faculty was able to restart its academic program and to complete one semester of both degree programs by adopting e-learning facilities. Similar to other universities, the Faculty of FMST was not fully prepared for this sudden transition, but gradually adapted to the e-learning process. During this transition period, there were many concerns on technology, timetable, administration, and communication etc. Thus, the present study was designed to investigate the obstacles and issues faced by students and teachers during this transition period, and to evaluate the impact of e-learning on student performances in order to improve the quality of the e-learning process of the Faculty of FMST.

Methodology

Research Design

A survey was conducted using two different close ended structured questionnaires, which were circulated among students and academic staff using Google forms. In addition, results of students in the most recent two semesters were analysed to determine the influence of e-learning on pass mark of subjects

For the survey, close ended structured questionnaires were prepared by considering the following facts, with few sub- questions

- The most preferred time of the day for online lectures
- Preferred maximum length of a lecture
- Preferred time gap in between two lectures
- Need of visual interaction with the lecturer
- Preferred teaching aids for e-learning
- Preference of mode of teaching and learning
- Difficulties faced during e-learning
- Methods for online assessments

Study Population and Data Collection

Prepared questionnaire was circulated using a Google form among all students of the faculty via the learning management system (LMS), where the students can access through their own LMS account. The entire current student population of the faculty of FMST was selected for the study (n = 297). A separate questionnaire was circulated among all academic staff members of the faculty (n = 28) in order to collect the same information and their experience of e-learning. The data collection was conducted in July 2021 just after one year of commencement of e-learning in the faculty.

In order to check whether the mode of teaching influenced the student's grades of different course units, the exam results of two immediate semesters were compared. The most recent semester used e-learning while the other semester has been entirely covered by conventional teaching. Relationship between the mode of teaching (conventional vs. online) and the chance of obtaining a grade of either

"C" or better was compared for the Level-I, II and III. For this comparison, the average percentage of total pass grades (C or better) and total percentage average of fail grades (C^-, D, D^+ and E) for each level of study was estimated, and it was statistically compared by employing χ-square test at the 0.05 significant level. Statistical analysis was performed in IBM SPSS (25 version) while graphical illustrations were done in MS Excel.

Results

Responses of Students

Out of the 297 student population of the faculty, there were 263 responses, which comprised level-I, level-II, level-III and level-IV (89%, 81%, 89% and 95% respectively). According to their responses, the majority (64 %) of them are willing to participate in online lectures in the morning hours from 8.00 – 12.00 noon. This choice was basically due to fewer disturbances at their residence in the morning hours, the freshness of the day and the bad weather conditions in the afternoon.

When considering student preference on the duration of an online lecture, 30 % of students prefer both one hour and two hours lectures followed by one hour and thirty minutes, and more than two hours respectively. Students need a break of at least 10 min in between two online lectures due to several reasons. Among those, dry eyes and headache were prominent among students due to continuing exposure to digital screens and our findings totally agree with Singh et al. (2021). Majority of the students in the Sri Lankan higher education system use either laptops or smart phones for their online lectures (Hayashi et al., 2020) where the similar pattern was observed in the present study. According to the responses of students, continuing online lectures results in heating up of their devices, and consequently technical defects. Similar to the present study, Vershitskaya et al. (2020) emphasized the poor service strategies and insufficient technical support as some of the key issues in e-learning.

There were significant differences (χ^2 = 96.67, df =16, p< 0.05) in responses for their preference on mode of assessments. According to student's choices, the most preferred mode of assessment was multiple choice questions (MCQs) (28.4 %), while they also preferred short answer questions (25.4%). However, group presentations fell into either disagree (31 %) or strongly disagree categories (28.6%). These responses revealed that the most preferred mode of assessment of the student is MCQs. As the online assessments are conducted without physical presence of students and instructors at the same place, suitability of online assessments are decided by the existing e-learning infrastructure and overall cost of the process (Muzaffar et al., 2021).

Even though the interaction between student and teacher is important to continue the e-learning process, the majority of the students (59 %) are not willing to have visual interactions with the lecturer.

Major reasons behind aforementioned selection were the interruption of the internet service, and high data usage during video conferencing. However, a considerable proportion (41%) of the students highlighted the importance of visual interaction with the lecturer to maintain a live classroom experience in e-learning.

In response to teaching aids used in e-learning, the majority (84 %) of students preferred PowerPoint presentations followed by LMS based assignments, formal discussions, and activity-based discussions respectively. Overall, students were more willing to accept both online and conventional lectures (60.5 %) than a single mode of teaching either online or conventional.

Responses of Academic Staff

Similar to the student's choice, the majority of the academic staff members (59 %) prefer to conduct online lectures in the morning hours from 8.00-12.00 noon for a maximum duration of either one and half hours or two hours. Fewer disturbances and the freshness of the day are the major reasons for their choice.

Power failures together with difficulties faced during logging in to zoom accounts have been identified as the major issues when conducting online lectures at their residences as well as at the university. In addition, academic staff members have highlighted less interaction with students as a serious concern of online teaching. In distance education, the extent to which teachers and students can interact and communicate well with each other decides the productivity of e-learning (Arbaugh, 2000). According to the experiences of academic staff, 18% of staff agreed that students were not active in discussions, while 53% said their responses were below 25%. Academic staff has indicated that certain practical classes are possible to be conducted in online mode, while some practical classes are totally impossible to be conducted online.

Regarding assessment methods, 35% strongly recommended viva-voce, while 71% agreed for short, answered questions and MCQs. Essay questions with a deadline of submission as an assessment method was strongly opposed by the majority (24%) of academic staff respondents. Compared to conventional teaching, the majority of the academic staff (94 %) rated online teaching as either 1, 2 or 3 on the Likert scale of poor (1) to excellent (5). However, as there is no other alternative to continue the academic activities of the faculty, e-learning was recommended by both students and academic staff.

Relationship Between Grading and Online Teaching

There was no effect of mode of teaching on pass grades of students who followed Fisheries and Marine Sciences Degree ($p > 0.05$), while it affected some Freshwater and Marine Sciences students in a positive manner (Fig. 1). For instance, the percentage of "C" grade or better in level-III was significantly higher ($\chi^2 = 6.29$, $p = 0.009$) following online teaching (97%) than following the conventional method (87%) (Fig. 1 B).

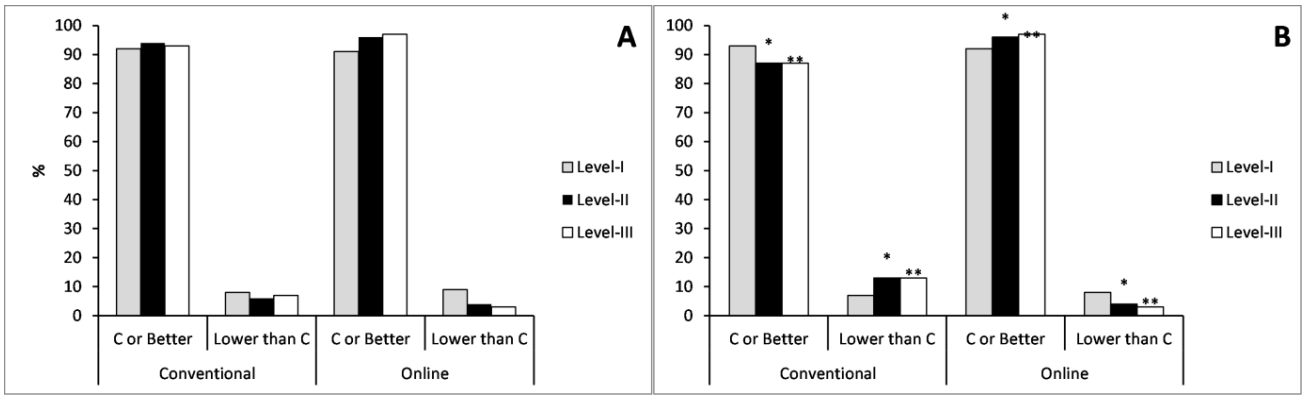

Figure 1: Effect of online teaching on pass grade of students (A: Fisheries and Marine Sciences Degree students, B: Marine and Freshwater Sciences students, different star marks at the same category indicate the significant different at 0.05 level)

Conclusions and Recommendations

Both students and teachers adhere to the online process since there are no other alternatives for teaching in the education system at this transition stage. Continued exposure to digital screens causes health issues in students including headaches and dryness of the eye. Thus, limiting online lectures to a maximum of two hours per session is recommended. The e-learning did not negatively affect the pass mark of the course units of FMST students. Nevertheless, it is recommended to analyse the effects of e-learning on superiors for obtaining higher grades. As a majority of academic staff is not satisfied with e-learning, strategies are needed to be implemented, specifically to develop interaction between student and teacher, and teaching methods.

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RP7

Perception of Pharmacy Graduates on Pharmacy Degree Programmes Conducted by Three Sri Lankan Universities and Their Job Satisfaction: A Survey-based Pilot Study

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Abstract

Sri Lankan pharmacy education consists of two undergraduate degree programs: Bachelor of Science in Pharmacy (BSc Pharmacy) and Bachelor of Pharmacy (BPharm). This study aimed to evaluate the perception of pharmacy graduates on pharmacy degree programmes in Sri Lanka and their job satisfaction. A cross-sectional online survey was conducted from 15 June to 15 July 2021 among pharmacy graduates from three selected Sri Lankan universities using a content and face validated and pretested online questionnaire. Among the total number of participants (n = 101), 55% were between 26-30 years and the majority (72%) were females. Of the participants, 46% have either completed or are pursuing a postgraduate degree. More than 95% agreed that it is important to have pharmacy degrees in Sri Lanka while 70% agreed that the quality of pharmacy degree is at a satisfactory level. Almost all the participants believed that the academic standards of the degree, international collaboration with foreign universities, clinical training and industrial training should be improved. Approximately 50% of participants were satisfied with the number of academic staff, library and laboratory facilities, while 61% reported that the number of lecture halls were not sufficient. Studying a pharmacy degree helped 64% of the participants to obtain their desired job. However, only 53% of the participants were satisfied with their current job, and 46% were satisfied with the salary scale. The general perception about pharmacy degree programmes in Sri Lanka is high, however, the satisfaction with facilities available is low.

Keywords: Pharmacy Graduates, Job Satisfaction, Sri Lankan Universities

Introduction

Pharmacy profession ensures the provision of safe and effective drug therapy to patients (Abrahamsen et al., 2020; Jacobi et al., 2016). The role of the pharmacist spreads in various settings including pharmaceutical industry, hospital pharmacy, community pharmacy, drug information services, marketing, drug regulatory, academia and research (Abu-Gharbieh et al., 2010; Merlin, 2011). Recently, pharmacy education and profession have taken significant steps globally where they stretched out in a more patient-centered manner. In the last four decades, the pharmacy profession has evolved substantially, leading to changes in its role. This urged the necessity for expanding pharmacy education. There are different types of pharmacy education programmes conducted in Sri Lanka which include BPharm, BSc Pharmacy, Diploma in Pharmacy and Certificate Course in Pharmacy. Seven universities offer bachelor's degree or Bachelor of Science degrees in Pharmacy in Sri Lanka. Currently, the basic qualification to practice as a pharmacist is a diploma in pharmacy. Internationally, pharmacy education is developing according to the requirements of the society and studies were conducted investigating the success of them (Davies et al., 2013). It has been nearly two decades since pharmacy degree programmes have commenced in Sri Lanka. However, none of these universities have commenced a postgraduate pharmacy degree yet. Even though there are a considerable number graduating each year, no published data was found on investigating the perception of graduates of these degree programs. Thus, there is an urgency for this type of study in Sri Lanka for the development and standardization of pharmacy education and the profession. Therefore, the objective of this study was to evaluate the perception of pharmacy graduates on pharmacy degree programs conducted by three Sri Lankan universities and their job satisfaction following the completion of the pharmacy degree.

Methodology

Study Design and Setting

This study was a part of an ongoing cross-sectional, questionnaire-based study conducted among all the pharmacy graduates from Sri Lankan universities where pharmacy degree programmes are conducted. There are seven universities offering pharmacy degree in Sri Lanka namely University of Peradeniya (UoP), University of Ruhuna (UoR), University of Sri Jayewardenepura, University of Colombo, University of Jaffna, Open University of Sri Lanka and Kotelawala Defence University (KDU). The curricula of all four-year pharmacy degree programs are more or less similar and include the areas in pharmaceutics, pharmacy practice, pharmacology, pharmacognocy, clinical pharmacy, pharmacotherapeutics, medicinal chemistry, anatomy, physiology, biochemistry, microbiology,

pharmacy law and ethics, pharmaceutical technology and quality control, pharmaceutical marketing and management.

Study Sample

All the pharmacy graduates passed out to date from University of Peradeniya, University of Ruhuna and Kotelawala Defence University were taken as the sample.

Data Collection and Analysis

The questionnaire was content, and face validated by the experts in the field and pre-tested on content, design, readability and comprehension using 10 pharmacy graduates from all the three universities, and modifications were made as necessary and shared to all the graduates of the three universities as a Google document using their personal email addresses. Subsequently, the responses received within a period of month (15 June to 15 July 2021) were collected. The questionnaire consisted of 26 questions to retrieve information on demographic data, details of the employment, evaluation of overall perception, evaluation of the perception of shortcomings and extent of contribution towards career opportunities. In this tool participants' perception was assessed using a 5-point Likert scale (strongly agree, agree, disagree, strongly disagree and no opinion) and categorical variables were presented as numbers (percentages).

Ethical Considerations

The study protocol was reviewed and approved by the Ethics Review Committee of the Faculty of Allied Health Sciences, University of Ruhuna. All the study-related procedures and data collection were performed after obtaining informed consent from participants.Data were collected using a Google form and all answers were kept anonymous even to the research team.

Results

Total of 271 graduates of three different universities (UoP-138, UoR-79 and KDU-54) were approached and 101 completed the questionnaire during the one-month study period. The response rates for UoP, UoR and KDU were 41% (57/138), 38% (30/79) and 26% (14/54) respectively. Among the total number of participants (n=101), 55% were between 26-30 years of age and the majority (72%) were females. More than 95% agreed that it is important to have pharmacy degrees in Sri Lanka while 70% were satisfied with the quality of pharmacy degree. Almost all the participants believed that academic standards of the degree, international collaborations, clinical training, laboratory practical and industrial training should be improved. Approximately 65% believed that the

number of academic staff was not adequate but, academic supportive staff was adequate. More than 50% of the participants were satisfied with the multimedia facility, but not with the number of lecture halls. Approximately 50% of the participants were satisfied with pharmacy textbooks and the e-library facilities. Only 29% of participants were satisfied with the journal accessing facilities in the library. According to the perception of the study participants, studying pharmacy degree helped 64% of the pharmacy graduates to obtain their desired job. Seventeen percent of participants have completed at least one postgraduate degree to date, while 25% of participants were pursuing postgraduate degrees. Only 60% believed that their degrees kept pace with the recent trends and development in the pharmacy field and 55% stated that the quality of pharmacy degrees meets international standards. Seventy eight percent of participants agreed that "Pharmacy degree programmes in Sri Lanka address societal education needs" and 82% liked to recommend the pharmacy degree to others. From the total, 89% are currently employed in the field of pharmacy. Majority work in the government sector (46%) while the private sector made 31%. Of the total participants, 53% claimed that they were satisfied with their current job, and only 46% were satisfied with their salary scale.

Discussion and Conclusions

Results of this study show that 70% students expressed high overall satisfaction regarding the quality of pharmacy degrees in Sri Lanka. Approximately 50% of participants were satisfied with the number of academic staff, library and laboratory facilities, while 61% reported that the number of lecture halls was not sufficient. There are few reasons for these observations. The faculties where the pharmacy degrees are conducted are the youngest faculties of the respective universities. With the increased number of undergraduates enrolled to the relevant faculties, the academic cadre positions are increasing, and it will enable achieving sufficient student/teacher ratio. Furthermore, the relevant universities and the health care authorities should develop strategies to bridge the existing gaps between the clinical and industrial training.

Studying pharmacy degree has helped majority of the participants to obtain their desired job, however, they were not satisfied with the salary scale. The fact that the government of Sri Lanka does not absorb the pharmacy graduates into a considerably different salary scale in the government health sector, might have caused this highlighted dissatisfaction for the salary scales. Possible variations in human and physical resources available in the three universities are a limitation of this study.

In conclusion, pharmacy graduates were satisfied with the quality of the pharmacy degree programmes conducted in Sri Lanka and with the current job, however, they were not satisfied with the facilities available such as journal-access facilities in libraries.

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RP8

Preliminary Causes for the University Dropout at the Faculty of Agriculture, University of Ruhuna, Sri Lanka

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Abstract

University dropout without completing the degree is one of the prominent drawbacks that affect institutions of higher education, individuals, and society worldwide. The current literature has focused on identifying the internal or external characteristics of students' neglecting the pool of aspects in broad. This study aims to identify how career interest, financial, academic, and social factors affect the student's dropout to address the desertion of universities based on their justifications. A Google questionnaire was used to collect data from 30 randomly selected dropped out undergraduates of the Faculty of Agriculture, University of Ruhuna. The majority (70 %) of participants were female. The sample representing 80% of participants have expressed their satisfaction towards the dropout decision while 20% have regretted their decision of leaving the degree program. This finding claims that one out of five dropout students regrets their decision subsequently. According to the Wilcoxon Sign Rank Test results, the deviated career interest of the undergraduates significantly influenced their decision to drop out during the university period ($p=0.043$, $\alpha<0.05$). However, the financial difficulties when acquiescing essential requirements like food, clothes, *etc.* ($p=0.463$, $\alpha>0.05$ accommodation ($p=0.172$, $\alpha>0.05$) and the academic vulnerability because of complexity ($p=0.686$, $\alpha>0.05$), language problems ($p=0.464$, $\alpha>0.05$) did not significantly influence their dropout decision. The social isolation due to unhealthy relationships with batch mates ($p=0.008$, $\alpha<0.05$), academic staff ($p=0.020$, $\alpha<0.05$) were also significant and have influenced undergraduates' dropout decisions. The academic, financial, and social factors related issues can be addressed by developing a conceptual model that signals the vulnerability of desertion of each undergraduate beforehand. The timely intervention of academic staff while organizing efficient student mentoring sessions for needy students seems necessitated and also the outcome of this study will assist the administration body to reclaim the academic policies to diminish university dropout in advance.

***Keywords*:** University Dropouts, Academic Vulnerability, Financial Difficulties, Social Isolation, Career Interest

Introduction

University dropout is one of the prominent drawbacks that affect institutions of higher education, individuals, and society as a whole. According to Voelkle and Sander (2018), dropping out of university without completing the degree has significant ramifications for individuals, institutions of higher education, and society. Voelkle and Sander (2018) once revealed that deficient teaching and the lack of assistance at the institutional level have caused potential student dropouts at the preliminary level. Apart from that, wasted time, private cost, and potential psychological trauma for the individual generate petrifying effects owing to considerable marginalization and the fallacious interpretation towards negative labour market outcomes (Ortiz and Dehon, 2013). From the societal point of view, dropouts hinder another student's opportunity to become a graduate and correspondingly it wastes tax resources that have been allocated for the dropout students until the course ends (Voelkle and Sander, 2008).

Even though students who drop out may re-enrol into another institution or field of study, securing students' retention has become a major policy concern to avoid counteractive ramifications of dropouts (Voelkle and Sander, 2008). Therefore, a study was conducted to investigate the nature and major determinants of university dropout among students in an attempt to design a conceptual model to accompany appropriate intervention strategies.

The current literature has focused on identifying the internal or external characteristics of students, which affect university students' dropouts despite considering the pool of aspects related to the academic, social, economic, and institutional context in broad. This study aims to identify how personal, academic, institutional, social, and financial factors affect the student's dropout to address the desertion of universities based on their justifications. The present study will assist the administration body of the universities to revise the academic policies to diminish university dropout.

Methodology

The study was mainly designed to investigate the cumulative effect of academic vulnerability, social isolation, family burdens, and career interests' affect the trajectory of dropout among undergraduate students in the Faculty of Agriculture, University of Ruhuna. The primary data were collected using a pre-tested Google questionnaire. The random sampling method was utilized and collected data from thirty undergraduates who left the three-degree programs; BSc in Agricultural Resource Management & Technology, BSc in Agribusiness Management, and BSc in Green Technology during the last five years.

The variables to identify the family background by means of parents' educational qualification, financial viability, and the number of dependents were considered. Moreover, students' vulnerability to the academic context given complex system theories, language problems, examination matters, and the workload were also observed in the study. Finally, student interest in their career choices was also taken into account. Several questions like the level of agreement for the above-mentioned causes were asked to determine the underlying causes of their trajectory action. Consequently, this study allows examining the relationship between undergraduates' socioeconomic characteristics with their tune-out decisions. The secondary data was gathered through reports, journals, etc.

In this survey, analysis was conducted based on two areas. They are the level of importance of social relationships for the students and the cognitive ability of the students. The data were analyzed using SPSS statistical software. The descriptive statistics were used to demonstrate the undergraduates' socio-economic features, and the Wilcoxon Signed-Rank test was conducted to analyze the weight of the effect of each factor on their ultimate decision to desert the university. A Chi-square test was conducted to evaluate the cumulative effects through exposing the relationship between undergraduates' socioeconomic characteristics with the principal causes of the dropout.

Results and Discussion

The sample includes 56.67% of undergraduates pursuing BSc Agricultural Resource Management & Technology, 30% pursuing BSc Agribusiness Management, and 13.33% pursuing BSc Green Technology degree programmes. Among all, the majority of 70% of the participants are females. The participants representing the sample are currently engaged in different fields. The majority (43.33%) are pursuing a permanent job, 3.33% are self-employed, and 6.67% are engaged in temporary employment, while 43.33% are continuing their further education. However, 3.33% of respondents are still unemployed. The majority, 80% of participants have expressed their satisfaction towards the decision to drop out while 20% have regretted their choice to leave the degree program. These results show that one out of five dropout students regret their decision later on. Table 1 illustrates the Wilcoxon Sign Rank test results undergraduates' level of agreement for each attribute of the dropout reasons.

The preliminary cause underlying the Faculty dropouts has been revealed as deviated career interest of the undergraduates. It has significantly influenced students' dropout decisions ($p= 0.043$, $\alpha<0.05$), and the participants agreed that they found the degree program doesn't fit with their career interests with time. Stinebrickner and Stinebrickner (2008) once revealed the fact that household economic conditions and credit constraints might be the reasons for being unable to afford university and for abandoning studies.

Table 1: The Wilcoxon Sign Rank Test to identify the significance of each attribute on dropout decision

Factor	Statement	Mean value	Test value	P-value	Comment
Career interest	The nature of this degree program won't assure an employment opportunity just after the graduation	0.26	1.129	0.259	Not Significant
	I found that the degree program doesn't fit with my career interest	0.20*	1.33	0.043	**Significant, Agree**
Financial Difficulties	I faced difficulties when preparing paper materials	-0.46*	-2.48	0.013	**Significant, Strongly Disagree**
	I faced difficulties when finding expenses for accommodation	0.13	0.73	0.463	Not Significant
	I faced difficulties when acquiescing to my basic needs (food, clothes, etc.)	-0.26	-1.36	0.172	Not Significant
Academic vulnerability	The subjects of the degree program are too complex	-0.13	-0.404	0.686	Not Significant
	I faced difficulties when understanding lectures in English	-0.13	-0.73	0.464	Not Significant
	I faced difficulties when communicating in English	-0.33*	-1.65	0.001	**Significant, Disagree**
	I faced difficulties when facing examinations	-0.33	-1.712	0.098	Not Significant
Social Isolation	Lack of support from friends	-0.80*	-3.24	0.001	**Significant, Disagree**
	Lack of support from senior batch mates	-0.53*	-2.48	0.013	**Significant, Disagree**
	I could maintain a healthy relationship with my batch mates	0.73*	2.63	0.008	**Significant, Agree**
	I could maintain a healthy relationship with lecturers	0.53*	2.33	0.020	**Significant, Agree**

Table 1: The Wilcoxon Sign Rank Test to identify the significance of each attribute on dropout decision

Factor	Statement	Mean value	Test value	P-value	Comment
	I experienced physical/ mental harassment from the batch mates	-0.96*	-3.23	0.001	**Significant, Disagree**
	I experienced physical/ mental harassment from the academic staff	-0.76*	-2.69	0.007	**Significant, Disagree**
	I experienced physical/ mental harassment from non-academic staff	-0.76*	-2.65	0.008	**Significant, Disagree**

Wilcoxon Signed Ranks Test: Significance Level is 0.05
Cronbach's Alpha: 0.885

However, the results demonstrated that the effort made on acquiescing paper materials, accommodations, and other expenses did not directly influence dropouts. The reason is that 50% of undergraduates' average monthly income of the family is 25000-50 000 LKR, while for 23.33% is 50 000- 75 000 LKR and for 13.33% ranged from 75 000 – 100 000 LKR per month. Meanwhile, 13.33% of undergraduates possess an average income of more than 100,000 LKR per month. Moreover, 40% of participants have had financial assistance (Mahapola, Bursary, Scholarships) while 60% did not receive any funds during the university period.

The deficient teaching and the lack of assistance at the institutional level have caused potential students' dropouts at the preliminary level (Voelkle and Sander, 2018). However, considering the degree programs of the Faculty of Agriculture, University of Ruhuna, the participants proved that academic vulnerability in view of subject complexity, workload, language problems, and examination matters have not significantly influenced their dropout decision.

Apart from that, potential psychological trauma and considerable marginalization can accelerate students' dropouts (Ortiz and Dehon, 2013). However, the test results revealed that a healthy relationship of the undergraduates with batch mates, academic and non-academic staff have prevented students from social isolation during the university period. Undergraduates' overall satisfaction with the ultimate decision was analyzed. The test statistics revealed that undergraduates are highly satisfied with the dropout decision with an associated significance level of 0 .000(α<0.05).

Conclusions

University dropout is one of the prominent drawbacks that affect institutions of higher education worldwide. The sample representing 80% of participants have expressed their satisfaction towards their dropout decision while 20% have regretted. The principal cause underlying their ultimate decision was a deviation in their career interest. The overall analysis revealed that there is no significant influence of financial difficulties, academic vulnerability, and social isolation on undergraduates' dropout decisions. Even though students who drop out may re-enrol into another institution or field of study, securing students' retention has become a major policy concern to avoid counteractive ramifications of dropouts. Therefore, the timely intervention of academic staff when students are about to leave the degree program is necessary to diminish university dropouts. Moreover, developing a database based on academic performance, which signal the vulnerability of desertion due to academic contretemps of each undergraduate, conducting frequent student mentoring and counselling sessions, and establishing funds for financially unstable students can be embraced to prevent dropout in advance.

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RP9

Student Feedback on Evaluation of Online Presentations as the Summative Assessment of an Undergraduate Course at the Faculty of Agriculture, University of Ruhuna

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Abstract

Covid-19 pandemic has made a range of hitherto less-known educational methods including online evaluation, an essential component of the teaching-learning process. However, online evaluation conditions are not yet optimized to meet the educational and socio-economic situations of the country. In this regard, online evaluation experiences can play a critical role. This study firstly discusses the steps taken to optimize the online evaluation conditions used for the online presentation assessment and subsequently, student feedback on the above assessment experience. Online evaluation of the student presentations of the final year industrial training programme of the undergraduates (n=125) following three BSc programmes at the Faculty of Agriculture, University of Ruhuna were conducted. Students were given a questionnaire containing a series of statements and asked to give their feedback on a five-point Likert scale. The questionnaire was administered using a Google Form. The comparative analysis was conducted using descriptive statistical methods, the Chi-square test, and Wilcoxon Signed-Rank. Students gave significantly positive responses for 8 of the 12 statements. They were; easiness, easy to follow guidelines, systematic nature, interaction with evaluation panel, answering via zoom, conveying specific skills, playing online presentations less anxious than conventional presentations. Significantly negative responses were received for two statements; 1) difficulties due to the use of electronic devices for a long time and 2) anxiousness about the technical problems that may occur during the sessions. Students strongly agreed that they are competent with using online tools. Females showed significantly higher competency levels for online software tools than males. More students preferred online presentation-evaluation (54.3%) than conventional face-to-

face presentation-evaluation (36.3) %, while others noticed no difference between the two methods. Students' views on their online presentation-evaluation experience were that there is a conducive environment for the assessment adopted. Students preferred online rather than conventional mode for presentation evaluation.

Keywords: Effectiveness, Online Assessment, Presentation, Feedback, Undergraduate

Introduction

The educational institutions were compelled to make sudden modifications in their teaching-learning strategies in response to social distancing guidelines imposed due to the global Covid-19 pandemic. According to Moore and Anderson (2003), online programs have become widely and generally accepted in many countries. The online evaluation is a digital-based assessment that facilitates diversified ways to measure the students' performance. Kuzma (2011), highlighted human capabilities, real-time contact, immediate feedback, peer and instructor support as major concerns of online presentation evaluation. Pros and cons associated with online evaluation from different perspectives have been reported (Taylor, 2002). Since online evaluations take place outside the classroom, students may become distracted and unable to recall or complete the assignment without considering the quality of performance during the evaluation (Laubsch, 2006). In general, academics and participants focus mainly on delivery skills and extra-linguistic features (body language, interactive skills, and eye contact) in evaluating presentations. In online evaluation the above aspects may receive lesser attention. According to Anderson et al. (2005), there may also be technical problems during online learning activities. Some questions remain as to whether the responses of the teachers and students are satisfactory as compared to the traditional presentation evaluation (Dommeyer et al., 2002).

Since online assessments are relatively new to Sri Lankan Universities, both students and teachers are facing difficulties in optimizing the conditions for online assessments. Particularly, the use of online assessments at the summative level is not widely accepted or promoted and thus practiced. Required adjustments for effective online assessments should be introduced taking the scientific analysis of feedback of students and assessors' experience on such assessments into account. Recently, the Industrial Placement Committee of the Faculty of Agriculture, University of Ruhuna conducted a summative level, online presentation-evaluation for the undergraduates of three-degree programmes. The objective of this study was to analyze the student feedback and the conditions that were arranged for the above assessment, with the view of optimizing online assessments.

Methodology

The primary data was collected using a pre-tested Google questionnaire. Students who participated in an online presentation-evaluation session of the Industrial Training (a 2/6 credit course for separate degrees) were the respondents of this study. The purposive sampling method was used to collect data from 125 undergraduates. The sample included 88 BSc. in Agricultural Resource Management & Technology, 24 BSc in Agribusiness Management, and 13 BSc in Green Technology undergraduates following their respective programmes.

The online assessment conditions were as follows.

1. Students were provided with instructions to prepare and submit documents and video recording of the presentation

2. Guidelines to effectively engage in online presentation evaluation were provided to both evaluators and students.

3. Students were informed about the current progress of the presentations using the presentation status update mechanism (Google Excel Sheet)

4. Introduced contingency plan to minimize disturbances during the evaluation

The questionnaire consists of four main parts. The first part was to identify participants' demographic features, the second part to examine their competency level for online software tools, the third part to identify predominant issues encountered during the online presentation evaluation program and finally, open-ended questions to explore their suggestions on the internet based evaluation. The fundamental issues experienced during the online presentation evaluation were analyzed under four major aspects; convenience of the evaluation, technical complications, importance of personal interaction, and presentation skills, and extra-linguistic features. Under these principal aspects, students were requested to give their feedback regarding compatibility, preparedness, immediate feedback, student-instructor interaction, technical errors, distractions, presentation delivery skills on a Five-Point Likert Scale ranging from strongly disagree to strongly agree. A Google form was sent to all the undergraduates (137) who have participated in the online evaluation. However, 125 undergraduates responded to the Google form displaying a 91% of response rate for the survey.

The data were analyzed using SPSS statistical software. The descriptive statistics were used to demonstrate the undergraduates' socio-economic features, and the Wilcoxon Signed-Rank test was conducted to analyze the weight of the effect of each factor for the online evaluation during the

presentations. A Chi-square test was conducted to expose the relationship between undergraduates' socioeconomic characteristics with the principal causes of their choice.

Results and Discussion

The response rate for the survey was 91 %. The majority of participants, 68.5 %, were females. The Wilcoxon Signed Rank Test was used to assess undergraduates' satisfaction with the availability of resources and interpersonal interactions, both of which are necessary for doing online presentation-assessment efficiently. The results revealed that, availability of good network connection ($P<0.001$), speed of connection ($P<0.001$), essential electronic devices (E.g. Laptop, Wi-Fi, etc.) ($P<0.001$), digital software tools (Zoom, PowerPoint, etc.) ($P<0.001$) and personal relationship with academic staff ($P<0.001$) were significant and undergraduates were highly satisfied with the current status of digital infrastructure facilities and personal engagements that benefited them during the online presentation evaluation programme. Further, the level of competency for online tools was compared with participants' gender. The results of the mean comparison disclosed that the level of competency of females (mean = 20.25) for digital tools was higher than male (mean= 18.85). Thorpe (2002) also revealed that more women than men were likely to complete online evaluations when compared with the traditional evaluation methods. However, the Chi-square Test revealed that there is no significant association between gender and their preference for the way of conducting presentation evaluation ($p= 0.696$, $\alpha>0.05$).

Table 1 illustrates the test results regarding undergraduates' level of agreement for each attribute on the online presentation-evaluation that they participated in.

Table 1: The identified preliminary attributes which are significant for an effective on-line presentation evaluation

Factor	Statement	Mean value	Test value	P-value	Comment
1. Convenience of the evaluation	The online evaluation procedure was easy	1.29*	9.39	0.000	**Strongly Agree**
	Easy to follow the guidelines	1.21*	9.22	0.000	**Strongly Agree**
	Online evaluation was systematic	1.18*	5.07	0.000	**Strongly Agree**
	I faced difficulties due to the use of electronic (headphones/screens etc.) devices for a long time	1.18*	7.751	0.000	**Strongly Agree**

Table 1: The identified preliminary attributes which are significant for an effective on-line presentation evaluation

Factor	Statement	Mean value	Test value	P-value	Comment
2. Technical complications	I faced difficulties in uploading the video recording	0.01	0.182	0.856	Not Significant
	I faced difficulties in uploading the other documents (final report and the logbook)	-0.40*	-3.69	0.000	**Strongly Disagree**
	I was anxious about the technical problems that may occur during the sessions	0.31*	3.36	0.001	**Agree**
	I experienced distractions due to personal engagements	-0.02	-0.410	0.682	Not Significant
3. Personal interaction	I could effectively interact with the evaluation panel	0.96*	8.28	0.000	**Agree**
	It was easy to answer the questions in the Q/A session via zoom	1.09*	8.51	0.000	**Strongly Agree**
4. Presentation skills	I could effectively highlight my specific skills (Presentation skills, vocal balance, confidence, etc.) compared to live presentations	0.47*	4.83	0.000	**Agree**
	Playing a video recording made me feel less anxious than a live presentation	0.70*	6.16	0.000	**Agree**

Wilcoxon Signed Ranks Test: Significant Level is 0.05
Cronbach's Alpha: 0.748

Encouragingly, students either strongly agreed or agreed with many positive statements indicating that situations existed, and those arranged which mentioned under the methodology section have created a conducive environment for an effective online presentation-evaluation session. Some concerns were noted for a few statements that came under technical complications. Some of them were beyond the control of both students and the test administrators. Understandably, students agreed on the statement "I was anxious about the technical problems that may occur during the sessions". Hara & Kling (2000) exemplified potential problems of e-learning that have been identified as learner isolation, anxiety, confusion, and learner frustration due to constant exposure to digital tools. Particular attention should be paid to the students' agreement on the statement "I faced difficulties due to the use of electronic

(headphones/screens etc.) devices for a long time". It seems that distractions due to personal engagements have also affected some students. Further studies are needed to determine the ways, particularly the optimum duration for this type of online assessment.

The Wilcoxon Signed-Rank Test revealed that undergraduates are highly satisfied with the online presentation-evaluation process with an associated significance level of 0 .000($\alpha<0.05$). The undergraduates prefer online presentation evaluation (54.03%) over the conventional method (36.29%). Layne et al. (1999) have demonstrated that traditional presentation evaluation and online presentation evaluation were not significantly different. Comparably, the Chi-Square test revealed that there was no significant relationship between the gender and undergraduates' preference for traditional or online evaluation methods ($p =0.418$, $\alpha>0.05$). There was no significant relationship between the degree programs and undergraduates' preference for traditional or online presentation evaluation methods ($p= 0.175$, $\alpha>0.05$).

Conclusions

Based on the feedback given by the students, essential features associated with the convenience of the evaluation, technical problems, personal interactions, presentation delivery skills, and extra-linguistic features were conducive to conduct online presentations evaluation effectively. Female students were found to be more competent in using online tools. Interestingly, undergraduates also prefer online presentation evaluation over the traditional method. Students' main concerns were their anxiousness ahead of online assessments and distractions they experience due to the use of the device for a long duration. Awareness programs and arrangements for a contingency plan for the students who might experience unexpected technical errors were among the students' suggestions for more effective online presentation evaluations.

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RP10

Participation of Students in the Faculty of Science, University of Ruhuna in Extra-curricular Activities: A Preliminary Study

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Abstract

This study explored the student involvement in extracurricular activities (ECA), students' impression on the importance of ECA, difficulties associated in attending ECA and suggestions to improve participation in ECA in the Faculty of Science. An online survey was conducted using a questionnaire prepared as a Google form. Altogether, 292 student samples were obtained from four academic levels, I, II, III and IV representing 18.0%, 30.8% 21.3% and 46.8% of the total number of registered students, respectively, using systematic random sampling method, over a period of seven days. Non-parametric test (Wilcoxon rank test) was performed to determine the significant differences of student participation in ECA using the SAS statistical package.

The findings showed that the participation of Level I students in ECA was significantly lower (P<0.0001) compared to other levels, which was mainly due to converting academic activities to online mode with the Covid-9 pandemic. The involvement of Level II, III and IV students in ECA ranged from 70-72% and showed a significantly higher (P<0.0001) participation in multiple ECA, compared to single event participation. In contrast, Level I students showed lower participation rate in multiple events. Altogether, respondents involved in 50 competitive and 42 non-competitive ECA and a higher proportion, i.e., 70%, participated in non-competitive ECA such as cultural and religious events, workshops, exhibitions, symposiums and seminars. Competitive ECA were associated with sports, arts, Hackathons and quizzes. Both competitive and non-competitive ECA were conducted in faculty, university, inter-university and global level; however, faculty level participation appeared to be higher than the other levels. In total, there were 24 student societies in the faculty through which various ECA have been conducted even at the community level. Students have taken key roles while attending various ECA.

Majority of the students expressed their views in a positive manner towards the participation in ECA. However, students highlighted the difficulties in joining ECA and made important suggestions which are needed to be thoroughly discussed. This basic survey provided a good insight into a progressive approach of ECA in the Faculty of Science.

Keywords: Extra-curricular Activities, Faculty of Science, Societies, Systematic Random Sampling Method, Non-parametric Test (Wilcoxon Rank test)

Introduction

Extra-curricular activities refer to the activities performed by the students outside the framework of course modules. Students do not receive any grades for their involvement in ECA (Dacombe, 2014; Chua et al., 2017). Participation in ECA depends on the students' personal preferences. In order to ensure quality education, it is of paramount importance to encourage undergraduates to be involved in ECA with their full capacity amongst their routine academic work. It has been reported that students who participate in ECA achieved better grades in their academic activities compared to students who did not take part in any of the ECA (Ingale, 2014; Dhanmeher, 2014). Cosinger (2011) indicated that student participation in ECA increases self-confidence, improves innate skills, leadership qualities, mental health and team work within the university. Apart from that, involvement in ECA has a positive impact on securing a place within a highly competitive job market.

Currently, the Faculty of Science has a total of 1182 undergraduates of which 422, 357, 324 and 79 belong to academic Levels of 1, II, III, and IV, respectively. There are numerous ECA organized by the Faculty of Science or the University and all the students can take part in these activities based on their personal interests. The students can join a variety of competitions and/or just participate in diversified events organized by student societies/clubs within the Faculty (Anonymous, 2021) or University. The objectives of this study were to explore the student participation in ECA, identify student impression on participating ECA, difficulties associated with attending ECA and suggestions to improve participation in ECA within the Faculty. The ultimate aim of this study was to facilitate the process of producing graduates bearing different skills via encouraging participation in ECA in the Faculty of Science.

Methodology

An online survey was conducted using a questionnaire which was prepared as a Google form and uploaded to the Faculty of Science Management Information System (FOSMIS) on 17-07-2021. In the FOSMIS, the purpose of the survey was mentioned as follows: "The purpose of this survey is to identify your involvement in various extracurricular activities in the Faculty of Science. The ultimate

aim of the survey is to improve the soft skills, encourage your participation and identify any barriers or difficulties in participating in such activities. Thus, please respond to this as early as possible". In order to collect responses, the systematic random sampling method was used across the student population within which four sub samples were taken from four strata representing four academic Levels, I, II, III and IV (special degree students). In each stratum, responses were obtained from at least 15% of the total number of registered students.

Responses were collected over 7 days. The questionnaire consisted of 10 questions (Table 1). Questions related to personal information on students were excluded from the survey to avoid ethical issues. The responses were analysed by calculating percentages to identify the key trends. The Wilcoxon rank test was used to determine the significant differences of student participation in ECA among the four academic levels with the aid of the SAS statistical package.

Table 1: Questions used in the online survey

No	Section	Question
1	Section 1	What is the current academic level of the degree program you follow?
2		Have you participated in any extra-curricular activity (ECA)?
3	Section 2 (repeated up to 4 times)	Name of the ECA
4		Category of the ECA (competition, community activity, sport, etc.)
5		Role you played in this ECA
6		Scope of the ECA (faculty level, university level, etc.)
7	Section 3	Have you joined any society in the faculty? Mention the names of the societies.
8		Do you think that ECA are important? Write the reason for your answer.
9		Any barriers/difficulties that you have faced in attending such ECA in the faculty/University?
10		Your suggestions to increase the participation of students in ECA?

Results and Discussion

Of the total number of participants, Level I, II, III and IV students represented 26.03%, 37.67%, 23.63% and 12.67%, respectively. As a whole, 62.33% of the students participated at least in a single ECA. The level of participation significantly (Chi-Square = 25.59; df = 3; $P<0.0001$) varied with the academic level. Involvement of Level I students in ECA, was lower than other three levels (Figure 1). The highest percentage participation was detected with Level III students (72.46%) while Level II and Level IV participation was similar (70%). Of the students who participated in ECA, 58.79% showed

multiple participation (Figure 2). Significant differences were detected in student participation between single or multiple events among the four academic levels (Chi Square = 15.78; df = 3; $P< 0.0013$). Multiple participation in ECA was higher in the students in Levels II, III and IV compared to the participation in single events. However, the opposite was detected in Level I students.

Among the ECA, two main categories can be identified as competitive and non-competitive. Thirty percent of the students attended various competitive ECA while 70% have taken part in non-competitive ECA (Figure 3). In total, 50 competitions were detected, i.e., sports, cultural, Hackathons and quiz competitions mainly, and conducted in faculty, university, inter-university and global levels. Students have attended 42 non-competitive ECA, e.g., cultural and religious events, workshops, exhibitions, symposiums and seminars, and community level activities. The highest participation in ECA, i.e., 48.49%, was detected in the faculty level followed by the university level (30.15%). 2.01.% (08 students) have attended international competitions namely IEEE Xtreme-5 and Code-Jam-2 under Hackathons. In Level 1 students, participation in non-competitive activities were higher than the competitive activities. However, such a trend was not noticeable for the other three levels. Some students played key roles in these ECA activities, i.e., captain, vice-captain, president, vice president, secretary, team leader, ambassador, chief organizer. In the Faculty of Science, 24 student societies have been established and students engage in various ECA in connection with different societies. These societies can be classified as subject related, religious, research orientated, sports, arts, language and enhancement of leadership qualities. Majority of societies are subject- related.

Ninety nine percent of the students mentioned that the participation in ECA is of great importance (Table 2). However, some students have mentioned that they were unable to balance the ECA with the academic work. A few students stated that they did not get any chance to attend ECA even though they were involved in ECA at school level. Students also indicated 17 difficulties/barriers in attending ECA (Table 2). Further, 13 important suggestions were forwarded to improve participation in ECA (Table 2).

In conclusion, students of the Faculty of Science are greatly involved in competitive and non-competitive ECA. A higher proportion of students maximally utilized the opportunities mainly within the faculty. Diversified societies established in the faculty enabled students to be involved in ECA. Community targeted ECA are of great importance to create links between University of Ruhuna and the society. The low level of participation in ECA in Level I students was associated with the recent Covid-19 pandemic which led students to stay at home after completing their academic work for only one semester. The difficulties mentioned by students in attending ECA are needed to be discussed.

Suggestions made by students are also taken into consideration to promote participation in ECA to ensure quality in university education.

Table 2: Information on the importance of extracurricular activities, difficulties faced and suggestions to improve provided by students

Question	Student responses
Importance of ECA	● Improve knowledge, abilities and attitudes, confidence in achieving targets, decision making, leadership qualities, communication, organizing skills, self-behaviour, time management, teamwork, physical and mental wellbeing, sharing and caring ● Learn to work under pressure, face challenges and find solutions to practical problems ● Building extra qualifications need for the career ● Help to identify themselves and to understand their potential ● Help to become versatile in many fields / collect various life experiences ● Expand networking with people (people from other batches, faculties, universities, local/foreign professionals), improve social life and unity ● Understand the responsibility as a citizen and to make a good impact on the society ● Get chances to uplift the University ● Get chances to obtain University-level certificates
Difficulties faced	● Degree requirement of 80% attendance for academic activities and attendance related issues arise when participating for practices ● No coaches for sport practices and need to travel a long distance to attend sport practices, inability to stay at university in the evening/ weekends, safely issues in travelling back to residence at night after practices ● Heaviness of academic work/ difficulty in balancing ECA with academic work/ time management issues ● COVID19 pandemic ● Do not like online activities/ heavy data charges/ connectivity related issues/ shifting activities to online mode ● No activity/society in university which matches the preference ● New to the university environment and studying pattern, do not know about available ECA/ do not know how to join ● Tried joining but no official responded/ lack of communication ● Fear to get responsibilities/ scared to join due to less experience working in teams and less English proficiency ● Less direction and less facilities/ resources/ sponsorships/ funding problems

Table 2: Information on the importance of extracurricular activities, difficulties faced and suggestions to improve provided by students

Question	Student responses
	● Peer pressure due to object ragging/ political stigma associated with students ● Being bias in selecting/giving opportunities/ no equal opportunities for all students ● Lack of help from Faculty/Department in organizing events/ preparing funds ● Faculty's/department's lack of knowledge about local/ global trends in activities ● Societies do not have any determination in conducting activities/ obtaining opportunities ● Health related issues and economic issues
Suggestions to improve	● Allocate a specific time/more time to participate in ECA ● Encourage students to get involved in ECA (by academics and by professionals from career world) ● Include compulsory requirement of participate in ECA to the curriculum ● Arrange diverse programs to meet diverse preferences ● Arrange programs where students can use academic knowledge in practical situations ● Arrange games/joyful activities to attract students to ECA/Societies ● Effectively communicate information related to ECA (through the website, FOSMIS, social media, a virtual notice board, orientation program, awareness sessions etc.) ● Provide proper appreciation/certificates for participating/organizing events ● Make arrangements to provide equal chances for every student despite of being biased/ avoid political influences ● Make arrangements to improve communication skills of students (less communication skills lead them not to participate in ECA) ● Improve sports facilities/coaching at faculty ● Continue ECA virtually during the pandemic/ Vaccinate and start physically as soon as possible ● Provide financial support ● Help students with difficulties (fear, lack of confidence) to step out of their comfort zones

(The study was based on the online survey and total number of respondents = 292).

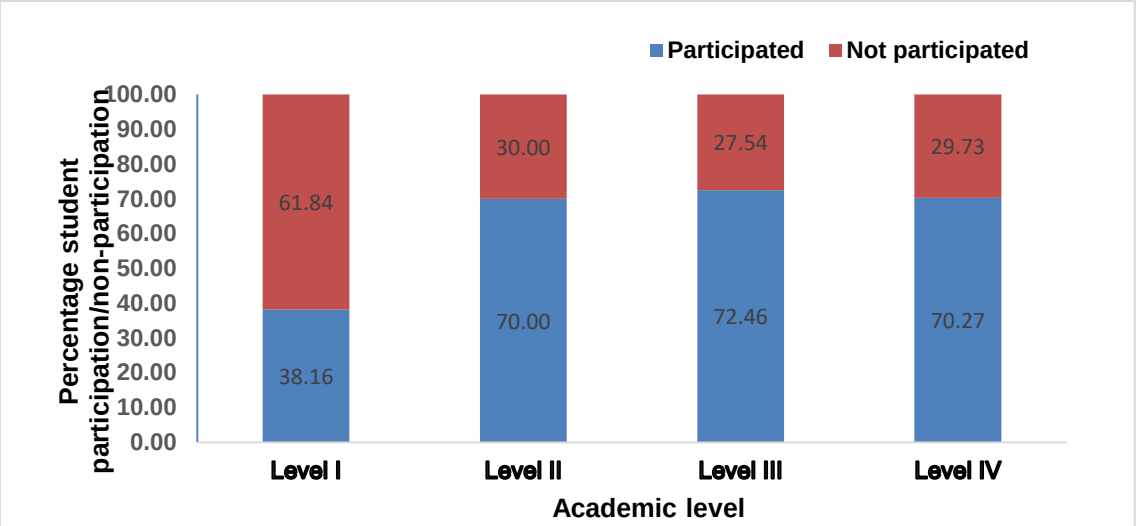

Figure 1: Status of student participation in extracurricular activities, Faculty of Science. The study was based on the online survey and total number of respondents = 292

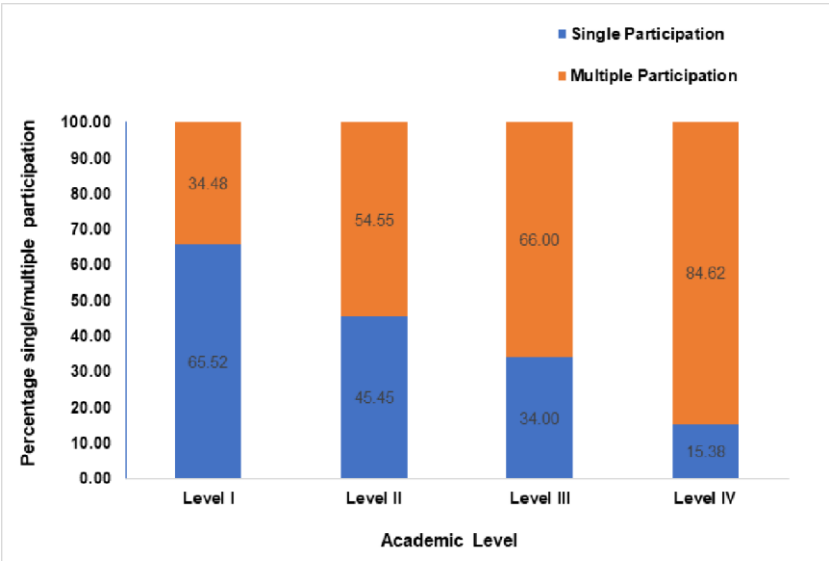

Figure 2: Status of single/multiple student participation, Faculty of Science. The study was based on the online survey and total number of respondents = 292).

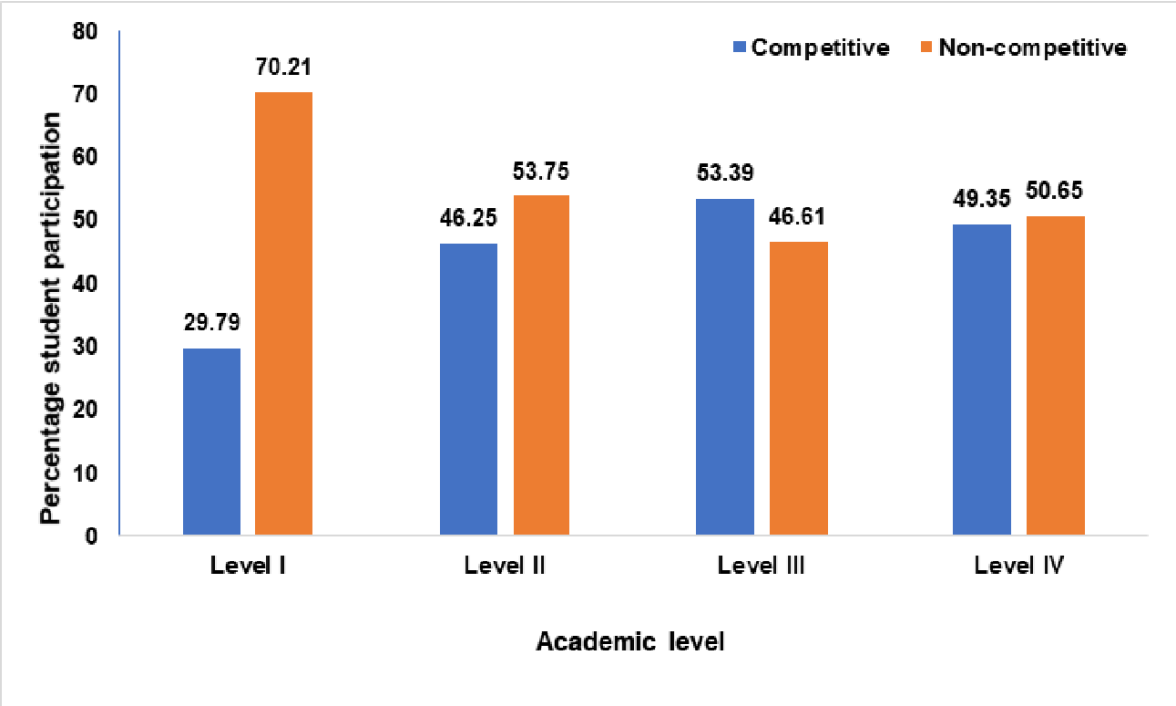

Figure 3: Status of student participation in competitive and non-competitive events, Faculty of Science. The study was based on the online survey and total number of respondents = 292).

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RP11

Perception of Academics on Quality Assurance Reviews and Information System Support in Sri Lankan Universities

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Abstract

Recently, Sri Lankan higher education institutes aggressively focus on quality assurance. However, many practical difficulties have emerged in implementing information systems and in conducting quality assurance reviews. In this context, quality assurance functions have become an additional burden, and some academics are reluctant to engage in the quality assurance process. Nevertheless, empirical evidence regarding this issue is limited. Therefore, this study explores the academics' perception of the quality assurance reviews and information system support for such reviews in this scenario. The study collected data from a sample of 88 academics from Sri Lankan state universities through an online survey conducted during January and May in 2021. The questionnaire mainly focuses on academics' perception of the quality assurance review process, providing evidence for quality assurance reviews, information systems support for quality assurance functions and expected improvements for information systems. The findings suggest that academics have a positive impression on quality assurance reviews. Further, they believe that information systems can facilitate quality assurance reviews. Nevertheless, given that the contribution of existing information systems towards quality assurance is limited, academics expect further improvements to the existing information systems. Therefore, while highlighting the fact that academics generally have a positive attitude towards quality assurance, this study signals the necessity of more studies to investigate how information systems can be effectively implemented to facilitate the quality assurance process.

Keywords: Quality Assurance, Higher Education, Information Systems, Sri Lanka

Introduction

During the last two decades, Sri Lankan higher education institutions (HEIs) have made substantial improvements in quality assurance (QA) (Bandara, 2018; Imbulgoda, 2019; Peiris et al., 2013; Wickramasinghe, 2013; Wickramasinghe, Peiris and Peiris, 2014). The establishment of the formal QA authority for the higher education system, implementation of the Sri Lanka Quality Assurance

System (QAS), formulating SLQF, conducting external reviews, subject benchmarks, review guidelines are some of the milestones in this process. Internal QA mainly focuses on ensuring quality through internal mechanisms. External QA mainly focuses on evaluating the quality through reviews by independent external experts, *i.e.*, subject review, programme review, institutional review, and library review. Mainly, these external reviews follow an accreditation type evaluation process that grades the respective institute, department, or study programme according to pre-specified quality standards. HEIs are highly dedicated to acquire higher grades in these reviews, competitively.

Nevertheless, QA activities have added various extra works to the universities (Imbulgoda, 2019). Since most of the functions are manually performed and the lack of dedicated staff, QA activities have become an additional burden for the HEIs (Anderson, 2006; Peiris, Wickramasinghe and Peiris, 2014). Moreover, Imbulgoda (2019) has highlighted the resistance of academics in the implementation of QAS resulting from tedious bureaucracy, time-wasting documentation of QA activities, lack of communication, and low involvement of QA data in decision making. Further, the shortage of special funding and lack of human and physical resources have constrained the implementation of the QAS (Imbulgoda, 2019). Nevertheless, the perceptions change rapidly along with the reforms brought into the system. Therefore, this study aims to assess the perception of academics on QA reviews and the extent to which information systems support and expected improvements of information systems in QA activities.

The objectives of the study were to assess the academics' perception of the QA reviews, the academics' perception of the contribution of information systems to the QA reviews by provisioning required evidence. The study also aimed at exploring the current applications of information systems for the QA process and to identify the necessity of the expected improvements and new system developments of information systems to facilitate the QA process.

External QA reviews are conducted by the Quality Assurance Council (QAC) with the support of a team of external experts based on pre-specified quality criteria (Bandara, 2018). This assessment process mainly focuses on examining the past evidence on activities performed by the HEI. Examining the documentary evidence, physical observation, and stakeholder interviews are the primary sources for this assessment. While online electronic resources are examined, manual documents are heavily used as evidence. Even though some of the evidence is documented along with the operational activities, they are not fully compatible with the requirements of QA. Moreover, in some cases, there are lapses in the documentation process. Therefore, HEIs have to re-organize documentary evidence specifically for the QA reviews.

In addition, several implementation issues also have been identified in the QA process. For instance, separation of QAS from the regular activities, lack of interest and engagement of academic staff and students with the QA activities, minimum involvement of stakeholders in the QA activities are the key issues (Imbulgoda, 2019). Further, Peiris et al. (2014) have emphasized that some academics consider the QA process an additional burden and non-value-adding activity within the system. Consequently, they are reluctant to spend time on document preparation and other QA-related activities. However, this academic resistance to the QA is not specific to Sri Lanka, and it is prevalent in the international context (Anderson, 2006). Moreover, most academics do not prefer audit-type quality evaluations that affect their autonomy, freedom, and professional status (Cheng, 2010; Mustaffa, Sharifah Norul Akmar, Rosman and Fatimah, 2007). Therefore, academics' perception of QA reviews is more critical for the success of the external reviews, the validity of the results, and the sustainability of the QA process. Further, as mentioned in the introduction, HEIs employ many information systems to perform different activities. Although these systems provide many benefits, their support for QA is not evident. Therefore, this study explores the academics' perception of QA reviews and the contribution of information systems to the QA process.

Methodology

This study followed a survey-based quantitative research approach. An online Google form was distributed among the academics of the Sri Lankan state universities using the snowball sampling technique. Finally, 88 responses were received from January 2021- May 2021. Responses from some of the universities were not adequate. Exploratory data analysis techniques were mainly used for data analysis.

The questionnaire consisted of main four sections that cover responders' general information, opinions regarding the QA reviews, provision of required evidence for QA reviews, usage of information systems for specified activities concerning the QA. Responders' general information was collected by section one. Section two consists of opinions about the existing quality assurance reviews (subject review, programme review and institutional review). Existing methods and associated issues of provisioning required evidence for QA reviews were concerned in section three. The last section of the questionnaire mainly focused on collecting data on the application of specific information systems, such as students information management system, learning management system, online teaching platforms, and experiences of information system applications on different activities i.e., collecting students feedback, managing student internships, examination information management, etc.

Table 1: Responses from each university

University	Professor	Senior Lecturer	Lecturer	Grand Total
Colombo	1	5	-	6
Jaffna	2	4	-	6
Kelaniya	2	4	2	8
Moratuwa	3	10	1	14
OUSL	1	2	1	4
Peradeniya	2	2	1	5
Rajarata	-	2	-	2
Ruhuna	3	9	6	18
Sabaragamuwa	-	3	1	4
South Eastern	-	2	-	2
Sri Jayewardenepura	2	3	3	8
Uva-Wellassa	-	1	6	7
Wayamba	-	3	1	4
Grand Total	16	50	22	88

Source: Survey data

Results and Discussion

As illustrated in Table 1, 88 academics have responded to the questionnaire representing state universities. The sample represents 18% are professors, and 56% are senior lecturers. Accordingly, the majority of the responded academics are senior staff of the university system. The involvement of the senior staff in the survey has increased the trustworthiness of the result.

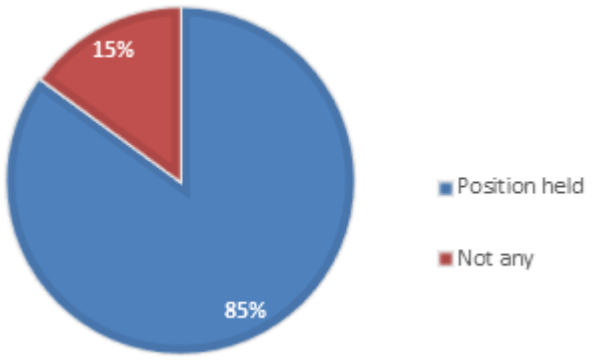

Figure 1: Positions held related to QA activities

According to Figure 1, 85% of the respondents have been involved with QA activities by being a member of CQA, IQAC, Programme Review, Institutional Review, etc. Therefore, all the respondents are supposed to have a good idea of the QA process in Sri Lankan HEIs. Therefore, according to Table

1, and Figure 1, the majority of respondents are senior academics of the university system who have been actively involved with QAS by giving a contribution to the QA activities in different ways.

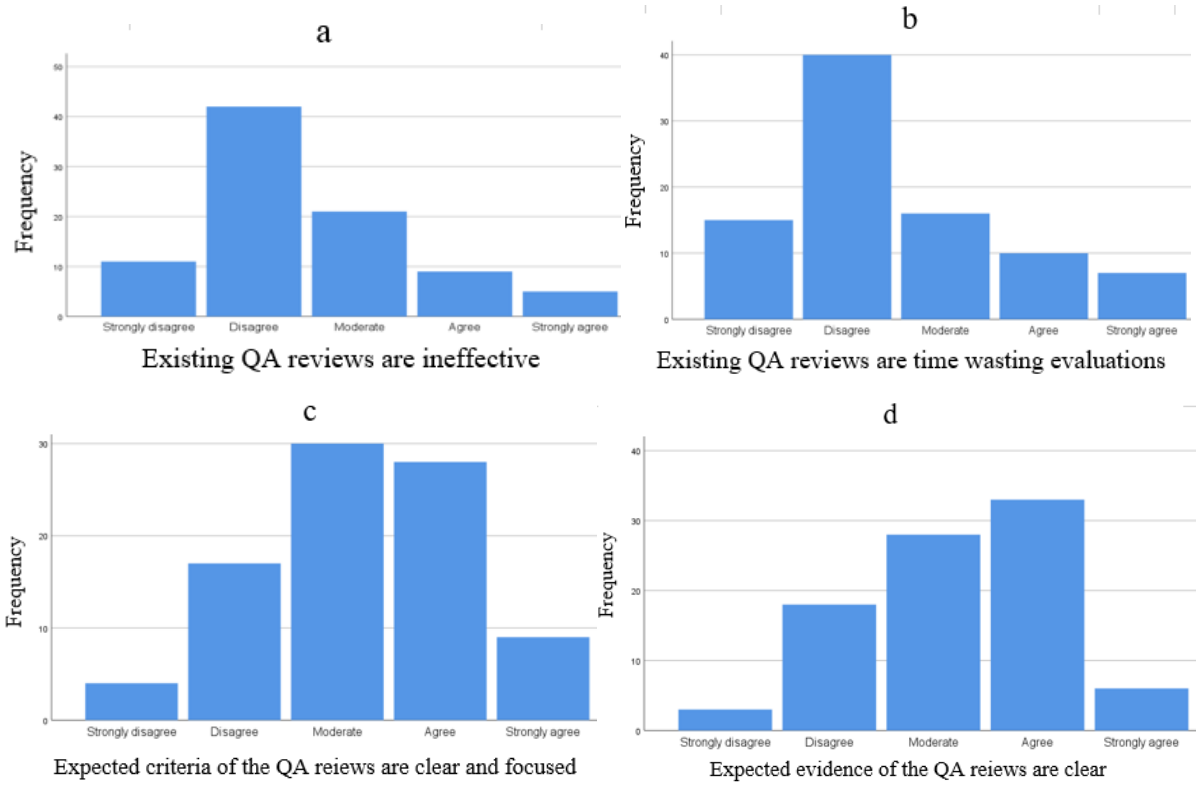

Figure 2: Impression of academics on QA

Figures 2a, 2b, and 2c show that respondents generally have a positive impression about the QA reviews though the evidence is weak. Moreover, as shown in Figure 2d, the respondents believe that the expected evidence of the QA reviews are clear enough. But, several researchers have highlighted reluctance from academic staff for active contribution to the QA process and unwillingness to accept quality audit type evaluations which affected their autonomy, freedom, and professional status (Anderson 2006; Imbulgoda 2019; Peiris et al., 2014). However, these results do not meet too much resistance from academics for the QA process.

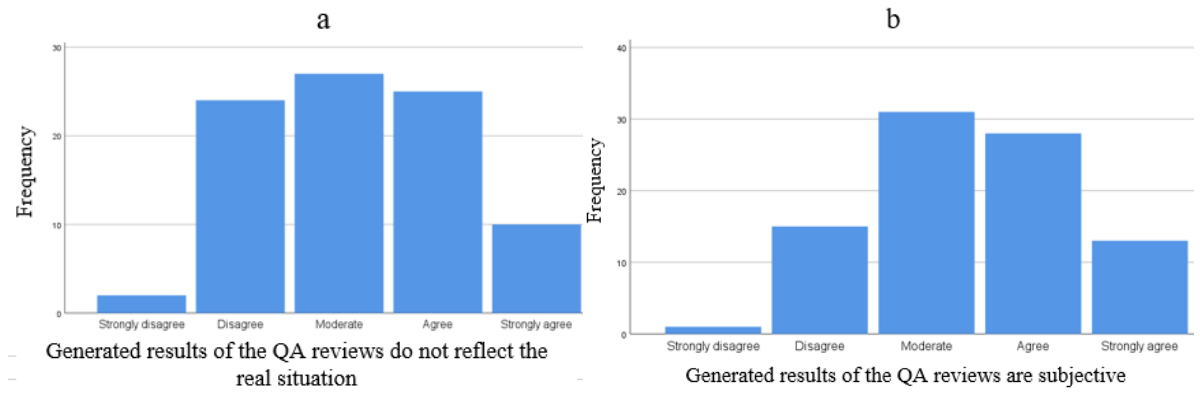

Figure 3: Validity and objectivity of the review results

However, Figures 3a and 3b show the respondents have concerns over the validity and objectivity of the review results. It reflects the trustworthiness of the QA reviews among respondents and impacts on the sustainability of the QA programme. The majority are not confident that the review results reflect the actual situation and the results are objective. Bandara (2018) also has highlighted that review teams have made subjective decisions because some areas are not covered by the standards in review manuals. Therefore, QA authorities have to formalize the QA review process further building trust among the stakeholders.

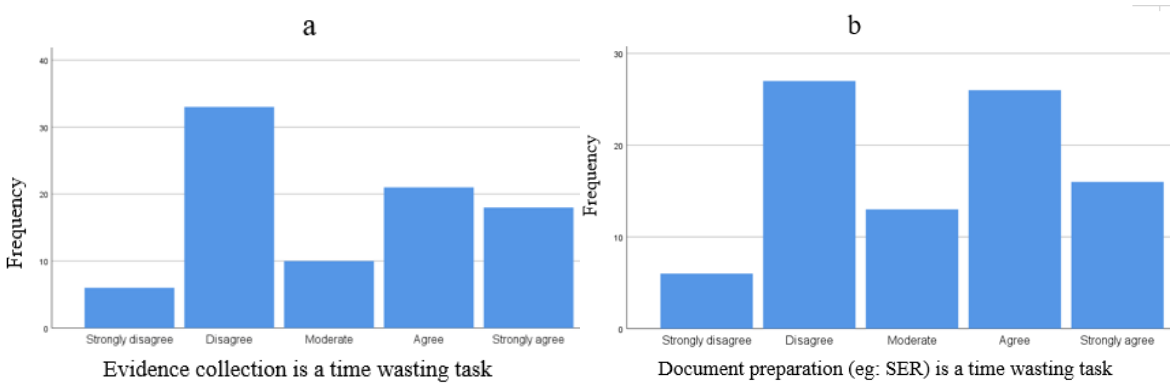

Figure 4: Time consumption of evidence collection and document preparation for QA reviews

Generally, review teams expect a variety of hard and electronic documents as evidence for the external reviews (Jensen, Kohler, Jones, Lindesjöö and Banaszak, 2010). But several scholars have highlighted that this time-consuming documentation and review-based evidence preparation are the main reasons for reluctance from academics for active contribution to the QA process (Anderson, 2006; Imbulgoda, 2019; Peiris et al., 2014). Figures 4a and 4b also show that the opinion is divided on the effectiveness of the time spent on evidence collection and document preparation. Therefore, information systems based evidence accumulation and summary report generation mechanism will formalize the QA process while increasing the transparency of the evaluation process.

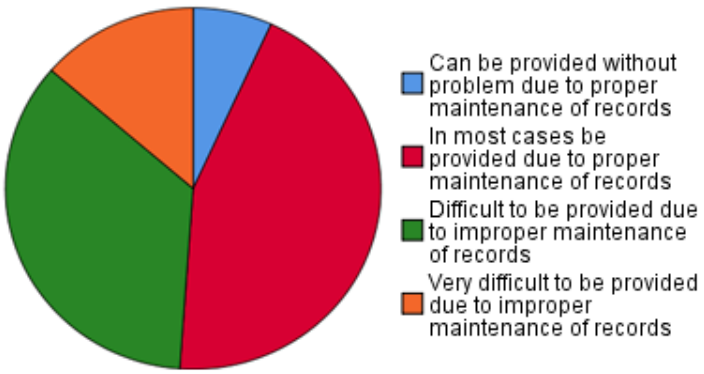

Figure 5: Provision of past evidence required for QA reviews

Figure 5 suggests that there are substantial difficulties in providing required evidence for QA reviews. Nearly half of respondents have expressed their difficulties in providing required evidence for external reviews due to record maintenance issues. These results further confirmed the argument made under Figure 4 that universities face difficulties in the preparation and maintenance of evidence in QA reviews.

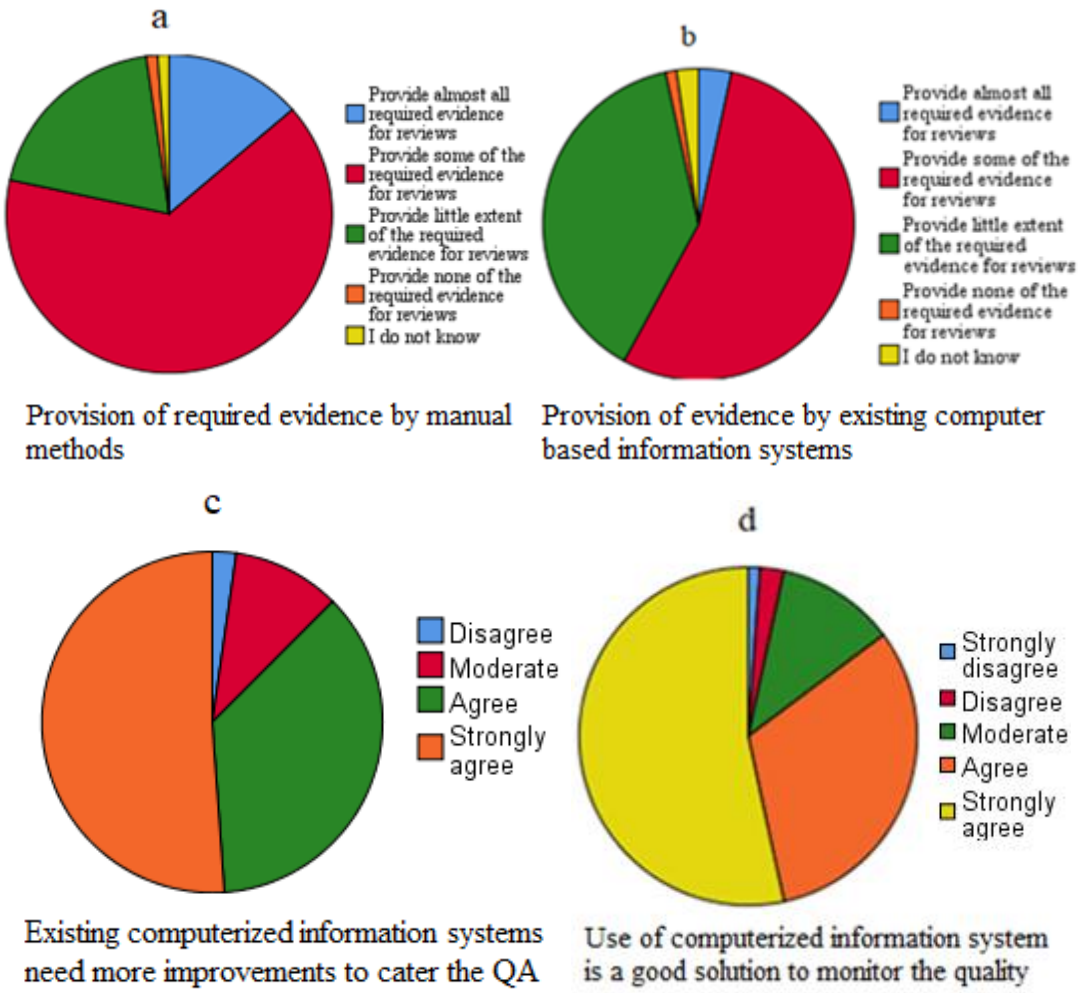

Figure 6: Manual methods and applications of information systems in QA and expected improvements

Figure 6 (6a, 6b, 6c, and 6d) shows ample space for improving manual procedures and computer-based information systems to cater to the evidence requirements of QA reviews. Figures 6a and 6b show that manual methods are heavily used to prepare the required evidence while information systems provide only some of the evidence in many cases. This minimum usage of information systems to manage QA data has been highlighted by Gamage, Pradeep, Najdanovic-Visak, and Gunawardhana (2020) in the Sri Lankan context. However, as illustrated in figure 6c existing information systems need to be improved to cater to the quality assurance. Further, there is a strong consensus among the respondents that computerized information systems can facilitate the review process significantly. As shown in

Figure 6d more than 50% of respondents have strongly recommended that a computerized information system can be employed to monitor the quality.

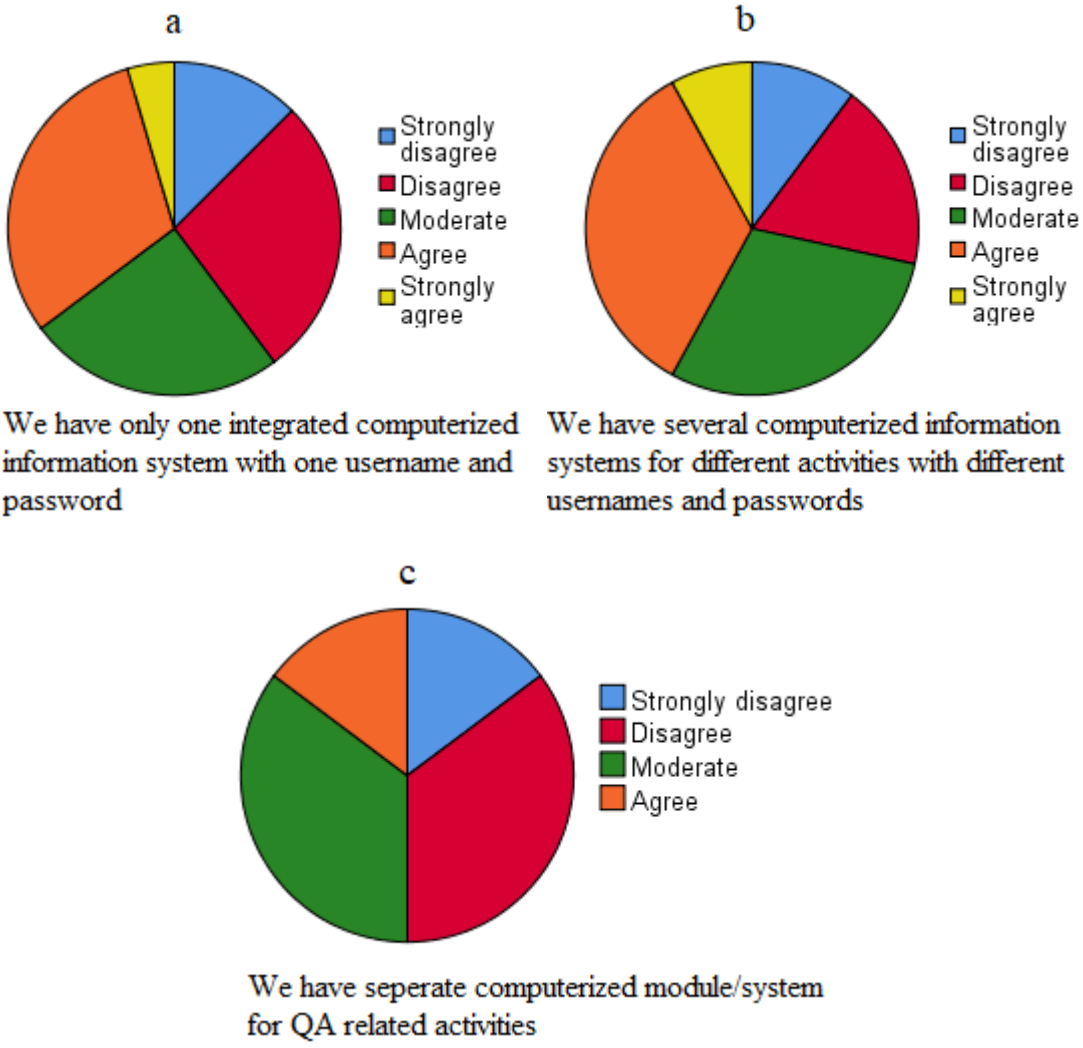

Figure 7: Integration of existing information systems and availability of a separate information system for quality assurance activities

Figures 7a, 7b, and 7c illustrate that information systems are not well integrated, and quality assurance information systems, in most cases, run separately. This is ineffective and creates issues relating to data integrity and redundancy, and results in large-scale inefficiencies. Accordingly, as illustrated in Figure 6, information systems can be employed to facilitate QA-related activities, but existing information systems have not been properly integrated and QA-focused information systems have not been established widely.

Figure 8 shows the usage of three main information systems in HEIs, i.e., Students Information Management System (SIMS), Learning Management System (LMS), and Virtual Teaching Platforms. SIMS is mainly used to manage the students' information while LMS and Virtual Teaching Platforms

are used for content management and delivering online lectures, respectively. These three information systems are highly relevant for the quality of student administration and the teaching and learning process.

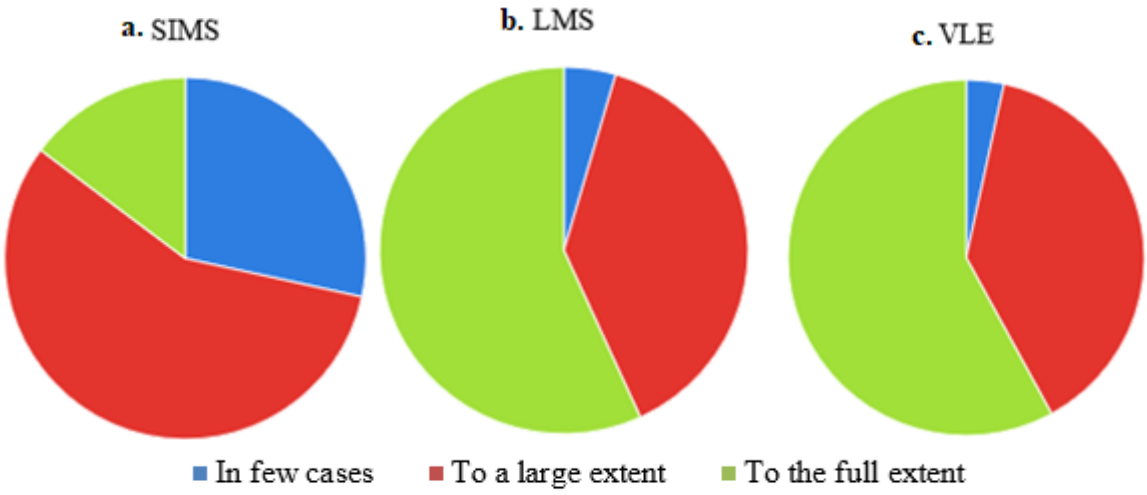

Figure 8: Usage of SIMS, LMS and VLE

According to the figures, LMS and VLE are widely used by academics while SIMS is also used up to some extent. Usage of LMS and VLE has been significantly increased since data was collected in the pandemic period. The next three figures will further evaluate these systems individually.

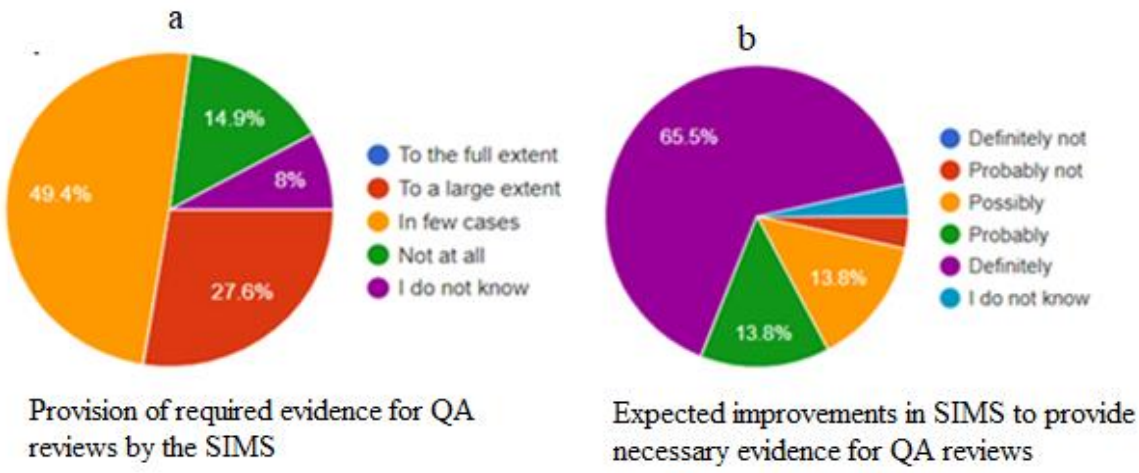

Figure 9: Provision of required evidence by SIMS and expected improvements

SIMS plays a major role in universities by facilitating the required digital platform to manage the students' academic and administrative related activities. Figure 9 (9a and 9b) illustrates the current situation of the SIMS in the provision of required evidence for the QA reviews and required improvements. Figure 9a shows that SIMS significantly contributes to the provision of required evidence for QA reviews. However, according to Figure 9b, the majority of respondents expect

definite improvement in SIMS concerning the provision of required evidence for QA reviews. Therefore, functions of existing SIMS need to be more aligned with the QA requirements of the universities.

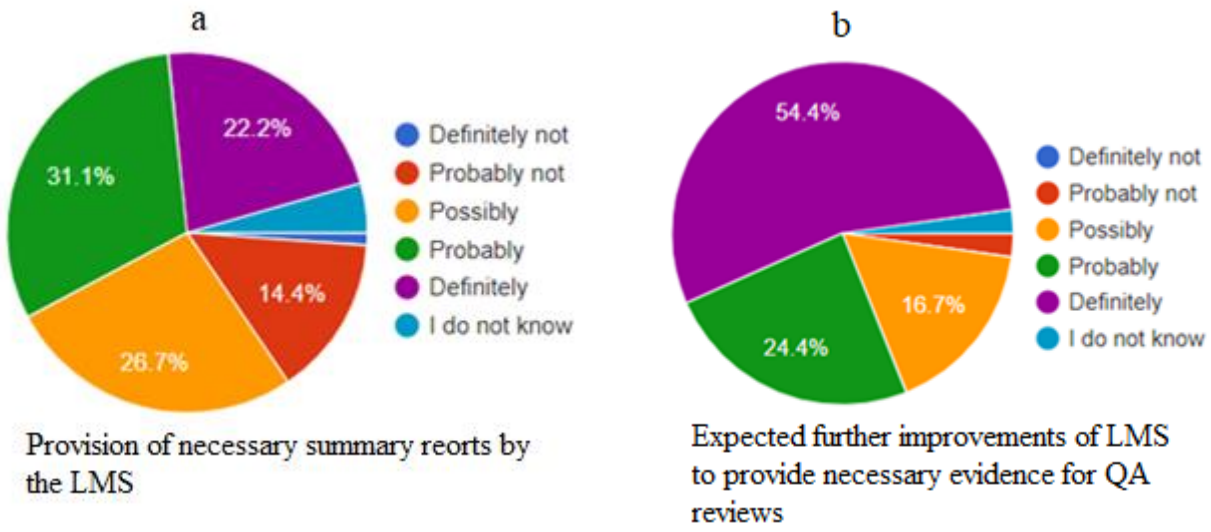

Figure 10: Provision of summary reports by LMS and expected improvements

LMS is a widely used web-based application to plan, implement and assess the learning process. Generally, LMS provides a significant contribution to increasing the quality of the teaching and learning process. Figures 10a and 10b illustrate the existing situation and expected improvements of LMS in providing evidence for the QA reviews. As shown in figure 10a, LMS provides necessary evidence for the QA reviews but not to the expected level. Therefore, respondents expect more improvements in the LMS in respect to providing aggregated summary reports. Because academics use more common LMSs such as "Moodle" that facilitate only limited user activity summary reports.

Figures 11a and 11b illustrate the contribution of VLE to the provision of quality teaching and expected improvements. Due to the current pandemic situation, academics have to deliver lectures over VLEs like ZOOM. As discussed in LMS, ZOOM also provides only limited reports on student participation. And those reports have limited optimization facilities and do not focus on quality aspects of the teaching-learning process. Therefore, the majority of academics expect more improvements in VLE concerning providing summary reports.

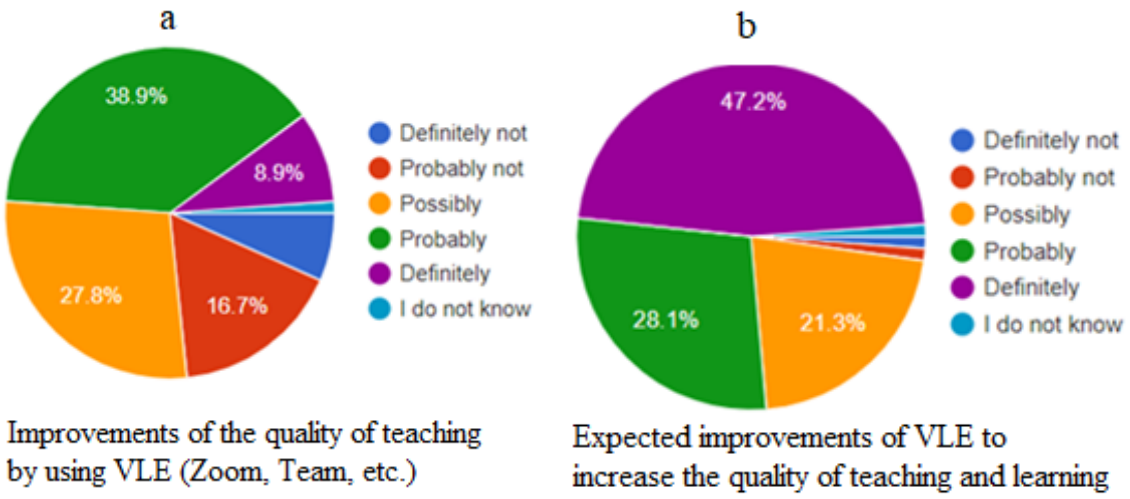

Figure 11: Quality improvements of teaching by VLE and expected improvements

Table 2 illustrates the usage of different information systems, other manual or alternative methods in managing daily activities in universities. Those activities are students' feedback management in teaching and learning, student assessments, internship, extra-curricular activities, general administration, human resource management, financial activities, and physical resources management. These are more critical activities that are directly related to improving the quality of universities. According to the results, many activities are performed through manual methods. In a few cases, universities use standard information systems for these activities. In addition, results show that Google forms and LMS modules usually apply for feedback collections in several activities.

Table 2: Usage of information systems, manual methods, or any alternative methods for activities

Activity	Not any method	Manual	Excel/ Access	Google forms	LMS module	Standard software system	Do not know
Getting student responses during the class	7	22	0	13	32	8	6
Student feedback on teaching	2	26	1	15	36	5	3
Student feedback on course units	5	23	1	13	36	6	4
Student feedback on university service centres	11	20	2	12	15	3	25
Audience response at online teaching (eg: Mentimeter, Padlet)	24	5	1	9	20	9	18
Student assessment process (examination)	14	23	4	2	33	5	7

Table 2: Usage of information systems, manual methods, or any alternative methods for activities

Activity	Not any method	Manual	Excel/ Access	Google forms	LMS module	Standard software system	Do not know
Student internship	19	25	6	5	10	5	18
Student extra-curricular activities	23	23	4	4	7	3	24
Students grievances/complaints	13	36	1	5	6	8	19
General administrative activities	13	29	1	6	8	12	19
Information of the academic staff performance	11	28	5	7	8	13	16
Information of the non-academic staff performance	15	31	1	4	3	7	27
Information of administrative staff performance	17	26	0	3	4	8	30
Financial activities	8	26	6	3	2	14	29
Utilization of physical resources	8	28	3	4	6	9	30
Total	190	371	36	105	226	115	275

Conclusions

QA reviews evaluate the academic programmes and institutes based on performed internal QA activities. They are evidence-based assessments, and the majority of the evidence is expected in documentary form. According to the results, responders are satisfied with the QA criteria and expected evidence of the QA reviews. However, responders show less confidence in the validity and objectivity of the results of QA reviews. Even though information systems are good sources to maintain evidence, they provide limited QA evidence. The detachedness of QA activities from the ordinary operations of the HEI seems to be the main reason behind the lack of employee commitment to QA. Therefore, existing information systems need more improvements in providing the necessary evidence. Further, many activities where the quality is essential are performed entirely or partially by manual methods. Therefore, these activities do not record necessary QA related evidence.

This study reveals that academics have a positive impression on the QA reviews. In addition, existing information systems do not cater to the QA requirements sufficiently. Therefore, it is recommended to

further improve existing information systems and new information system developments focusing on the QA process.

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RP12

The Impact of an Organized Transport System on Employee Productivity: A Case Study at the Faculty of Technology, University of Ruhuna

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Abstract

The success of an organization is a dependent variable of employee productivity. It also relies on how well the basic requirements of employees are fulfilled to conduct the duties with the fullest commitment. One prominent factor which affects employee productivity is a long and exhaustive commute in and out to work. In the present study, the impact of an organized transport system on employee productivity is investigated with the provided transport facility for Faculty of Technology of University of Ruhuna. In particular, the monthly average of working hours per employee per day, monthly average of late days per employee and time spent for transportation by each employee were analyzed. The variations of the values of above parameters are assumed to be reasonable indicators of the productivity of employees in this study. The required data of employees, the "in" and "out" times, are mainly collected from fingerprint attendance records. The above data were analyzed over a period of 12 months. For the completeness of this study, the employees' work efficiency improvement, satisfaction and commuting time data were collected through a questionnaire. The results of this study provide clear evidence towards a positive impact of proper transport systems on the productivity of employees.

Keywords: Employee Productivity, Transport, Daily Working Hours, Satisfaction, Commuting Time

Introduction

Institutional goals can be attained with the productivity of its employees. It requires the contribution of every employee at their full capacity with full attention on their work. The cumulative impact on employee performance is even higher if a few minutes is added a day and this undoubtedly enhances the overall productivity of any organization. Previous research studies have found that there is a positive impact on job satisfaction of employees from a good working environment and working

conditions (Almeida and Perera, 2015; Nanjundeswaraswamy et al., 2019). The Satisfied employees are highly motivated for their work, empowering them to be more productive which benefits the organization in the long run (Agarwal et al., 2020). However, a factor that gravely affects employee productivity is a long exhaustive daily commute to their work. As a result, employees tend to feel tired and less productive at work (Qutubuddin, 2017). Thus, it is essential to minimize this time wasting on daily commuting in attaining employee productivity and organizational goals.

Minimizing the commuting time in rush hours has paid considerable attention for a long time (Sampaio et al., 2008). In urban settings, traffic congestions have been a major problem in increased commuting time of passengers (Bull, 2003; Kumarage, 2004). A well-organized traffic signal management plan will provide multiple benefits in minimizing traffic congestions in rush hour (Fehon and O'Brien, 2015). Alternatively, the lack of proper transport methods would also significantly increase the commuting time. The problem arises due to recent trends in establishing industries and institutions in rural areas having sufficient space for future development. However, the transport systems are not properly developed in such areas for accommodating the needs of employees.

An exigency plan, aiming at enhancing the productivity of employees, is to introduce an organized transport system for daily commuting. In the present context many organizations, located in rural areas lacking proper public transport systems, including garments, banks, factories, universities tend to provide transport facilities to their employees for their daily commuting needs. Rural areas with tranquillity and scenic beauty are ideal locations for establishing academic institutions. The universities established in such areas provide transport facilities to its staff and students for daily commute (Cyride, 2021). Systematic and Scientific approaches have also been tested in analyzing and improving employee transportation systems in universities using home addresses of employees as an input (Akpinar et al., 2021).

Faculty of Technology, University of Ruhuna is one of the leading technology faculties in Sri Lanka. This is in Karagoda-Uyangoda, Kamburupitiya a significant distance away from Matara. This area requires infrastructure development including transportation services. Currently, the faculty have about 800 students with more than 100 staff members. The staff members who daily transit via Matara and Godagama-highway exit face difficulties due to non-availability of proper public transportation service to the Faculty of Technology. Moreover, all the daily commuting staff and students must arrange a private transportation method from Kamburupitiya clock tower to the Faculty of Technology, which is about 3.5 km. The distance from Godagama-Palatuwa exit to the Faculty of Technology is about 15 km, which takes about 30 min with a proper transport service. However, there is no proper transport service on this route. Usually, staff and students have to transit via Matara bus-stand to Kamburupitiya

clock tower and again from there, they have to arrange private transport service to the Faculty of Technology. This route takes about 1.5 h of extra time and incurs a huge cost for daily travelling. As a workable solution to overcome this issue, the faculty started to use the university bus from 13th November 2020 under regular bus fare to fulfil the transport needs of staff and students of the Faculty of Technology. The main objective of this research is to investigate the improvement in productivity of employees with the provided transport facility for their daily commuting needs for work, which ultimately enhances the organizational performance.

Methodology

In this study, the number of working hours per day, number of late days and time spent on daily commute is analyzed. Further, employees' feedback on work efficiency and mental relaxation were obtained through a questionnaire. The variations of the values of above parameters are assumed to be reasonable indicators of the productivity of employees in this study. The provided transport service is mainly used by lecturers, administrative staff, Management assistants, Academic support staff, temporary demonstrators and temporary lectures. These employees are engaged in various activities and duties in a day. Thus, the conventional concepts of output/input measurements for productivity are not applicable for academic institutions.

The employees, who regularly use this transport service, are considered for this study. Currently, more than 20 staff members use the transport service. The attendance records of the administrative staff, Management assistants, Academic support staff, temporary demonstrators and temporary lecturers are considered in this study. The required data on employees' "in" and "out" times are collected from fingerprint attendance records and signature book up to September 2020. Starting from October 2020, attendance of temporary academic staff was collected through the fingerprint system. Therefore, all the attendance records after October 2020 are based on the fingerprint records. Data on March 2020, April 2020, May 2021, and June 2021 are excluded from this evaluation since the university was not properly functioning during those periods due to Covid-19 pandemic.

The number of working hours of an employee "*i*" on day "*d*" $\left(t_d^i\right)$ is calculated based on the following formulae.

$$t_d^i = t_{out}^i - t_{in}^i, \qquad \text{(Eq. 1)}$$

where,

t_{out}^i= out time of employee "*i*"

t_{in}^i = in time of employee "*i*"

The attendance records of each employee throughout a month are considered in calculating the monthly averages. The attendance records of different days of an employee can be considered as independent events. Thus the total number of independent data samples (*Ns)* per month can be considered as $Ns = Md \times Ne$, where *Md* is the number of working days for the month and *Ne* is the number of employees. The monthly average of working hours per employee per day $(\underline{t})$ is calculated using the equation.

$$\underline{t} = \frac{\Sigma_{i,d} \quad t_d^i}{Ns} \qquad \text{(Eq. 2)}$$

For each month about 100 attendance records $(Ns \approx 100)$ were considered in computing the monthly average of working hours per employee per day $(\underline{t})$.

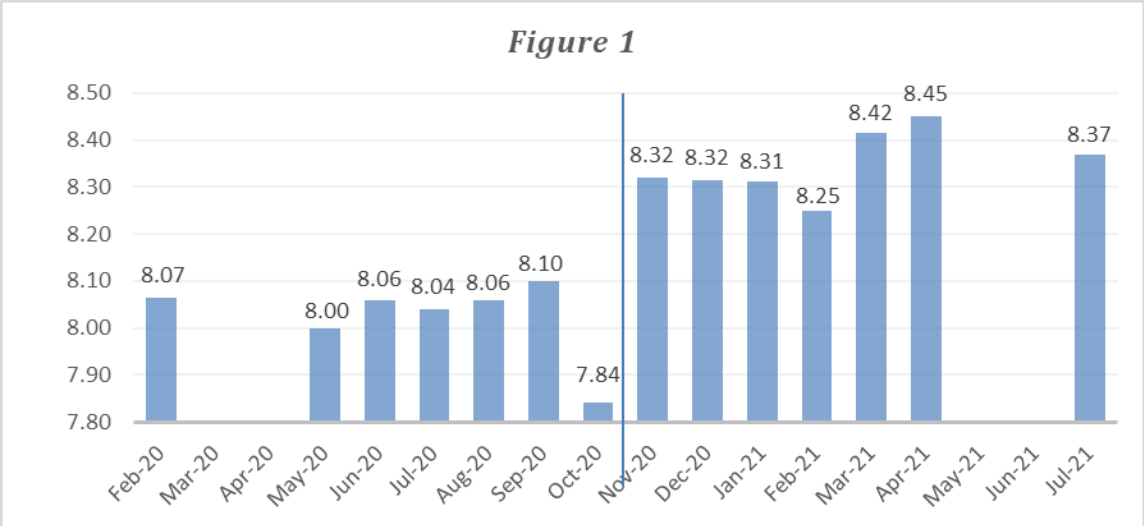

Figure 1: The monthly average of working hours per employee per day (□)against the respective month. The time period considered is from February 2020 to July 2021 which covers both before and after the provision of this transport service for the staff of Faculty of Technology of University of Ruhuna. The transport service was started from the month of November 2020

Results and Discussion

The monthly average of working hours per employee per day (□)against the respective month is depicted in *Figure 1*. The number of working hours in excess of eight hours may represent the extra hours spent on duty. The (□) is around 8 hours until October 2020. The prominent drop of (□) observed in October is due to the implementation of the fingerprint attendance collection on temporary academic staff. From November 2020, the value of (□) is around 8.30 h, which is due to the provided transport service for the employees. The bus reaches the faculty around 8:15am and leaves around 4:45pm giving the employees enough time to complete their task and leave. Thus, due to this organized transport service the working hours per day per employee has been increased by more than 20 min on average. It should be noted that this excess time is not accounted for

overtime claims. It is the utilization of the time wasted for transportation in a productive way. The employees are not required to spend time on arranging their transport as the time before November 2020. They are mentally relaxed since they have a method of transportation. Thus, it is reasonable to assume that this time gain will impact positively towards the employee productivity.

These employees are entitled to have two short leaves per month. A significant decline was observed in the number of short leave days taken by the staff who are regularly using this transport service. Accordingly, this encourages the long working hours, sacrificing that short leave entitlement in the benefit of a relaxed mindset with the release from exhausted commuting.

Number of late days is another measure of assessing employee productivity. Monthly average of late days per employee for each month was calculated based on total late days per month for a sample of employees based on the following formulae.

$$\bar{l}_{monthly} = \frac{\sum l_{monthly}}{n}, \qquad \text{(Eq. 4)}$$

where,

$\bar{l}_{monthly}$ = monthly average late days per employee

$\sum l_{monthly}$ = sum of late days of all employees in a month

n = number of employees

Figure 2

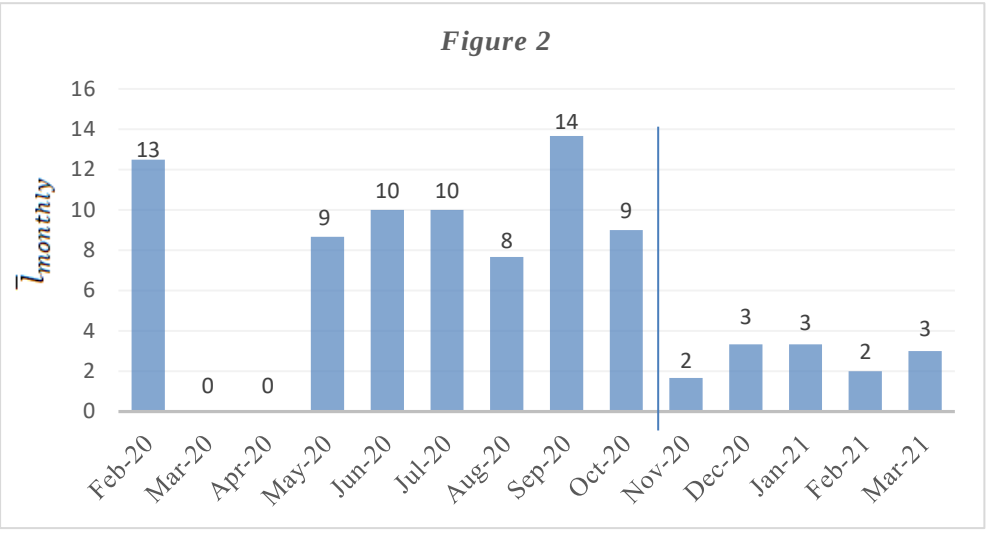

Figure 2:The monthly average late days per employee ($\bar{l}_{monthly}$)against the respective month is depicted. The time period considered is from February 2020 to March 2021 which covers both before and after the provision of this transport service for the staff of Faculty of Technology of University of Ruhuna. The transport service was started from the month of November 2020

The monthly average of late days per employee ($\bar{l}_{monthly}$) against the respective month is depicted in *Figure 2.* The number of late days were retained at a high level which ranges from eight days to

fourteen days until October 2020. From November 2020, the number of late days have drastically decreased with the provision of this transport service. Furthermore, in an ideal situation the number of late days would be zero in which bus arrival and departure times are more organized, considering the factors such as traffic congestion.

Apart from the above improvements, reduction in time spent for transportation and mental relaxation are some other benefits associated with this transport service. The survey was conducted via a questionnaire to collect data on the above aspects and the responses of staff of the Faculty of Technology were reviewed. Time saving is measured with the gap between, time spent with public/private transportation for daily commuting and time spent with university transport for daily commuting. The responses of twenty-three employees using this transport service are considered to investigate this.

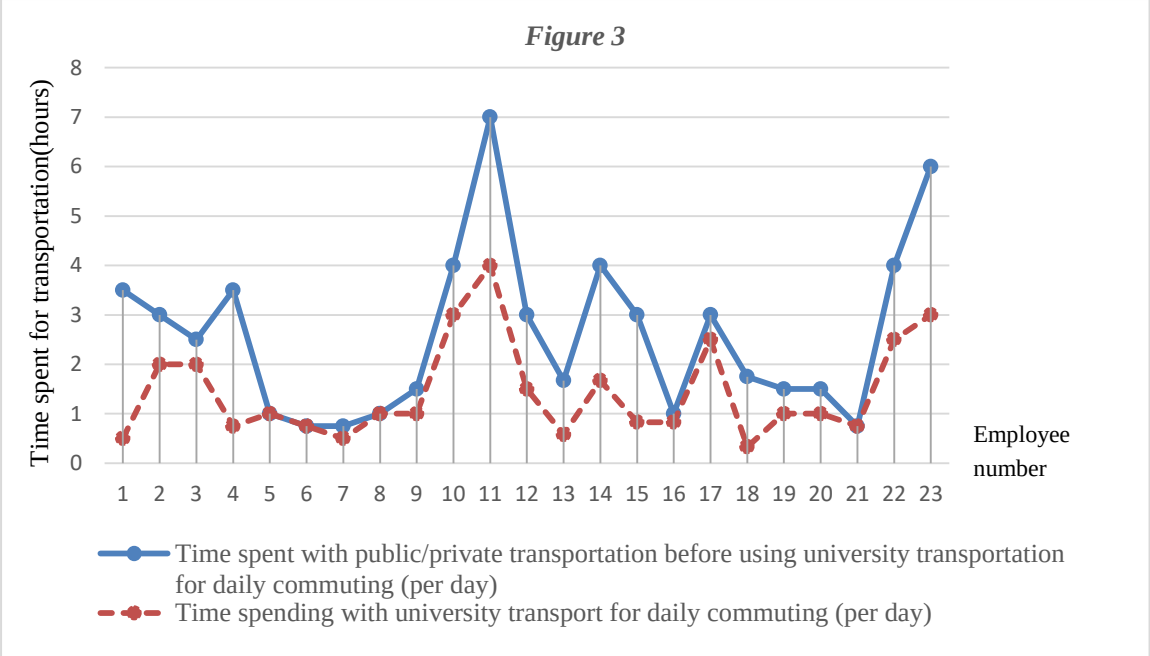

Figure 3: Time saving with the organized transport service in terms of time spent with public/private transportation before using university transport for daily commuting and time spent with university transport for daily commuting

The times spent under both methods are plotted against each employee as depicted in Figure 3. Other than a few employees who have used private vehicles for daily commute before the provision of this bus service, every other employee under this evaluation has experienced a notable time saving due to this transport service. It is noted that about 50% of employees using the transport service save more than an hour in one trip. This undoubtedly grounds for psychological and physical benefits to employees as well as the organization. These employees are less tired at daily commute which saves more energy to work efficiently and effectively. When analyzing the feedback received from the

questionnaire, about 97% of employees stated that they feel mental relaxation with the provided transport service. Further, all the employees using the transport service responded that their work efficiency has been improved with the provided transport service.

Conclusions

A long and exhausting commuting day in and out for work is one of the prominent factors which affects the productivity of employees of an organization. The present study was conducted to investigate the effect on productivity of employees with the provided transport facility for the Faculty of Technology of University of Ruhuna. The main parameters considered in this study are the monthly average of daily working hours per employee $(\underline{t})$, monthly average of late days per employee $(\underline{l}_{monthly})$ and time spent for transportation with and without the transport service. The variation of the values of above parameters are assumed to be reasonable indicators of the productivity of employees in this study. A considerable improvement in the monthly average of working hours per employee per day was observed after the establishment of the organized transportation service. The observed average increment of working hours is about 20 min. Moreover, the monthly average of late days per employee$(\underline{l}_{monthly})$ has significantly decreased with this transport service. The time spent with public/private transportation before using university transport and with the provided university transport facility is also investigated. Accordingly, the employees, who were included to this study have experienced a notable time saving due to this transport service. It was observed that about 50% of employees using the transport service save more than an hour on one trip. Further, the employees using this transport service stated that the work efficiency has been improved with the provided transport service. Finally, the finding of this research provides strong evidence on increased productivity of employees with the provided transport facility for the Faculty of Technology. The results of this study suggest that incorporation of a well-developed transport system in the university would improve the performance and productivity of students and employees and contribute to overall quality enhancement of the institution.

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RP13

Perception of Academics on Quality Assurance in Higher Education in Sri Lanka

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Abstract

Academic staff, being one of the main stakeholder groups, has a major responsibility to maintain quality standards in higher education. Their perception has a significant impact on the quality of the higher education system in any country. However, academics' perspective on quality assurance (QA) in higher education has not been well explored yet in the existing literature, in particular in the Asian context. Thus, this study was conducted with the aim of finding out academics' perception on QA in higher education in Sri Lanka. Purposive sampling technique was used to select academics from ten faculties namely; Faculty of Agriculture (n=68), Faculty of Engineering (n= 85) Faculty of Medicine (n=91), Faculty of Humanities and Social Science (n=115), Faculty of Management and Finance (n=81), Faculty of Allied Health Science (n=23), Faculty of Technology (n=39), Faculty of Science (n=80), Faculty of Fisheries and Marine Science (n=30), Faculty of Graduate Study (n=1) of the University of Ruhuna. A Google form questionnaire consisting of five-point Likert scale questions (1= strongly disagree 5= strongly agree), closed ended questions and check list type questions, was prepared to collect primary data and it was sent to all academics via their university emails. The link was disabled after 14 days of circulation and 67 responses were obtained and the response rate was 10.9%. According to the results, 58.2% respondents were little aware and their knowledge on QA in higher education needs to be further enhanced. Wilcoxon Sign Rank test results obtained from the responses with respect to each statement on impact of QA on teaching and learning process revealed that all statements were valid and significant (p=0.000). According to the results of Wilcoxon Sign Rank test, the impact of QA on academics to develop their professional performance(p=0.000), enabling their continuous learning, motivating to involve in university activities, improve teaching strategies and methods (.000), helping to develop curriculum and course content(p=0.000) were significant. Majority (85.1%) of participants stated that identifying strengths and weaknesses in quality assurance practice is the major responsibility of the internal quality assurance system while 76.1% respondents identified best practices in educational delivery in Sri Lankan universities as the major requirement for the nationwide QA system in Sri Lanka. From the sample, 83.5% of respondents highly expected providing a national QA framework for respective higher educational institutes as a

task of the Quality Assurance Council (QAC) of the University Grants Commission (UGC). Among the challenges faced by QAC, 73.1% of respondents identified lack of continuous monitoring and tracking system as the major challenge. The most important criteria that should be included in internal QA framework were; teaching, learning and assessment procedure (91%), assessment method of student progress and achievement (91%), research and extension (91%), curriculum content, design & review based on graduate profile (92%).This study finally concludes that academics has a positive perception on quality assurance in higher education and it must be further improved with removing the institutional, student and resources barriers in delivering a high quality education. Further, it suggests improving the internal QA framework QAC based on academics' views. The research findings will contribute to bridge the knowledge gap in the existing literature by introducing an effective implementation and development of the QA system within the Sri Lankan higher education system.

Keywords: Academics Perception, Quality Assurance, Higher Education, University System

Introduction

Recently, the higher education system in Asia and European countries has been going through a significant restructuring process. In both the UK and Australia, quality assurance in higher education has been identified in their empirical studies. Quality assurance in higher education can be defined as "an ongoing process of evaluating the overall quality in terms of education system, institutions or programs (Vlăsceanu, Grünberg and Pârlea, 2007). Accordingly, the aim of the internal quality assurance is to improve the core mission of the institution including quality teaching and learning outcomes, quality research and community engagement activities besides the external quality assurance effectively safeguard the quality of output and the standards of higher education while enabling quality improvement (Coomaraswamy et al., 2014).In many countries, higher education policies are initiated in relation with the quality assurance to enhance the quality education, ensure the university accountability and transparency in allocating public funds and collaborating with diverse stakeholders (Shah et al., 2011).

In Sri Lanka, the Quality Assurance Council (QAC), established in 2005, is the government agency responsible for overseeing the quality assurance of 15 state universities. This council has established a quality framework and has established internal quality assurance departments at all universities over the last decade and has been widely adopted. Sri Lanka's existing QA process involves conducting reviews of institutions, programs, and subjects, and has a special system for reviewing library facilities in higher education institutions (Edgar et al, 2020). Academic staff, being one of the main stakeholder groups, has a major responsibility to maintain quality and standards in higher education. In fact, as dominant role players within the teaching and learning improvement process, academics are the group

that is most competent to assess the perception of quality assurance (Westerheijden et al., 2007). Even though this has been well recognized among the developed nations (Anderson, 2007), this has not been adequately discussed in the Asian context. Therefore, this paper examines the academics' perspective of quality assurance in higher education in Sri Lanka and the research findings will contribute to bridge the knowledge gap in the existing literature by introducing an effective implementation and development of a quality assurance system within the Sri Lankan higher education system. The specific objectives of this study were; to ascertain the perception of academic staff towards quality in higher education, to identify the academics' perceptions of development of quality assurance system in higher education, to examine the impact of quality assurance on teaching and learning from the perspective of academics and to identify factors included in quality assurance framework from academics' point of view.

Methodology

The present study utilized purposive sampling technique and all academics which represent the ten faculties namely; Faculty of Agriculture (n=68), Faculty of Engineering (n= 85) Faculty of Medicine(91), Faculty of Humanities and Social Science (139), Faculty of Management and Finance (81), Faculty of Allied Health Science (23), Faculty of Technology (39), Faculty of Science (80), Faculty of Fisheries and Marine Science (30), Faculty of Graduate Studies (01) of the University of Ruhuna were selected as the respondents of the study. Furthermore, the participants included in the sample were in different academic positions in the University. A Google form questionnaire was prepared to collect primary data and it was sent to all academics via their university emails. The initial questionnaire was prepared after a careful evaluation of the available literature. Accordingly, the questionnaire was designed to assess academics' perspective on quality assurance in higher education in Sri Lanka. It consisted of five sections which are used to assess the demographic features of the academic staff members, their perception towards the quality in higher education and the development of an effective and efficient quality assurance system in higher education. Further it contained different questions to ascertain the impact of quality assurance on teaching and learning process and the academics' opinions to develop a quality assurance framework. The link was disabled after 14 days of circulation and 67 responses were obtained. Secondary data were collected from Central Bank reports, research paper articles, newspaper articles, journals, and other websites etc. IBM SPSS version 25 software was mainly utilized for analytical purposes. Collected primary data were analyzed by using descriptive and inferential statistical methods such as the Wilcoxon Signed Rank test.

Results and discussion

More than half (52.2%) of the sample were males and 34.3% respondents belonged to the 45-55 years age category. Majority of respondents were reported as probationary lecturers. When taking the highest education qualification to account, the majority of respondents (56.7%) had a PhD. The highest number of respondents was reported from the Faculty of Agriculture. According to the first objective of the study, the perception of academic staff towards quality in higher education was assessed. The results indicated that 58.2% respondents were little aware and needed to enhance their knowledge on quality assurance in higher education. According to them, the means of good quality in higher education are; quality of teaching and learning perspective (63%), knowledgeable staff (63%), education that enhances students' creative thinking (64%). It was reported that lack of infrastructure facilities (76.1%) , lack of financial resources (70.1%), lack of critical and innovative thinking skills (71.6%) are respectively institutional barriers, resource barriers and student related barriers in delivering a high quality education.

Academics' perception on the development of an effective and efficient Quality Assurance (QA) system in higher education was analyzed by five statements. The majority, 59.7% of respondents strongly agreed to the statement on "An effective quality assurance system is a must in the higher education sector". A significant number, 50.7%, strongly agreed that "An effective quality assurance system increases the awareness of quality teaching standards." However, only a smaller number (38.8%) of respondents strongly agreed that "Quality Assurance greatly focuses on innovation and experimentation in teaching and learning". Half of them (50.7%) stated that "Efficient quality assurance process improves the quality of teaching and learning." Also, 52.2% of respondents strongly agreed that "There is a Global demand for maintaining a good quality assurance system in higher education."

Table 1 shows the results of the Wilcoxon Sign Rank test obtained from the responses with respect to each statement on impact of quality assurance on teaching and learning process given by the respondents. All statements were valid and significant ($p<0.05$). According to the results, the impact of quality assurance on academics to develop their professional performance, enabling their continuous learning, motivating them to be involved in university activities, improving teaching strategies and methods, helping to develop curriculum and course content were significant.

Table 1: Perception of academics on quality assurance

Statement	Mean	Test value	P value
Helps academics to develop their professional and academic performances	1	6.376	.000
Enables continuous learning for academic staff	1	6.278	.000
Motivates academic staff to be actively involved in the University activities	1	5.857	.000
Helps to improve the teaching strategies and methods	1	6.250	.000
Helps to develop curriculum and course content	2	6.860	.000
Produces marketable graduates	1	4.964	.000
It helps to fairly distribute the workload of the academic staff	0	2.847	.004
Enhances the quality of scientific publications of students and staff	1	4.431	.000
Increases the efficiency of the learning process in university system	1	6.267	.000
Helps to improve the learning outcome	1	6.014	.000
Efficient quality assurance process improves the ranking of the university	1	6.313	.000

According to the results, the most important criteria that should be included in internal quality assurance framework were; teaching, learning and assessment procedure (91%), assessment method of student progress and achievement (91%), research and extension (91%), curriculum content, design & review based on graduate profile (92%).

When taking account of the responsibilities of internal quality assurance, the majority of respondents (85.1%) stated that identifying strengths and weaknesses in the quality assurance system in Sri Lanka. From the sample, 83.5% of respondents highly expected to provide a national QA framework for respective higher educational institutes as a task of the Quality Assurance Council of the University Grants Commission (UGC). Among the challenges faced by the Quality Assurance Council, 73.1% of respondents identified the lack of continuous monitoring and tracking system as a major challenge.

Conclusions

In conclusion, the majority of respondents were little aware and needed to enhance their knowledge on QA in higher education. The QA system must be further improved with removing the institutional,

student and resource barriers in delivering a high quality education. It can be further stated that identifying strengths and weaknesses in quality assurance practice is the major responsibility of the internal QA system. The study also suggests improving the internal QA system by adding the criteria of teaching, learning and assessment procedure, assessment method of student progress and achievement, research and extension, curriculum content, design and review based on graduate profile.

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Models/Concepts/Proposals in Quality Assurance (MC)

MC1

Strategies for School Level Educational Reforms to Overcome Covid-19 Pandemic Situation Induced Barriers

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Abstract

The current Covid-19 induced situation has negatively affected the continuation and the quality of the School Education System in Sri Lanka. There are a number of strategies currently in place for continuation of the school education system, including e-Learning strategies and use of television programmes. However, the effectiveness of these strategies in terms of accessibility and quality is largely questionable. The main objective of this paper is to discuss the opportunity of using an offline supported learning management system for improving the quality and accessibility of the Sri Lankan School Education system.

Keywords: Covid-19 Pandemic, School Education, Distance Education, e-Learning, Learning Management Systems

Introduction

Disaster situations can occupy nominal world routines in numerous scales and can be categorized into multiple cases. Based on the cause of the occurrence, disaster situations are classified into 3 categories (Zobel and Baghersad, 2020).

Natural – Naturally occurring phenomena (disasters associated with weather, meteorological or hydrological conditions like storms, earthquakes, and tsunamis and, disasters associated with biological conditions like infectious diseases)

Man-made – Phenomena occurring due to the acts of humans (wars, explosions and fires)

Hybrid – When natural phenomena and human errors occurring interactively to elevate the final damage (settlements near volcanic eruptions and forest fires)

If an unpredictable or out of control disaster has taken place and hindered the routine processes, and no action has been taken to counter the damage, the whole governing system can reach a definite downfall. The same results can arise from the process of controlling disasters like infectious diseases. Amidst the Covid-19 pandemic, the Sri Lankan government imposed some strict rules, which include curfew and time to time lockdown since 2020 for several times. The highly infectious novel corona virus, SARS-CoV-2, is leading to a devastating illness which mandated island wide curfew to mitigate the disease spread and the measures were not without an inevitable industrial and service sector downfall. When managing disaster situations, education is a factor which is often overlooked and poorly managed in Sri Lanka and elsewhere. Be it the catastrophe caused by civil war, suicide bombings or Easter bombings, or the infrastructure damage caused by a natural disaster, or even the countermeasures taken to avoid pandemics like Covid-19, the final result was the closure of the schools until the threats subside (Chandasiri, 2020; Ilankoon, Kisokanth and Warnakulasuriya, 2020; Rameez, Fowsar and Lumna, 2020).

Existing Barriers for Containing School Education in a Disaster Situation

The main concern of education strategy development in any country is that the education system of the country should allow the students to carry out their educational tasks with minimum effects from external factors including a disaster situation. Furthermore, it is required to set up universal quality control strategies across the country. In this Covid-19 induced situation also, the continuation of educational activities is essential without the physical attendance of students in schools (Liyanagunawardena and Williams, 2021). This could be done by integrating distance learning techniques for the school education system. There are several barriers for integrating distance learning techniques for the school education system as listed below (Gunawardene and Ranawana, 2019).

- Adoption of distance learning techniques is rarely seen in the Sri Lankan education system. The few applications are mainly limited to universities. Because of the lack of experience in such concepts, both students and teachers would have been hesitant at first to make use of them.
- Lack of disaster management and disaster training knowledge within the syllabi.
- As illustrated in Table 1, television and e-learning media have their own limitations.

Table 1: Analysis of distance learning media

Medium	Limitations	Remarks
Television Programs	**Only up to the Grade level** There are 10000+ schools and dedicating airtime for individual schools is not feasible Around 90% of students have constant access to television media	- Scheduled TV programs can be broadcasted. - Each will be dedicated to a specific subject in a specific language, taught to the students of a specific grade - The availability of TVs in households is considerably high so the reachability is high
e-learning	**All the way to the teacher level** Each teacher should be allowed to make their own accounts in the portal. They should conduct the lectures as real-time video conferences Around 47% of students have constant access to internet	- The teacher-student interaction is very high. The student will be able to actively interact with the teacher and conduct their studies. - Q&A sessions and interactive activities are possible - Since the availability of internet facilities is limited, the reachability will be lower than the TV medium

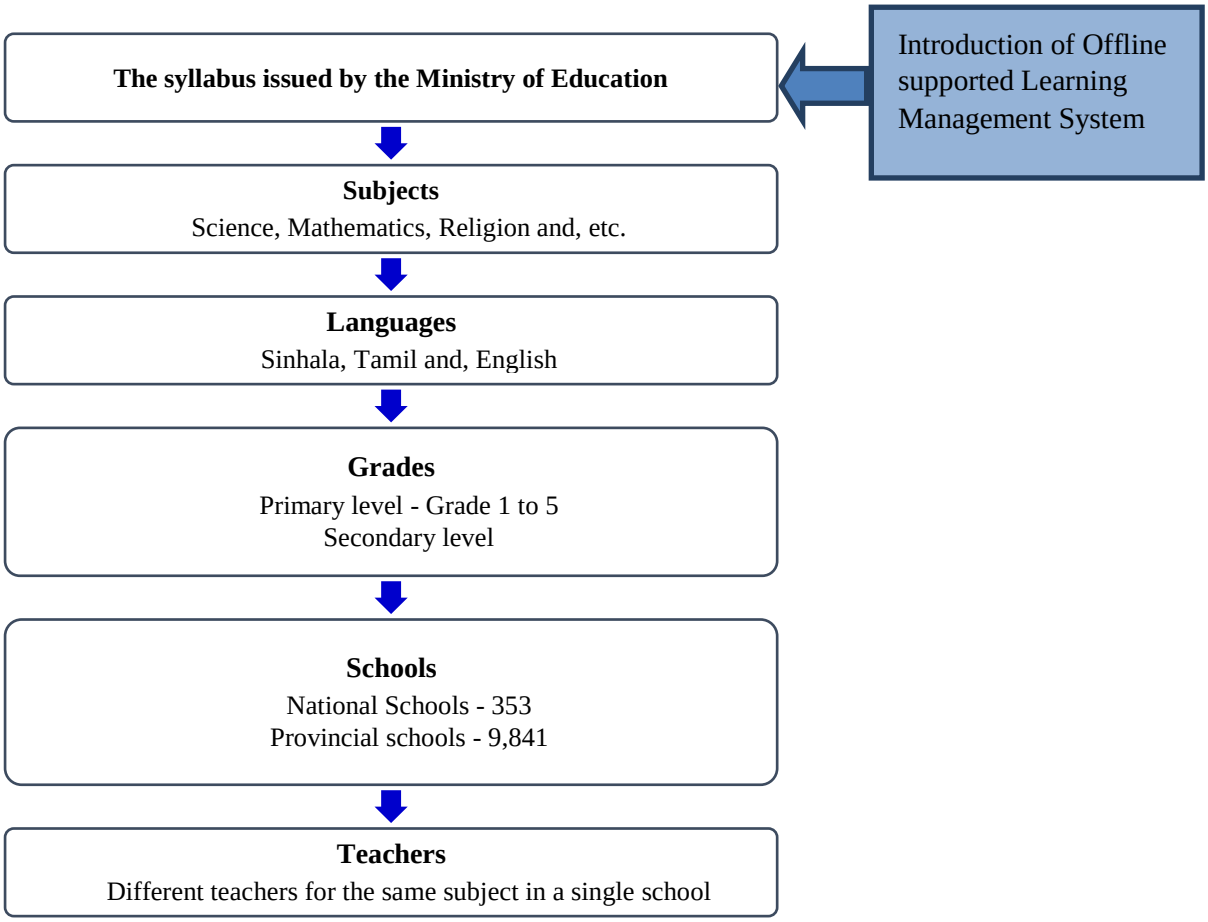

Figure 1: Breakdown of the levels of the Sri Lankan School education system under different variables and stage of incorporating offline supported LMS system

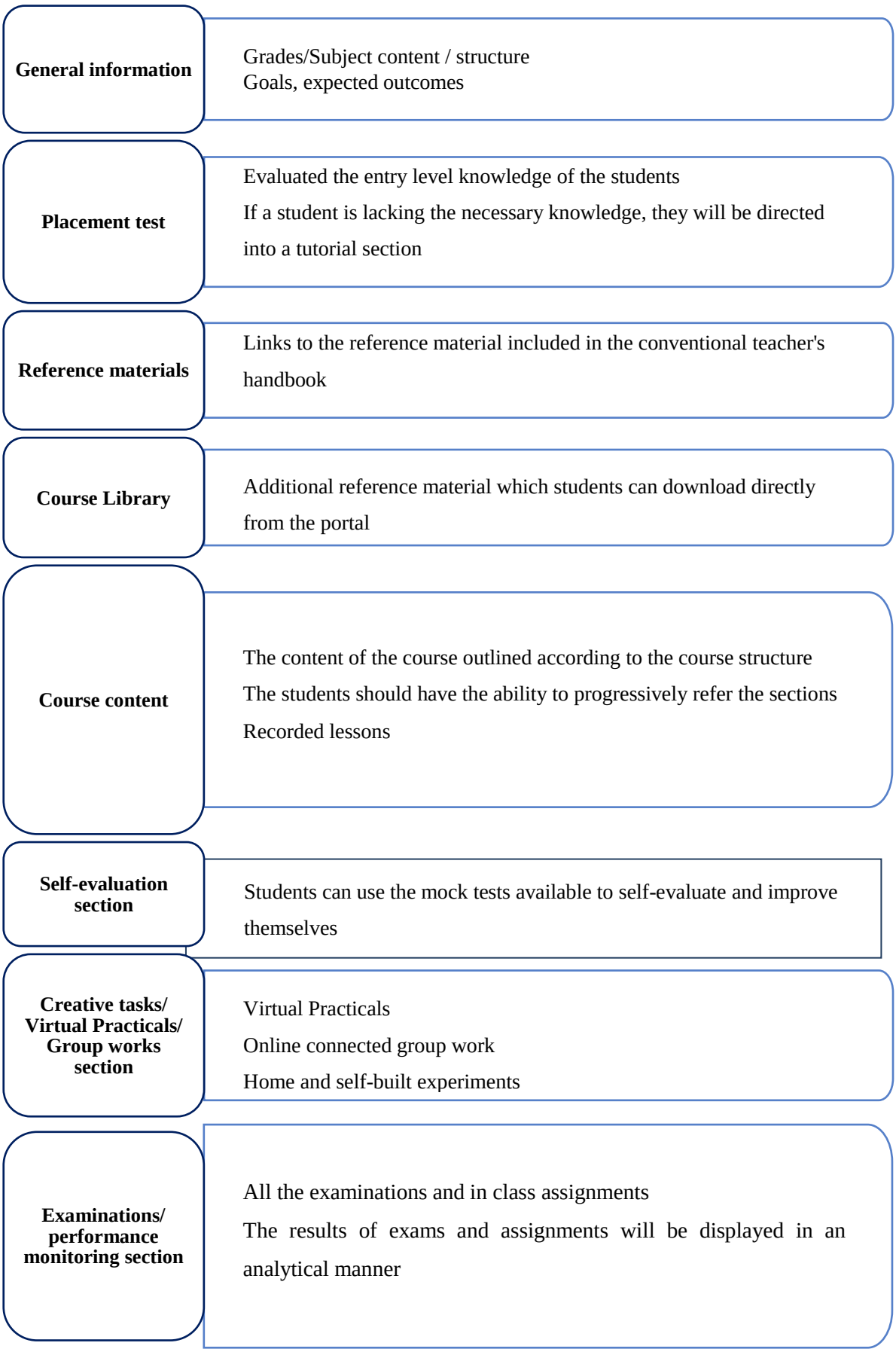

Figure 2: Essential features of the proposed Learning Management System (LMS)

Educational Reform Strategies for a Disaster Situation

Sri Lankan education system prioritizes theory-based education under primary and secondary stages. Even though there is a single syllabus for the school children around the country, the existence of numerous subjects, grades and schools make up a complex system. However, there is a simple way to break down the structure of the education system for creating a common platform. Figure 1 illustrates the breakdown of the levels of the Sri Lankan school education system under different variables (Department of Census and Statistics, 2021).

Currently, the main scope of the Ministry of Education of Sri Lanka is to develop and update syllabi, guidance books for students and necessary teacher guidance books for all levels of Sri Lankan school students (Liyanagunawardena and Williams, 2021). To overcome the current barriers for distance education in Sri Lanka, it is proposed to introduce a Learning Management System (LMS) which can be used in offline conditions as well, where students will be able to update time to time by using possible internet connections. Further, such a common learning management system for the entire country will provide equal opportunities for students to receive extensive higher quality education across the country. Figure 2 illustrates the essential features of the proposed learning management system for Sri Lankan school education.

The visually appealing media like cartoon-based and music-based programmes could be introduced for junior-level students in the same platform. Moreover, this system will enable and promote self-studying among the students. Integration of virtual experimental models will bring a novel innovative learning opportunity for school level students. The system should, in a way, ensure that higher secondary level students will be encouraged to use instruments provided in the virtual platform to set up and carry out their experiments. This proposed new LMS system design strategy should consider three main areas, which include the ways of delivering the subject content, the methodology of conducting laboratory and practical sessions by introducing virtual labs and student evaluation and assessment methods. Further, there are several benefits in introducing a common learning management system for all the school students in Sri Lanka including increased opportunity of continuing and distance learning, equal distribution of resources, common curriculum delivery, unique quality assurance process for all the school in the country, reduce the dominance of tuition based private education and improvement of the English and soft skills of students.

Conclusions

The natural and man-made disasters taking place from time to time, force governing parties to close down Sri Lankan schools and educational institutes. This brings the whole educational system to a

complete standstill as there are minimum protocols to cushion and rectify the problem. The recent island wide lockdown prompted by the Covid-19 pandemic pushed the entire country to a similar situation. In this context, it is high time that we encourage digital tool based education and introduce an "off-line supported Learning Management System" for school students. Accordingly, the current education system needs to be restructured and should be made suitable for the proposed new digital tool integrated system.

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MC2

Student Evaluation of Teaching: An Effective Model

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Abstract

Systematic gathering of Student Evaluation of Teaching (SET) is an improvement tool and a performance measure in higher education. SET contributes to improving the quality of teaching. The Faculty of Medicine, University of Ruhuna, established a system to obtain SET at the departmental level to identify measures to improve teaching/learning activities. Further, the Internal Quality Assurance Cell (IQAC) monitors the process of obtaining SET and the remedial measures taken. During the year 2020, 91% of the academics in the faculty, across 15 departments, obtained SET. They identified the measures that need to be taken to improve teaching based on SET in the context of their departments. All the departments reported the progress and the measures they would take to rectify the gaps and improve teaching, to the IQAC.

***Keywords*:** Students, Medical, Feedback, Teaching, Model

Introduction

Student Evaluation of Teaching (SET) is a popular core practice in higher education that needs to be well-established. In the past, systematic SET had been used for the sole purpose of offering a developmental perspective to the teachers to improve the quality of their teaching. Recently, it has become a useful tool adopted by universities all over the world for quality assurance and evaluation purposes as well (Marsh 2007; Kwan, 1999).

According to Richardson (2005), SET is defined as the use of a formal process to collect information from the students about their perceptions of teacher practices, teacher effectiveness, and the quality of educational programmes. According to Mohanna (2018), SET is not the same as “appraisal”, where the teacher discusses the learning progress with the students or “assessment”, where the teacher measures what the students have learnt. The four main uses of obtaining SET, according to Marsh and Dunkin (1992), are to provide feedback to teachers on their practices, measure teacher effectiveness for administrative purposes, provide information for prospective students in course selection, and as data for research on teaching.

The Faculty of Medicine, University of Ruhuna, established a system to obtain SET at the departmental level and monitor the process centrally, through the IQAC. Although obtaining SET has been practiced in the faculty at the departmental level, the process has not been centralized and monitored before 2020. IQAC has recognized that SET has not been conducted regularly and effectively across the departments. In some departments even though SET was conducted, analysis has not been done due to constraints in the human resources. There was no mechanism to ensure whether any measures were taken to rectify the gaps identified through SET. Therefore, IQAC took a step forward to centralize and streamline the SET process. The aim of this concept paper is to describe the process of obtaining and monitoring SET developed for the Faculty of Medicine, University of Ruhuna as a good practice in quality assurance.

Methodology

A workshop for non-academic staff members was conducted to train them in obtaining online feedback. At least one non-academic member from each department participated in the workshop. They acquired skills in taking a copy from the original Google form, individualizing the form for a given session, acquisition of responses, extracting necessary information and preparing the report on students' feedback. All the academics of the 15 departments in the faculty were encouraged to conduct one SET per year. They were given the option to conduct either through hard copies or Google forms. Obtaining SET was done at the department level. In 2020, the progress of obtaining SET was assessed at mid and end of the year by IQAC.

The SET used in the faculty was developed by the Medical Education and Staff Development Unit of the Faculty of Medicine. It consists of ten 5-Likert scale questions and two open-ended questions which focus on the introduction, objectives, and summary of the lecture; audibility and speed of the lecture; whether the concepts were explained clearly; whether the teacher is prepared for the lecture; clarity of the slides/graphs/diagrams; overall quality of the lecture, and whether the student can apply what was learnt during the session. The two open-ended questions are for students to indicate good points regarding the session and suggestions for improvements.

Due to restrictions implied during the Covid-19 pandemic, virtual teaching was introduced and was the main mode of delivering lectures. IQAC found that the tool used for physical teaching sessions would not address comprehensively to improve the teaching conducted via the virtual platform. Therefore, a questionnaire was developed to obtain feedback for virtual teaching which was approved at the IQAC meeting.

The questionnaire for virtual teaching consists of twelve 5-Likert scaled questions and two open-ended questions. The questionnaire is the same as the one on in-hall lectures with two additional questions on the technical issues encountered and about the lecturer paying attention to the chat box messages. Both questionnaires were made available on the IQAC website to be downloaded, and Google forms of the questionnaires were shared with the Gmail account of the Heads of the Departments. The IQAC monitored obtaining SET by the departments and followed up the measures proposed by the departments to improve their teaching based on responses received for the SET.

Progress of Obtaining SET in 2020

There were 97 academics in the faculty in 2020. Eight academic staff members were on leave. At the end of the first six months of the year, 57/89 (64%) obtained SET. By the end of the year, obtaining SET reached 91%.

Some of the main actions taken by the departments to improve teaching based on SET include, improving the use of the Learning Management System, discussing feedback given by the students in department meetings, improving the quality of tools used in teaching (PowerPoint presentations, video materials, hand-outs), discussing questions and answers at the end of the lecture, and improving the quality of technical aspects during virtual sessions.

Discussion

All 15 departments of the faculty conducted SET during the year 2020. Based on the feedback received, individual departments identified and implemented the measures to improve teaching-learning activities. As suggested by many studies conducted worldwide, obtaining SET has led to improved teaching performances due to it being a platform where teachers could identify the deficiencies in their teaching methods (Wilson, 1986; Arubayi, 1987; Divoky and Rothermel, 1989; Theall and Franklin, 1991; Marsh and Roche, 1993). It was highlighted in a study conducted by Harvey (2011) that SET becomes an effective tool only when the stakeholders consider the process seriously and plan appropriate actions according to student feedback. Therefore, the results indicated that centralizing the SET process by the IQAC has ensured that the feedback received from the students are being used effectively by the lecturers to improve the teaching/learning activities.

The results showed a positive trend in the faculty attempting to improve their teaching practices with 91% of the academics conducting SET in 2020. Literature suggests that one reason behind teachers being reluctant to conduct SET is because they believe the practice of giving students a voice regarding teaching practices could undermine the teacher's authority (Flutter, 2007). The faculty has

proven, with the high rate of obtaining SET, the willingness of the lecturers to absorb the students' voice into the process of improving their teaching activities.

Although in the past, SET was obtained, there was no clear evidence available with the IQAC of the actions taken based on the feedback. Further, the responses received for SET obtained by the departments were not analysed centrally. The IQAC took the initiative to centralize the monitoring of the SET process which is carried out at the departmental level. A study conducted by Wong and Moni (2014) to examine clinical teachers' perception of the SET process revealed that most of the teachers perceive SET to be a part of a quality assurance process. Further, the literature highlights the importance of a central authority implementing the SET, where SET is a core element in university internal management systems to fulfil quality assurance purposes (Anderson 2006; Marsh 2007; Shah and Nair 2012). With the centralization, IQAC encourages the departments to identify the lapses in their teaching and report the actions taken to improve teaching/learning activities. It was a good exercise for the departments to think of the measures within their context. Further, the process leads to the conduct of SET throughout the year evenly and prevents excessive and frequent feedback from students to minimize student exhaustion leading to poor response rates and unreliable feedback.

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MC 3

A Centralized On-line System to Maintain Records of the Events Organized at the Faculty of Agriculture, University of Ruhuna

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Abstract

The events organized by the Faculty of Agriculture are diverse in scope. These events reflect the liveliness of the faculty and contribute to uplift the quality of the academic environment and the wellbeing of the communities in and outside the faculty. Hence, the information related to these events is important for managerial decisions and future developments. Such events are given a substantial weightage in the program and institutional review process. Therefore, the Management Information System (MIS) of the faculty should include a tool or a component to record and archive the information related to completed events. The simple centralized system proposed in this paper can be used as an interim solution in the absence of an MIS capable of recording and archiving the information related to the events completed. The proposed system uses Google forms and Google drive to retrieve and store the information about the events at the IQAC of the Faculty. The organizers of the events are requested to upload the information to the system at their earliest. Frequent manual reminders will be sent by the IQAC via emails and the progress of the submissions will be announced at the faculty board with a summary as strategies to encourage the voluntary upload of information. The system is currently being tested and validated at the Faculty of Agriculture. The system will be improved using feedback from the users and introduced to other faculties and universities.

***Keywords**:* Event Recording, Archiving, Management Information System, Google Forms, Electronic Record Management

Introduction

The Faculty of Agriculture, University of Ruhuna organizes many events or programs on diverse themes targeting a wide range of participants or beneficiaries within a year. The academic staff, non-academic staff, student community, established associations or such entities, projects, or a combination of these entities organize most of the events. On the other hand, the benefits of these events or programs could be specific to a community or span over multiple target communities including the public. Having records of the events is vital for managerial decisions, accountability considerations,

program accreditation and program and institutional reviews. In addition, updating the university web, preparation of newsletters, leaflets, promotional videos also may use this information. A good example to show the need for such information is the preparation of the evidence for the recent program reviews and the institutional reviews.

Currently, there is no proper system in place to record management or to record and archive the information related to the events held at the Faculty of Agriculture. Further, this could be the case of most of the faculties of the university. An Electronic Record Management (ERM) system can easily be incorporated into the existing MIS with many advanced functions to accomplish this task. ERM is capable of providing required information to the management as and when it is needed (AIIM, 2021). This paper proposes an interim solution to record and archive the information using free online tools offered by Google. In addition, a strategy to encourage voluntary data entry is also proposed. This system is currently being tested and validated at the Faculty of Agriculture.

Methodology

Main Requirements

The software system should be secure, reliable, and easily accessible for the users. There should be a mechanism in place to encourage the users (event organizers) to voluntarily fill the information to the system. A designated system manager is necessary to monitor the progress, handle issues and encourage users to fill the information. Hence, the proposed system is best suited at the faculty level where its management is relatively simple.

Software Platform

Any software platform that provides a substantial amount of cloud storage and integrated facility to create online forms with file upload capabilities can be used for this activity e.g. Google, n.d., Microsoft, n.d. The present system uses the Google workspace subscription available for the Faculty of Agriculture, University of Ruhuna. This system provides ample cloud storage and online forms with exceptional reliability and security. The users can access the system via popular web browsers. Microsoft subscriptions including one drive and forms can also be used for this purpose. Individual Google accounts can also be used if there is no subscription required for the services at the institutional level. In addition, if there is a functional intranet or MIS and expertise available, the tailor-made interfaces and databases could be developed with advanced features for data collection and management.

Data Entry, Handling, and Analysis

The system is currently managed by the IQAC of the Faculty of Agriculture. The form is shared among the office bearers of the associations, coordinators of the establishments within the university project coordinators for data entry. However, the students shall not get the authority to fill the form directly. As all student associations of the university have a patron, the system authorizes the patrons to fill in the information on the events organized by the students. The proposed system collects the information indicated in Table 1. As it is a centralized system, additional entries could be added to the form at any time. The system stores the images or any other supported attachments such as PowerPoint presentations in the Google drive of the system administrator. The system automatically generates a summary of all events along with graphical illustrations. In addition, all the data can be downloaded as a comma-separated values (CSV) file that can be opened with MS Excel.

Table 1: The information collected by the system

Google form entries
Timestamp (Automatically generated by the form)
Organizer of the activity (Dropdown list)
Name of the reporting person
Designation
Contact number of the reporting person
E-mail address of the reporting person
Department (for department-level activities)
Association (for student associations**)**
Title/ Name of the Activity
Date and Time (Date and time of Commencement)
Duration
Target Groups
Objective/s
Location/ Delivery Media
Invitees/ Resource persons
Source of Funds
Outcomes/Achievements
File upload
Total cost
Any other comments

IQAC's Role in Maintaining the System

The IQAC maintains and manages the system and IQAC's official email account is used for this purpose. The Chairperson of the IQAC presents the automatically generated summary of the events at the last Faculty Board of the year. In addition, the chairpersons/coordinators/patrons may present detailed activity reports at the Faculty Board meetings. The data in the system will be provided to the respective presenters upon request. The submission of the information to the faculty board by the IQAC not only reports the activities officially but also encourages the office bearers to actively engage in feeding the information to the system. Until the system becomes familiar with the staff members, IQAC will send frequent reminders to encourage uploading new information. Since the system is still under testing and validation, new strategies will be added to the system to enhance its functionality.

Discussion and Conclusions

An analysis of the nature of the events will provide information such as frequently addressed topics, inadequately addressed topics, inactive associations/societies/committees, level of participation and sources of funding. This information will provide an assessment of the performance of different associations, committees, and societies. The committees can be advised and guided based on their performance in order to improve on their proposed activities. Further, the performance of the office bearers of the student-based bodies can be assessed through this system to determine the eligibility for reappointments and issuing references.

Despite the benefits of having this system, getting the users to upload information voluntarily appears to be a challenge. Even within a few weeks after the completion of an event, retrieval and archiving of the details is a tedious task due to several reasons. Main reasons are the reluctance of the relevant staff members to compile information, absence of designated officers to carry out the process and absence of a system or a format to compile the information. The first reason mentioned above is linked to the attitudes while the others are linked to the facilities. Carefully selected strategies should be adopted to encourage the users to feed the information. Such strategies need to be reviewed and approved at appropriate administrative bodies before incorporating into the system.

In conclusion, this system provides a structured platform to enter the information about the events organized at the Faculty of Agriculture, University of Ruhuna. The proposed structure could be used as a prototype for future developments of the MIS. The strategies to encourage the users to upload information to the system should be reviewed and applied with necessary approvals. This system can be introduced to other faculties and universities with necessary changes.

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MC4

Development of an Early Warning System to Detect the Undergraduate Dropout at the Faculty of Agriculture, University of Ruhuna

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Abstract

Student dropout is a critical issue related to the higher educational systems in the world. Among Sri Lankan universities also, student dropout has become a vital issue. Student dropout rate at the Faculty of Agriculture, University of Ruhuna is considerably high and there is no mechanism to identify possible dropouts in advance. The objective of this concept paper is to propose an Early Warning System to detect the undergraduate dropout at the Faculty of Agriculture, University of Ruhuna. The proposed system would provide explicit pre-awareness regarding dropout-prone candidates and help the faculty to take appropriate measures to reduce the dropout rate determining the best ways to minimise the number of dropouts.

Keywords: Higher Education System, Early Warning System, Sri Lankan Universities, University Dropouts

Introduction

Education is considered the foundation for the development and wellbeing of a society and therefore, the students are considered the most valuable fundamental asset of an education institute. A strong higher education system is a significant contributor to the country's ability to compete in the global marketplace and is critical to our economic strength, social well-being, and position as a world leader. As per (Bungău et al., 2017),"the goal of higher education is identical with those of education: the development of an informed, responsible citizenry and the preparation of every boy and girl for a personally satisfying and socially useful career".

Higher educational institutes including universities are complex organizations facing difficult and multifaceted challenges. According to literature, student dropout has become a distressing issue faced by both Sri Lankan universities and universities worldwide in the current challenging and dynamic

environmental context (Anishka and Thushara, 2016). Within the Sri Lankan context, the national government is making a substantial investment on free education and, therefore, student dropout is a serious issue which affects both the country's education system and its economy. Dropout of undergraduates from government universities raise several concerns within the universities; the efficiency of the universities is being questioned, the quality of the academic programs is being questioned, the management system of the universities is being questioned and may damage the reputation of the university (Bedregal-Alpaca et al., 2020). On one hand, a high percentage of student dropout exacerbates the lack of highly qualified individuals in the labour market that is predicted for the next few decades (Vogler-Ludwig et al., 2016). On the other hand, only a limited number of students are being selected for the government universities. From a societal point of view, dropout is argued to be a waste of tax resources due to the individual blocking a university place that could have been taken by another student (Sosu and Pheunpha, 2019). Considering this issue at the personal level, it appears that dropout is often associated with personal failure, and both waste of time and monetary investments (Behr et al., 2019).

In the United States, the overall dropout rate of undergraduate college students is estimated at 40%. In Germany, the dropout rate is nearly 29% (Behr et al., 2019). According to the data from the Higher Education Statistics Agency of the United Kingdom, 6% of first-degree entrants aged under 21 who enrolled in 2013-2014 years did not continue their studies beyond their first year. In countries that belong to the Organization for Economic Cooperation and Development, 12% of students who enter a full-time bachelor's program, on average, leave the tertiary system before beginning their second year of study. This percentage increases to 20% by the end of the program's theoretical duration and to 24% three years later. In all countries with available data, women have higher completion rates than men in BA programs (Sandoval-Palis et al., 2020). But the empirical evidence on undergraduate dropout in Sri Lanka is very limited. In the Faculty of Architecture, University of Moratuwa, the number of students who have dropped out or not completed as a fraction of the total number of students in a batch are alarmingly high; above 2/5 of the batch in 2006 intake and over and above 1/5 in other intakes (Anishka and Thushara, 2016). The seriousness of the dropout problem can be evidenced through many studies which have been carried out to analyze the dropout issue, to detect the main variables involved, to determine the scope of those variables, to model the dropout process so to organize it into many of its sub problems, to get a better understanding of its dynamic and of the sub-processes it involves, always aiming at a better understanding of the whole problem in an attempt to prevent/minimize it. The term "dropout" is commonly used to describe the situation of students who enrol at a certain institution of education and leave without obtaining a diploma or passing their final

examinations (Bungau et al., 2017). Tinto and Cullen (1973) defined two categories of dropping out: leaving the college of registration and failing to obtain any degree.

According to Donoso et al. (2007), the retention of students in university education is a broad phenomenon, related to access and higher education selection policies, which reflect the fact that some high-school graduates do not possess the skills, conditions, capacities, aptitudes, or competences to continue their university studies. Recent studies have found that the university dropout issue generally arises during the early years of an individual's career. Tinto (2006) highlights two critical periods when the risk of desertion is higher than usual. The first critical period is the admissions process when a student first accesses the university. The second critical period occurs during the first semesters spent in university when the student begins the process of social and academic adaptation. Bean (1982) points out that dropout is not only due to academic variables but can also be explained by psychosocial, environmental, and socialization factors.

Finding a suitable solution for the high dropout rates is important for both universities and students. Universities have an obvious interest in not spending scarce resources on students who will not be able to complete their programs. Students also shall have an obvious interest, since the time they get paid to study in higher education is limited. Therefore, early identification of the students who are at risk of dropping out from the university might be a solution up to some extent.

An institution's success in recruitment ultimately depends on how satisfied students are in pursuing their studies until graduation, and thus receiving value for the investment they and their families are making in obtaining higher education (Voigt and Hundrieser, 2008). Initially, an institution should have a proper admission mechanism to attract the best fitting students to follow the relevant degree courses. Once enrolled, after a rigorous admission procedure an undergraduate dropping from a degree course or failing to complete within the standard duration is not spontaneous. As defined by Doll et al. (2013), the cause of a student dropping out is often termed as the antecedent of dropout because it refers to the pivotal event which leads to dropout. This is indeed the ultimate result of a cumulative prolonged process taking place in a student's life as an undergraduate in a certain higher education institution.

According to the academic records, dropout rates of the Faculty of Agriculture, University of Ruhuna in 4 consecutive academic years; 2012/2013, 2013/2014, 2014/2015 and 2015/2016 were 9.30%, 9.7%, 6.44% and 16.57%, respectively. Those percentages are considerable in terms of the cost of producing an agricultural graduate. Currently, the Faculty of Agriculture does not have a system to identify possible student dropouts. Therefore, it is essential to address the issue of student dropout and the

proposed Early Warning System could be a reliable measure to identify the students who are at risk of dropping out.

Methodology

The proposed Early Warning System is based on the Management Information System (MIS) of the Faculty of Agriculture. According to the by-laws of the Faculty, the maximum time period for completing the degrees is four years. The students can attempt 1st year repeat subjects for another 7 times, 2nd year repeat subjects for another 6 times, 3rd year repeat subjects for another 5 times and 4th year repeat subjects for another 4 times. According to the proposed system, students are being continuously monitored and when a student is at a critical point, an alert is sent to the relevant parties such as student mentors and academic counsellors if necessary.

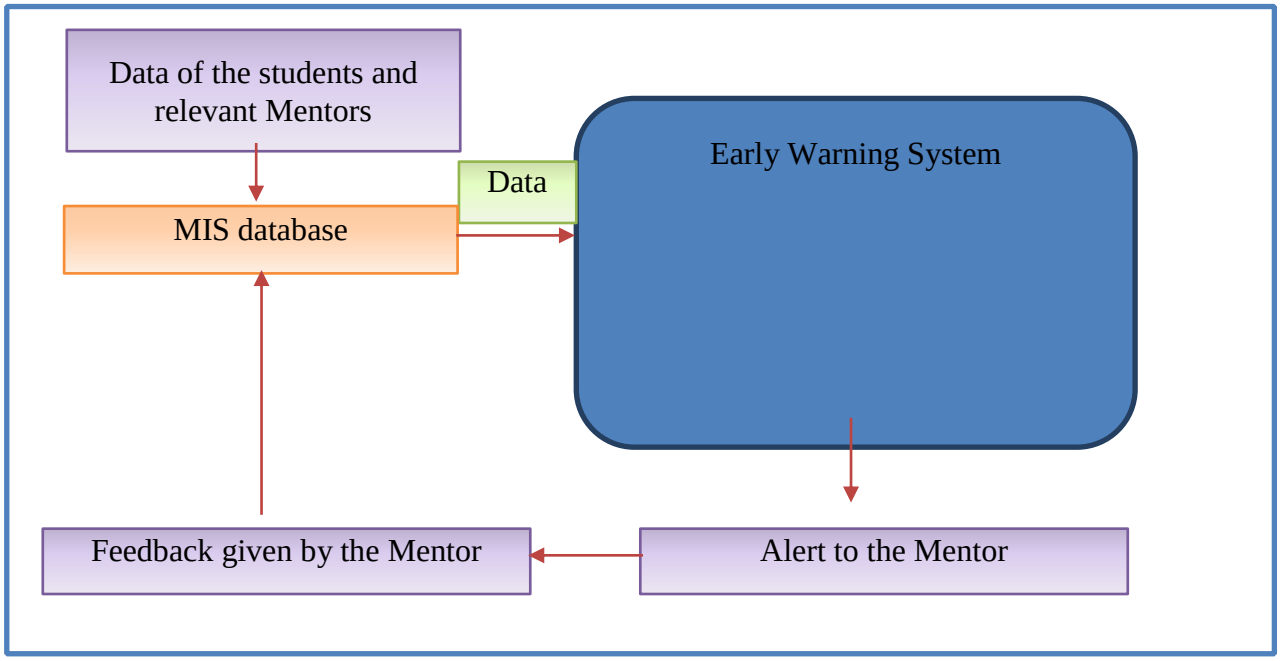

Figure 1: Proposed Early Warning System

According to the system, the relevant data of the students including the name, registration number, relevant degree, subjects enrolled numbers of attempts taken and the results should be entered to the MIS database. Those data are already included in the existing database. Apart from that, relevant information of the mentor of a particular student needs to be added to the MIS database.

The data from the MIS are sent to the Early Warning System. There are 4 components of the system.

1. Enrolment – Enrolment of the students to the courses of the semester is automatically done via the LMS (Learning Management System). The proposed system assumes that there are three subjects per semester.

Semester	Subject	Enrollment	Eligibility		Attemt			1	2
1st 1st	A	YES	YES	NO	YES	NO	*	PASS	FAIL	FAIL
	B	YES	YES	NO	YES	NO		PASS	PASS	FAIL
	C	YES	YES	NO	YES	NO		PASS	PASS	PASS
1st 2nd	D	YES	YES	NO	YES	NO		PASS	FAIL	FAIL
	E	YES	YES	NO	YES	NO		PASS	PASS	FAIL
	F	YES	YES	NO	YES	NO		PASS	PASS	PASS
2nd 1st	J	YES	YES	NO	YES	NO		PASS	FAIL	FAIL
	K	YES	YES	NO	YES	NO		PASS	PASS	FAIL
	L	YES	YES	NO	YES	NO		PASS	PASS	PASS
	A					NO	**		PASS	PASS
	B					NO				PASS
	C					NO				
2nd 2nd	M	YES	YES	NO	YES	NO	*	PASS	FAIL	FAIL
	N	YES	YES	NO	YES	NO		PASS	PASS	FAIL
	O	YES	YES	NO	YES	NO		PASS	PASS	PASS
	D					NO	**		PASS	PASS
	E					NO				PASS
	F					NO				
3rd 1st	P	YES	YES	NO	YES	NO	*	PASS	FAIL	FAIL
	Q	YES	YES	NO	YES	NO		PASS	PASS	FAIL
	R	YES	YES	NO	YES	NO		PASS	PASS	PASS
	J					NO	**		PASS	PASS
	K					NO				PASS
	L					NO				
	A					NO	***			
	B					NO				

Figure 2: Preview of the designed system

2. Eligibility – Eligibility to attempt the examination is checked via the system. If a student is not eligible, an alert is sent to the mentor to check the possible causes for not being eligible. It can be considered as a critical point in the system.

3. Attempt – The status of attempting the examination is checked by the system. If a student did not attempt an examination, an alert is sent to the mentor to find out the possible causes for not attempting.

4. Results - All the possible combinations of the proposed model have been identified. If a student has got repeated in a considerable number of subjects (that threshold value could be identified later), an alert is sent to the mentor. According to by-laws a student can attempt any examination for a period of 8 years.

Accordingly, alerts are sent to the mentor at different critical points of the system. The mentor is responsible for sending relevant responses back to the MIS database. Those responses are also recorded in the MIS database. Accordingly, the student is continuously being monitored.

Conclusions

The proposed system would provide explicit pre-awareness regarding dropout-prone candidates and help the faculty to take necessary actions to reduce the dropout rate after determining the best ways to minimise the number of dropouts. The possible causes for student dropouts would be identified by the relevant mentors by discussing with the identified students with the help of this proposed system. This system would identify possible dropouts while monitoring the undergraduates of the faculty continuously during their student career.

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MC5

A Web-based Centralized System to Manage Student Feedback and Peer Evaluation at the Faculty of Agriculture, University of Ruhuna

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Abstract

Student feedback and peer evaluations are integral parts of the tertiary education systems. The response of the teacher to student feedback and peer evaluations depends on the teacher's perceptions and professionalism. Despite the personal biases, effective internalization of the feedback-response cycle is necessary to improve the teaching and learning process of academic institutions. Conventionally, paper-based questionnaires are used to obtain student feedback on teaching, courses and peer evaluation. Recent developments in Information and Communication Technology provide many avenues to carry out these questionnaire-based surveys through online services. Teachers prefer to use such services over paper-based questionnaires because of their intuitive interfaces, easy sharing and result analysis tools. Since individual teachers have full control over the student feedback data in most of the online tools, it is difficult to verify whether the teacher has responded to the feedback adequately. A centrally administered student feedback and peer evaluation system could collect responses and convey them to the management for further actions such as guiding and advising the teachers or improving the courses. Aforementioned tasks can be accomplished easily using tailor-made MIS or LMS and development of such systems could be costly and time consuming. This paper proposes an online system using Google forms as an interim solution to centrally handle the student feedback and peer evaluations at the faculty level. Since the proposed services are currently free to use, the faculties can easily adopt them if a local system is not in place. The feedback collected by the system will be processed by the IQAC of the Faculty of Agriculture using the functions of Google sheets. A custom-made summary of the feedback will be shared securely with the respective teacher and the head of the department (HOD) for further actions. This proposal was approved by the Faculty Board and yet to be implemented and validated.

Keywords: Google Forms, Google Sheets, Teacher Evaluation, Course Evaluation, Feedback-Response Cycles

Introduction

The teacher, course, and peer evaluation are vital components in the effective delivery of a degree program. These evaluations also provide valuable feedback that can be used in future curriculum revisions. Therefore, the program review process managed by the Quality Assurance Council of the University Grants Commission of Sri Lanka has given high priority to these activities. In addition, student feedback could be an instrument in measuring the accountability of academics (Spiller and Ferguson, 2011).

Conventionally, student feedback was obtained using paper-based forms. Individual teachers or an authorized person or a group were responsible to carry out this task. With the rapid advancements in information technology in the recent past, this could be done effortlessly using online facilities such as forms or surveys. Google forms were introduced to the Faculty of Agriculture for teacher and course evaluation in the year 2016/2017. Since its introduction, most of the staff members are using the forms to get the student feedback on teachers and courses. In this system, the individual teachers or course coordinators create an instance of the common evaluation form in their Google drive and distribute the link to the target students. Student responses go directly to the Google drive of the form owner. The form owner can see the results as a comprehensive summary of the feedback. This system is much better than the paper-based system where the data needs to be manually converted to the electronic form and analyzed. In the online form system, the teacher could use the feedback to improve his or her teaching and the course delivery. From the students' perspective, they have more freedom to evade providing feedback. Jha et al. (2019) reported that there is a decline in the student feedback in many universities.

The studies conducted by Smith (2020) and Spiller and Ferguson (2011) show that the teachers take the student feedback positively in most cases. Smith (2020) further explains that most of the teachers expect to use the feedback as a reflection rather than an evaluation. In addition, some teachers may hesitate to see a reflection of their practice. Therefore, the teachers may not use the student feedback to improve their teaching or course improvements if the responses of the teachers were not monitored adequately. Since the feedback comes directly to the teacher in a form-based online feedback system, it is entirely up to the teacher to respond to the feedback. There is no convenient mechanism in this system to ensure that the appropriate response is given to the student feedback. This weakness was recognized by the reviewers of the program review process. Therefore, a web-based centralized mechanism was sought and the present paper describes the technical and implementation aspects of the proposed system. Proposed system is useful in the absence of dedicated software solutions to manage

feedback-response cycles within the institute. A tailor-made MIS or LMS having these functionalities built-in could handle this task conveniently with more automated functions.

Methodology

Proposed Platform

Online forms provided by Google are the core of the system due to its reliability and security. Other similar platforms or locally configured intranets can also be used for this purpose. The data collection will be done by a single form prepared in the Google drive of the IQAC of the Faculty of Agriculture. The information of all the teachers and the courses will be entered into the form for ease of access. The automatic summary produced by this Google form cannot be used to check the feedback for individual teachers or courses. Therefore, the data stored in the Google sheet that is linked to the form needs to be filtered. This is the most challenging aspect of the proposed centralized evaluation system. The secure delivery of the right information to the right end-users at the right time with adequate privacy needs to be ensured in the system.

Implementation of the System and Operation

The concept was presented to the Faculty Board of the Faculty of Agriculture and it was approved. The process is summarized in Figure 1 below. IQAC will handle the data collection and processing in the system. Under this system, the web link to the form can be posted on the LMS home page or the home page of every course since only two common forms are used for all teachers and courses. Already existing teacher and course evaluation forms and peer evaluation forms could be converted to Google forms. It is the responsibility of the teacher or any designated member in a department or unit to encourage the students to fill the forms. It is up to the faculty to decide whether they make it compulsory for the students to fill the feedback forms or not. Proposed system does not have a function to check if a particular student has filled the feedback form without compromising the identity of the student.

The data acquired through the system will be processed using the pivot tables tool in Google sheets. A sheet for every teacher will be prepared in the workbook. A set of filters will be set in the pivot table to select the necessary data ranges; e.g., year of evaluation, subject, etc. The filtered information will be converted into counts, where necessary, to graphically illustrate the form responses; for example, the count of responses with “strongly agree” to the first question and the count of responses with “agree” to the first question. The data can be presented as pie charts or bar charts.

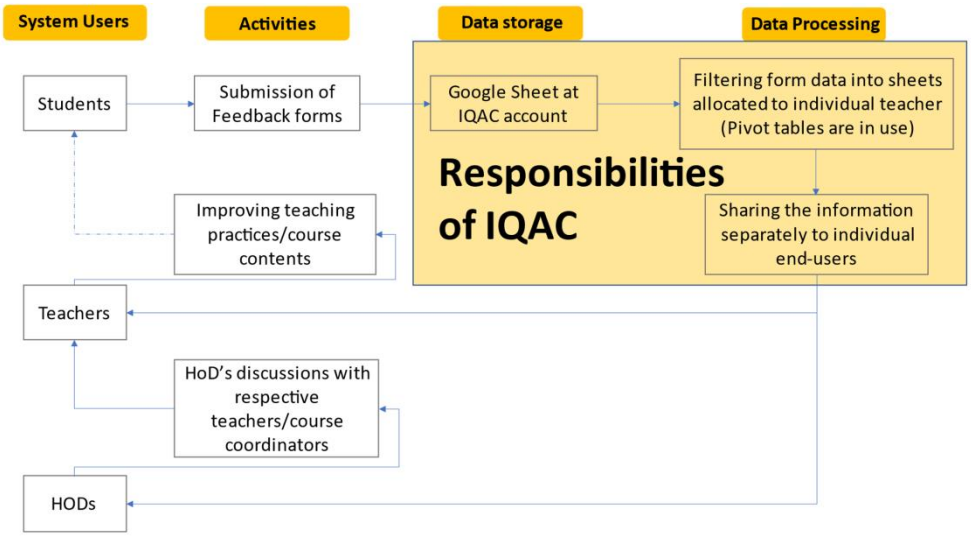

Figure 1: Operational structure of the monitoring system

The Mechanism of Encouraging Teachers to Respond to the Feedback

When the filters and the graphs are in place, respective sheets will be shared with respective teachers and the head of the particular department. Access to the data cells in the Google sheet will be restricted so that the data cannot be modified by any of the users. Filters will be available to the users to select the necessary data.

The course of action after receiving the feedback depends on the type of feedback received. If the teacher or a particular course has poor feedback the HOD may contact the teacher and discuss the issues and find appropriate solutions. For example, if there is no improvement in the teaching strategy even after several feedback-response cycles the HOD may talk to the teacher. This approach allows the teacher to adjust and minimize the chances for conflicts.

The same process applies to peer-evaluation. The peer evaluation could be relatively simple technically since the number of participants is less. A form that supports mobile phones would enable the peer to fill the form without any hassle. The Faculty of Agriculture, University of Ruhuna has already adopted a strategy to identify the peers who evaluate individual teachers at the beginning of a given semester. This paper only proposes a technical solution to gather feedback and a follow-up strategy. Each faculty may decide its own follow-up strategy and other factors such as time and frequency of feedback collection.

Discussion and Conclusions

Anticipated Problems in Implementing the Centralized Strategy

The centralization will create files with huge volumes of data. Poor handling of the files may lead to a data loss or data may be inaccessible to the end-users. Therefore, appropriate backing up is necessary. Annual cleanup of the databases could prevent data build-up. However, this will remove access to the past data. The use of pivot tables provided by Google sheets becomes intricate if the number of questions in the feedback form is high, the number of answers is high and answers are complicated. The actions taken by the HOD on the feedback could embarrass the teachers if both parties handled those actions unprofessionally. Teachers' perceptions and professionalism are key factors in the whole feedback-response process (Arthur, 2009). However, the system cannot provide solutions to such issues. Seemingly, there is no way to ensure that the appropriate action has been taken for the feedback without exposing the information to a superior or supervisor. Individual faculties may decide their own follow up activities.

Prospects of Improving the System

If a bespoke software solution can be developed by the institution instead of using common platforms such as Google, the process of data access would be simple with tailor-made interfaces. Further, student participation can be made compulsory for feedback surveys without exposing the identity of the students to the teachers.

While acting as an interim solution the centralized feedback management system proposed in this paper provides an insight into the shape of the software platform that needs to be incorporated into MIS or LMS to manage student feedback and peer evaluation. The follow up activities may differ from faculty to faculty of the university. Accordingly, various modifications to the system may be necessary.

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MC6

Establishment of an Integrated Service Quality Index for University Libraries in Sri Lanka

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Abstract

Measuring service quality has gained an immense interest in service organizations with no exception for academic libraries. Due to its complexity in definitions and variability of dimensions, the measuring of service quality in university libraries has become much more complicated. Although there are many powerful service quality measuring tools such as LibQUAL, SERVQUAL, SERVPERF, debates, and criticisms over existing service quality measuring tools argue that they are still unable to fully address the important dimensions of service quality because their approaches are one-sided: service provider focus or customer focus. For a fact, existing tools have ignored the contribution of resources capability dimension to the service quality. In this scenario, the benchmarking strategies to measure the quality becomes questionable in developing country environments. Many arguments show that the library service quality measure should follow a multidimensional procedure rather than the measuring of customer satisfaction. Especially the quality measures should be incorporated with the strategic utilization of resources and capabilities. This paper seeks the possibility of measuring the integrated service quality in university libraries through a multidimensional approach associated with both resource-capability measures and the perceived service quality by librarians (service providers) as well as service users. This conceptualization also leads to the proposed Integrated Service Quality Index for university libraries of Sri Lanka. The proposed conceptual model contains five key variables viz. competitive capabilities, dynamic capabilities, agility capabilities, provider-perceived quality, and user-perceived quality which are measured through five different questionnaires. The model was empirically tested with a sample of 2247 users and 91 library professionals randomly selected from eight state universities. Findings suggest that the library service quality measures should consider the resource capabilities in addition to perceived quality service users. Library professionals and decision-makers of the university can utilize this model and index to measure and increase the service quality level of the library. The quality measuring items were based on psychometric procedures. There can be a possible impact of localization.

Keywords: Library Service Quality, Service Quality Index, University Libraries of Sri Lanka, Resource-Capabilities.

Introduction

Library managers are required to address the growing importance of quality requirements of the library. Quality is attributed to many factors. In the service sector, it needs to be mostly based on customer satisfaction, but it will be incomplete if the service quality is determined only based on that aspect (Wilson et al 2002; Pakurár et al, 2019; Chuang et al, 2015). In the library sector, traditional quality indicators (such as the size of collections) which were used to measure the service quality in university libraries have become out of date today because they cannot address the demands of modern communities (Nitecki, 1996).

"The attributes associated with customer, vendor and trade partner relationships improve a company's ability to provide service as dedicated (Rahman and Ali, 2015). Service organizations provide services with the utilization of resources and capabilities they have and they acquire strategic capabilities to cater to the demand of the services. Hence, the quality of the service must be determined on relative availability and strategic leveraging of these resource capabilities too. In this circumstance, the measuring of the library's service quality singly based on customer perception will be incomplete. Customer perception is subjective to circumstances and personalization and in most cases, satisfaction scores are not standardized (Wilson et al., 2002). Satisfaction of the library users is a function of multiple sources that engage in the resource management of the library (Shi et al., 2004). Therefore, the quality measuring mechanism should be incorporated with the assessment of resource-capabilities of the library too (Taib et al., 2013). Customers generally determine their expectations with their past experiences and with the information they have from various sources like word of mouth. Thus user expectations can show high variations with their past experiences towards the service quality and if the quality measuring tools incorporate the relative availability of resource-capabilities in the library it will help to understand an averaged scenario of the library quality.

The evolution of Resource-Based Inquiry contributes to the divergence of variables related to many aspects of resource capabilities. Literature supports that key variables of resource capabilities of a service organization can constitute competitive capabilities, dynamic capabilities, and agility capabilities (D'Oria et al., 2021). Resources as human, physical or intellectual assets are important to an organization to achieve its objectives. Resource-based theory (RBT) attempts to explain the priority importance of resources to achieve superior performance (Prahalad and Hamel, 1990). The theory has been evolved through various approaches viz. Resource-Based View (RBV) (Barney, 1991; Penrose, 1959; Wernerfelt, 1984), Knowledge-Based View (Grant, 1996), Dynamic Capability View (Teece et

al. 1997; Kump et al 2019), and Agility capability view (Teece, 2019; Worley and Lawler III, 2010; Najrani, 2016). RBV has been massively used in management practices as an influential theory of strategic management (Newbert, 2007; Talaja, 2012).

Resources capabilities and competencies can be distinctive across firms and they generate the advantage to the firm for performances (Carmelia, and Tishlerb, 2004). University libraries possess distinctive assets and capabilities which have a positive impact on the service quality of the library (Al-Ahmad, 2016). Therefore, viewing the resource-capabilities of the library in terms of competitive capabilities, dynamic capabilities, and agility capabilities would be effective to understand their impact on quality.

Organizations need to keep track of their performance, customer satisfaction, and even their competitors (Pakurár et al, 2019). University libraries face the threat of competition from various commercial information service providers and web-based information tools commercial or open access and they must improve the quality of the services to survive (Cullen, 2001). To be competitive libraries should leverage resource capabilities. Generally, the service quality is relevant to employees' capabilities, productivity, and ability to create sustainable competitiveness (Chuang et al., 2015). Users reach the library if they are confident of the library's ability to provide any resource/service they expected. Then the competitive capabilities are essential to ensure the quality of the library.

Dynamic capabilities mean the organization's competencies that support the undertaking of necessary changes in response to the market changes. They facilitate the adaptation, integration, and configuration of internal and external resources (Alejandro et al., 2020). As dynamic organizations, university libraries need to re-evaluate their roles and service models to identify user expectations and their perceptions towards the services they provide and then make necessary changes and innovations to narrow the gap between expectations and perceptions. By strategically using the abilities and capabilities, librarians motivate the working force to effectively respond to the changing needs of the society concerned. They value their working environment, and it will help to attract new users and retain the existing users (Julie et al., 1998).

As another fact, the library needs to have an agile setup to leverage its resource capabilities. Agility is a set of organizational capabilities that helps to respond to customer requirements in a timely, efficient, and cost-effective way (Mathiassen and Pries-Heje 2006; Sambamurthy et al., 2003; Seo and La Paz, 2008). It supports resources to value-creating and value-protecting (Nafei, 2016). The agile environment supports the development of the quality of the library (Niemi-Grundström, 2014). Thus, it can be argued that the integrating of resource-capabilities in quality measuring would be more supportive to view the overall quality scenario of the library. Although there are different definitions

and interpretations, the variables such as competitive capability, dynamic capability, and agility capability would be many representatives of the resource-capability construct. Therefore, this study utilizes the terms competitive capability, dynamic capability, and agility capability to measure the resource capability of the library.

Service quality on the other hand has been utilized to evaluate the importance of the library. It has been viewed in different aspects. Earlier studies and conceptualizations on service quality in university libraries have concentrated on the input-output process, service provider's perspective, and performance or impact measurement through the user's perspective (Ahmad, 2016). Now the service quality seems to appear as a form of attitude and satisfaction.

According to the literature, many tools such as the Balanced Scorecard Model (Kaplan and Norton, 1992), EFQM model (European Foundation for Quality Management), SERVQUAL Model (Parauraman et al., 1988), SERVPERF Model (Cronin and Taylor, 1994), Total Quality Management Model (TQM) (Powell, 1995), LibQUAL+™ instrument (Association of Research Libraries), and ClimateQUAL model have been used to measure library service quality. All these tools have concentrated on assessing different aspects of the library service. LibQUAL+™ instrument is specifically designed for library evaluation purposes and it has been tested in many continents and many environments in the USA, Europe, and Asia.

Service quality is measured from users' point of view as many studies emphasized that the determination of quality should be based on users' view of perception. Among many tools administered to measure service quality, the LibQUAL+ tool seems more specific to the academic library context. Despite a few possible localization issues in the Sri Lankan context, the LibQUAL+ tool can be adopted to build up a measuring tool for user perception of the library quality in Sri Lanka. LibQUALL+ has 22 survey items to measure the users' perception of the library quality. The same measuring items can be adapted to measure the librarians' perception of service quality as service providers.

Only the user's perspective or provider perception-based measures cannot decide the library's overall service quality because assessment of library service quality requires both expertise and objectivity (Walters, 2003). Although there are many powerful tools to measure service quality in academic libraries, most assessment tools used today are one-sided (Xi and Levy, 2005;Boyce, 2017). Most importantly, the library's resources and capabilities play a major role in ensuring quality and satisfaction. Therefore, proper identification of resources and leveraging of their capabilities are essential for providing promised services. Thus, human factors, financial factors, technological factors, physical space, equipment, and other environmental factors directly influence the quality of

services provided. Then there should be a relationship between resource capabilities and service quality.

However, the existing tools have ignored the impact of strategic utilization of resources capabilities on the service quality of the library. It is puzzling if the quality is determined only on the attitudinal basis on global criteria without considering the relative importance of capabilities. Based on the above discussion, an integrative measuring model associated with users' perceived quality, librarians' perceived quality and resource capabilities would provide a much more comprehensive, representative, and conditional base picture of quality other than global benchmarking which is arbitrarily imitating the global criteria. Based on this approach it will be able to formulate a national level service quality index for university libraries. As this approach is still lacking in the literature, conceptual and empirical investigations are required to address the research gap. This study attempts to address this void. The purpose of this study is to develop an integrative service quality model associated with resource capabilities applicable to university libraries of Sri Lanka and thereby propose a service quality index for university libraries of Sri Lanka. The objectives of the present study are, to conceptualize the integrative model of service quality and resource capabilities, to measure the key variables of resource capabilities and perceived service quality and to propose a service quality index for university libraries of Sri Lanka.

Methodology

The study followed a quantitative method of sample survey through a self-administered questionnaire and descriptive analysis of data. Firstly, the key variables associated with service quality and resource capabilities in academic libraries were identified through the literature review based on the resource-based view and formulated a conceptual model representing these variables (Figure 1). The model measures the integrated service quality of the library through five variables viz. competitive capabilities, dynamic capabilities, agility capabilities, service provider's perceived quality, and service user's perceived quality (Figure 1).

Secondly, a survey instrument that included five questionnaires to measure the key variables and sub-variables was designed with the literature review and expert panel opinion following a vigorous process of scale development (Zamanzadeh et al., 2015; Carpenter, 2017). Accordingly, Questionnaire 1 which is available in the published literature (Arachchge et al., 2021) was utilized to measure the competitive capabilities (CC) of the library. Questionnaire 2 was adapted from Kump et al. (2019) to measure dynamic capabilities (DC) in the library context and the Questionnaire 3 was adapted from Worley and Lawler (2009) rephrasing and adding survey statements to fit the academic library environment aiming to measure agility capabilities (AC) of the library (Arachchige, 2021).

Questionnaires 4 and 5 were adapted from LibQUAL+tool (Association of Research Libraries, n.d.) rephrasing the survey statements to fit the local environment with the focus on service provider approach and service user approach respectively. They were aimed to measure the librarian's perception (PSQ) and user's perception (USQ) of service quality of their libraries.

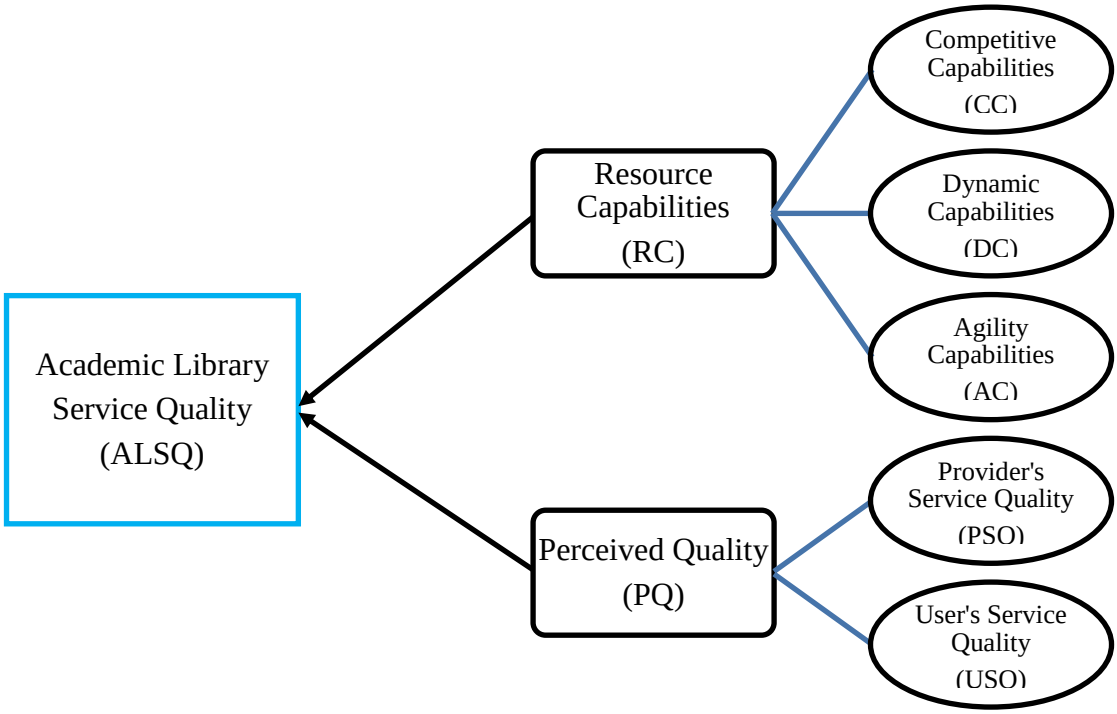

Figure 1: SEQ Figure * ARABIC 1: Service Quality model for university libraries

Questionnaire 1 (CC) contained four sub-variables viz, Valuable, Rare, Inimitable, and Organized (Barney 1991), and 16 items to measure them (Arachchige, 2021). Questionnaire 2 (DC) included three sub-variables viz. Sensing, Seizing, and Reconfiguring (Teece et al.) and 14 items to measure them. Questionnaire 3 (AC) included three sub-variables viz. Robust strategy, Adaptive design, and Cohesive Leadership (Worley and Lawler, 2009; Najrani 2016) and 16 items to measure them. Each of the questionnaires 4 (PSQ) and 5 (USQ) included three sub-variables viz. Service effect, Information Control, and Library as Place and 22 item statements to measure the perceived service quality. The zone of tolerance subscales: the minimum expected level and desired level of quality were ignored as they were confused to respondents and only the perceived level was selected for measuring of the service quality level. All the 90 survey item statements (CC-16+DC-14+AC-16+PSQ-22+USQ-22=90) were measured on 7 points Likert type scaling where 1= Strongly Disagree, 2=Generally Disagree, 3= Disagree to a certain extent, 4= Neither agree nor Disagree, 5= Agree to a certain extent, 6=Generally Agree, and 7=Strongly Agree.

The questionnaires went through a pre-test to get empirical feedback with a team of five library professionals who have knowledge of the field with doctoral/MPhil qualifications and more than ten years of experience in the university library field. The instrument was tested empirically with a random sample of 48 respondents from the university population. As the university librarian population is very low in Sri Lanka, five questionnaires were undergone separately to manage the issue of sampling adequacy. The exploratory assessment with SPSS (version 22, Principal Component Analysis, Varimax rotation) showed that all the items of five questionnaires were loaded above the .5 threshold.

For questionnaire 1, four factors have eigenvalues over Kaiser's criterion of 1, and in combination, it explained 75.3% of the variance, and four factors were retained. The clustering of items suggests that Factor 1 represents the 'Valuable' domain, Factor 2 represents the 'Organized' domain, factor 3 represents the 'Rare' domain and factor 4 represents the 'Inimitable' domain. On the reliability scale, overall Cronbach Alpha was 0.782 which is well above the accepted level. Table 1 shows the factor loading on each item of questionnaire 01 (loadings below 0.5 were suppressed).

Table 1: Facture structure of the competitive capability measuring questionnaire

Rotated Component Matrix[a]				
Term	**Component**			
	1	**2**	**3**	**4**
1. The electronic resource collection of the library is well covered with various subject disciplines so that it can attract more users.	**.833**			
2. The resource collection of the library is adequate, relevant, and comprehensive so that it can fulfill any requirement of users.	**.830**			
3. The staff of the library is smart and proficient that it can properly address the information needs of users.	**.809**			
4. Our library is popular as a place of study, research, and socialization.	**.789**			
5. Our library spends less on the hiring of experts because our employees have good knowledge and training in library matters	**.765**			
6. Users can fulfil a variety of needs from the library because downloading, printing, and photocopying facilities are available within the library	**.750**			
7. Access Tools of our library are well organized in a user-friendly manner so that users can locate needed information		**.858**		

Table 1: Facture structure of the competitive capability measuring questionnaire

Rotated Component Matrix[a]				
on their own				
8. Procedures, policies, and opening hours of our library are arranged to maximize the convenience of users		**.835**		
9. Users can easily access the library resources from their home/office with online help through the website		**.824**		
10. Our employees are well trained and properly assigned to identify and serve different needs of different users		**.690**		
11. We have special and rare to find subject librarians in our staff.			**.889**	
12. Information Resource Collection of the library contains a lot of print and e-resources which are very difficult to find anywhere else.			**.877**	
13. We are the first to apply the modern and newest technology to the services offered by the library.			**.846**	
14. Our library has a prominent history as an efficient and attractive academic library in the country				**.857**
15. The culture and social image of our library is unique because other organizations cannot copy them				**.803**
16. The value-adding process of our library is difficult to be copied by others in the field				**.784**
Eigenvalues	4.508	3.945	2.260	1.336
% of Variance	28.178	24.655	14.125	8.351
Cronbach Alpha	.887	.863	.895	.896

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 6 iterations.
*these items are removed from the final questionnaire and main analysis.

For questionnaire 2, three factors had eigenvalues over Kaiser's criterion of 1, and in combination, it explained 71.102% of the variance. The instrument was aimed to extract three factors as in the original. The clustering of items suggests that Factor 1 represents the 'Sensing' domain, Factor 2 represents the 'Transforming' domain and factor 3 represents the 'Seizing' domain. On the reliability test of the scale, overall Cronbach Alpha was 0.893 which is well above the accepted level. Table 2 shows the factor structure of questionnaire 2.

Table 2: Facture structure of the dynamic capability measuring questionnaire

	Rotated Component Matrix			
		Component		
		1	2	3
DCS1	Our library learns from the best practices prevailing in the information service sector	**.869**	.235	
DCS2	We systematically observe and evaluate the current needs of university communities	**.862**	.163	
DCS3	We are staying up to date with the current market situation related to information services	**.840**		.310
DCS4	Our library has an eye on our competitors' activities and technology they use	**.817**	.131	.209
DCS5	We as a university library know how to access newly emerging information sources	**.815**	.218	.159
DCT6	Our library has demonstrated its strengths and abilities in implementing changes in the past		**.825**	.251
DCT7	Our library can practice change projects together with its daily operations	.216	**.806**	.314
DCT8	We successfully implement changes in our library by defining clear responsibilities to the staff	.252	**.792**	
DCT9	We have regular transformational programmes to overcome unexpected interruptions		**.772**	.144
DCT10	Our library takes correct decisions on strategic changes consistently	.189	**.536**	.243
DCZ11	Our library can quickly relate to new knowledge and technologies emerging in the field	.117	.295	**.815**
DCZ12	We actively recognize and utilize new mechanisms in our service operations	.226	.244	**.799**
DCZ13	We take the changes as opportunities to develop and provide new services with the use of current information		.103	**.788**
DCZ14	Our library is capable of turning new technological knowledge into the process and product innovation	.337	.217	**.749**
Eigenvalues		6.091	2.299	1.564
% of Variance		43.506	16.422	11.174
Alpha		.922	.848	**.860**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

Table 3: Facture structure of the agility capability measuring questionnaire

	Rotated Component Matrix			
		Component		
		1	2	3
AGR1	The library often develops strategies to achieve its objectives in a flexible manner	**.920**		
AGR2	The strategies of the library are focused on future development and growth	**.913**		
AGR3	All employees of the library work under a unified sense of mission.	**.871**		
AGR4	The library can quickly identify the changes of user needs and required technology for them	**.856**		
AGR5	The library is good at applying experiences and forming new strategies	**.839**		
AGR6	The library provides employees an accurate sense of how the organization is performing	**.834**		
AGA7	The library has formed a flexible structure to enable employees to take advantage of opportunities		**.809**	
AGA8	The library reallocates its resources (e.g., budgets) easily as circumstances require		**.798**	
AGA9	The library is capable of adjusting its structure quickly to address new opportunities		**.788**	
AGA10	The library management encourages innovation in the field		**.783**	
AGA11	The library appreciates and pays for the skills and knowledge of employees that contribute to performance		**.763**	
AGA12	The library has formal mechanisms to connect senior management at all levels		**.649**	
AGS13	The library management encourages innovation in the field			**.828**
AGS14	All the employees of the library work as a cohesive team to perform promised services			**.786**
AGS15	The library develops leaders at all levels of library operations			**.723**
AGS16	The library supports its employees develop new knowledge and skills			**.701**
Eigenvalues		5.977	4.457	1.072
% of Variance		37.356	27.853	6.698
Alpha		.939	.898	**.854**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

For questionnaire 3, three factors had eigenvalues over Kaiser's criterion of 1 and it explained 71.907% of the variance. Cronbach Alpha for each factor was well above the accepted level and overall Coronbatch Alpha scored .883. Accordingly, cluster 1 represents the 'Robust Strategy' domain, cluster 2 represents the 'Adaptive Design' domain and cluster 3 represents the 'Cohesive Leadership' domain of the construct. Table 3 explains the factor loadings of each item and the alpha value of each factor.

For questionnaire 4, three factors had eigenvalues over Kaiser's criterion of 1, and in combination, it explained 73.56% of the variance. Overall Cronbach Alpha level was 0.831 which is well above the accepted level. Item clustering confirmed factor 1 represents the 'Service Affect' domain, factor 2 represents the "Information Control Domain' and factor 3 represents the 'Library as Place domain as in the original LibQUAL tool (Table 4).

Table 4: Facture structure of the service provider perception measuring questionnaire

	Rotated Component Matrix			
	Survey Items	**Component**		
		1	**2**	**3**
PQSA1	Employees of the library can still confidein users	**.865**		
PQSA2	Employees of the library give individual attention to users	**.862**		
PQSA3	Our staff is always ready to respond to users' questions	**.857**		
PQSA4	Our employees work with users in a caring fashion	**.829**		.229
PQSA5	Employees of the library have the knowledge required to answer users' questions	**.789**		.332
PQSA6	Employees of the library are reliable in handling users' service problems	**.778**		
PQSA7	Staff of the library is always courteous towards users	**.743**	-.219	.200
PQSA8	Our employees have willingness to help users	**.724**	-.213	.233
PQSA9	Library's employees can properly understand the needs of users	**.671**	-.168	.260
PQIC1**0**	Electronic resources of the library are accessible from the user's home or office	-.125	**.903**	-.159
PQIC11	The library has made available easy-to-use access tools that allow users to find things on their own	-.123	**.881**	-.127
PQIC12	The library has a sufficient amount of electronic information resources that users need		**.871**	
PQIC13	The library has modern equipment to let users easily access needed information		**.852**	

Table 4: Facture structure of the service provider perception measuring questionnaire

	Rotated Component Matrix			
	Survey Items	**Component**		
		1	**2**	**3**
PQIC14	The library has a sufficient amount of printed materials that users need for their work		**.835**	
PQIC15	The library has made independent use of information through easy accessibility		**.803**	-.200
PQIC16	My library has an efficient Web site that enables the user to locate information on their own	-.219	**.784**	-.173
PQIC17	The library has print and/or electronic journal collections required for users' works	-.158	**.781**	
PQLP18	The library has made available sufficient space that inspires study and learning	.199	-.116	**.911**
PQLP19	The library has allocated comfortable and quiet space for individual activities of users		-.185	**.891**
PQLP20	The library has made available community space for group learning and group study	.175	-.128	**.882**
PQLP21	The library has been established in a comfortable and inviting location			**.880**
PQLP22	The library is capable of functioning as a getaway for study, learning, and research	.242		**.872**
Eigenvalues		**8.238**	**4.796**	**3.150**
% of Variance		**37.445**	**21.801**	**14.318**
Alpha		**.933**	**.945**	**.949**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 4 iterations.

Questionnaire 5 was aimed to measure the perceived service quality of users. An initial exploratory factor analysis was run to examine the factor structure. Three factors had eigenvalues over Kaiser's criterion of 1 and in combination, it explained 67.762% of the variance. Table 5 shows the factor loading after rotation. The clustering of items suggested that Factor 1 represents the Service Effect domain (9 items), Factor 2 represents the Information Control domain (8 items) and factor three represents Library as Place domain (5 items). Cronbach's Alpha 0.958 for overall 22 items showed the reliability of the instrument.

Table 5: Facture structure of the service users' perception measuring questionnaire

	Rotated Component Matrix			
Item code	Survey items	Component		
		1	2	3
UQSA1	Employees of the library still confide in me for using the library.	**.850**	.174	.205
UQSA3	Employees of the library are consistently courteous to me	**.841**	.143	.215
UQSA2	Employees of the library give me individual attention in library matters.	**.814**	.286	.209
UQSA9	Employees of the library are dependable in the handling of users' service problems	**.798**	.244	.151
UQSA4	Employees of the library are always ready to respond to my questions	**.764**	.276	.269
UQSA5	Employees of the library know how to answer my questions	**.759**	.158	.214
UQSA6	Employees of the library deal with me in a caring fashion	**.748**	.378	.223
UQSA7	Employees of the library can understand my needs	**.710**	.364	.152
UQSA8	Employees of the library have the willingness to help me	**.677**	.417	.106
UQIC10	The library makes electronic resources accessible on/off campus	.252	**.805**	.172
UQIC12	The library provides printed materials I need for my studies and work	.209	**.752**	.315
UQIC11	The library Website enables me to easily locate information on my own	.271	**.672**	.424
UQIC13	The library provides a wide range of electronic information resources I need	.342	**.653**	.337
UQIC15	The library has easy-to-use catalogues that allow me to find things on my own	.399	**.574**	.385
UQIC14	The library has modern equipment that lets me easily access information I need	.269	**.571**	.282
UQIC16	The library has made facilities for independent use of information resources	.397	**.552**	.406
UQIC17	Printed and/or electronic journal collections I require for my work	.289	**.530**	.360
UQLP18	The library provides comfortable space that inspires	.147	.308	**.841**

Table 5: Facture structure of the service users' perception measuring questionnaire

	Rotated Component Matrix			
Item code	**Survey items**	**Component**		
		1	2	3
	study and learning			
UQLP20	The library is located in a comfortable and inviting place	.221	.273	**.785**
UQLP19	The library has quiet space for individual activities of users	.169	.292	**.742**
UQLP22	The library has made available community space for group learning and group study	.217	.205	**.740**
UQIC21	The library of my university is a gateway for study, learning or research	.265	.327	**.554**
Eigenvalues		11.612	2.269	1.027
% of Variance		52.782	10.312	4.668
Alpha		.950	.913	.878

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

Thus based on the above discussion, the instrument was assumed to be valuable and reliable to collect data from the sample.

Data Collection

The study was designed to collect data from two sets of samples; service providers and service users. Data were collected from 2247 users (students + teachers) and 91 library professionals randomly selected from eight state universities governed under UGC of Sri Lanka viz. The University of Peradeniya, University of Sri Jayewardenepura, University of Kelaniya, University of Jaffna, University of Ruhuna, Rajarata University, and Wayamba University. The questionnaires (1-4) were distributed among librarians via e-mail in February 2021 collected within two weeks. Questionnaire 5 was distributed among user samples physically (and through a Google form in cases of physical unavailability) with the support of the librarians of select universities. Simple statistical analysis was performed to determine the average and percentage of responded values.

Results and Discussion

The response rate was 75% which is satisfactory for the analysis. An initial exploratory factor analysis (SPSS 22nd version) run separately for each questionnaire verified the factor structure proposed in the

model and each item of all five questionnaires indicated the Eigenvalues over 0.50 assuring the validity of the data. Total Cronbach's alpha for each questionnaire (CC- 0.819, DC- 0.890, AC- 0.850, PSQ- 0.835 and USQ- 0.839) verified the accepted reliability level of the data.

Respondent's ratings against each survey item were calculated according to the scale value (1-7) and summated against the respondent. Then the average score per each key variable (CC, DC, AC, PSQ, and USQ) was calculated by dividing the sum of the score for the variable by the number of respondents. Averages for key variables (CC, DC, AC, PSQ, and USQ) were summated to obtain the total per university library (Table 1). The results indicate that the agility capabilities and competitive capabilities are higher than the dynamic capabilities in all libraries and the service providers' perception of service quality is higher than the users' perception of services quality (Figure 2). Yet, agility capabilities and competitive capabilities showed variations among libraries.

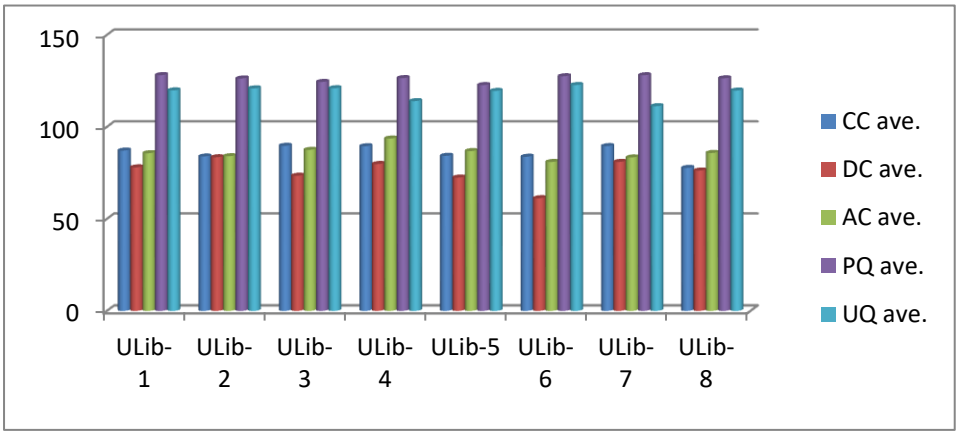

Figure 2: Perceived resource capabilities and perceived service quality in university libraries

To determine the overall integrated quality level per university, firstly, the maximum possible score per each key variable was calculated by multiplying the maximum scale value (7) by the number of survey items (16x7=112, 14x7 =98, 16x7=112, 22x7=154, and 22x7=154) and summated the products together (112+98+112+154+154= 630). Secondly, the total score per university library (CC+DC+AC+PSQ+USQ) was divided by the maximum possible score (630) according to the following formula.

$$ISQ = \frac{CC_{average} + DC_{average} + AC_{average} + PSQ_{average} + USQ_{average}}{630},$$

where,

ISQ= Integrated service quality, $CC_{average}$ =average score for competitive capabilities,

$DC_{average}$ = average score for dynamic capabilities,

$AC_{average}$ =average score for agility capabilities,

$PSQ_{average}$ = average score for providers' perception,

$USQ_{average}$ = average score for users' perception.

Table 6 indicates the average score for each key variable, the summated value, maximum possible score, and the quality level achieved by each university library. According to table 1, any university library that achieved the value 01 will reach the complete quality level. Demarcation of quality levels can be determined as 0.9-1= highest quality, 0.75-0.89= high quality, 0.5- 0.74= average quality, 0.35-0.49=low quality and below 0.34= very low quality. Or from 0.75 to 1= high quality, 0.5 to 0.74 = average quality and below 0. 49 = poor quality. This can be multiplied by 100 if it is required to obtain the percentage value.

Table 6: Integrated Service Quality Index for university libraries

Library	CC ave.	DC ave.	AC ave.	PQ ave.	UQ ave.	Total sum ave.	Sum Possible total	Achieved quality level	Quality in %
ULib- 1	87.143	78.000	85.714	128.143	119.839	498.839	630	0.792	***79.18***
ULib- 2	83.917	83.500	84.083	126.333	120.938	498.771	630	0.792	***79.17***
ULib- 3	89.727	73.455	87.545	124.455	121.034	496.216	630	0.788	***78.76***
ULib- 4	89.500	79.833	93.667	126.500	114.009	503.509	630	0.799	***79.92***
ULib-5	84.267	72.467	86.867	122.733	119.561	485.894	630	0.771	***77.13***
ULib- 6	83.769	61.231	80.923	127.538	122.756	476.218	630	0.756	***75.59***
ULib- 7	89.538	81.000	83.385	128.077	111.273	493.273	630	0.783	***78.30***
ULib- 8	77.714	76.286	85.857	126.429	119.769	486.055	630	0.772	***77.15***

The last two columns of Table 6 show the integrated service quality level of each library.

Conclusions

The purpose of this study was to propose a service quality index applicable to university libraries of Sri Lanka. Considering the research gap in the literature the study aimed at the conceptualizing of an integrated multifaceted model to evaluate the service quality. The proposed model seeks the service quality of the university library in five aspects: competitive capabilities, dynamic capabilities, agility capabilities, serviced provider's perceived quality, and service users' perceived quality. It considers the competitive factors of resources available in the library in terms of valuable, rare, inimitable, and organized because the university library cannot achieve the quality without competitive resources.

The model also concentrates on the condition of dynamic capabilities in terms of sensing, seizing, and reconfiguring because quality is immaterial without leveraging the resource to match the market needs. Here the library needs to sense the unpredictable changes of the library environment, seize the opportunities from these changes and reconfigure the resources and capabilities to implement the innovations and modifications to face the changes of user requirements.

Moreover, the model considered the organization's agility capabilities because just having the resources cannot complete the performance. Activation of dynamic capabilities is difficult if the library has no agile setup to face the unpredictable turbulence. For this, the library should have agility capabilities such as robust strategies to respond to the market needs, a flexible structure capable of adapting quickly to the changes, and a cohesive team guided by an efficient leadership to use the resources to fulfil the market needs.

Quality is a psychological concept and it is necessarily related to the customer perception of satisfaction. Therefore the model considers the user's point of view regarding the library service. Here, the perception of the service provider as well as the perception of the service user is important. Therefore, the model concentrated on the evaluation of three key service factors of the university library viz. service effect, information control, and library as place in both points of view of the use as well as the librarian. This includes the conditions of staff support, access to information resources, and the physical space and facilities of the library. Accordingly, the librarian's perception of how good they provide the services is considered while considering the user's perception of how good the services they receive. Overall perceived service quality is determined in both aspects (service provider and service user) and this balances the impact of the provider-user perception gap towards the quality.

Based on the conceptual model, the survey instrument which consisted of five questionnaires was constructed. All the five key variables were measured through the survey instrument and results were averaged to integrate resource capabilities and perceived service quality (objective 2). The proposed index indicates the overall quality level of each library as an indicator. It can be used to measure the service quality level of a particular university library and identify the development needs and areas for ensuring service quality. This study concentrated on the service quality in multiple aspects associated with the personalized perception of quality as well as the perception of resource capabilities of the library. The author adheres that just asking the customer how service is good is not enough to measure the service quality. Service quality should go beyond satisfaction and personalization, but on the overall environmental condition of the library. This may also address the limitation of the benchmarking strategy such as arbitrarily copying the other organization's criteria without localization. Benchmarking might be incomplete if the resource-capability gap between the developing countries

and developed countries is wide. This model also may address the cultural, localization, and socio-economic impact on service quality.

By further developing the index with a computer-based program, it might be able to facilitate the stakeholders of the library to contribute to the evaluation of service quality in a frequent period. More research can identify the latent factors associated with the service quality measuring in university libraries in a global setting.

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Good Practices in Quality Assurance (GP)

GP1

Quality Assurance in Open and Distance Learning (ODL) System and Quality Framework for ODL of University of Ruhuna

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Abstract

Open and Distance Learning (ODL) concept focuses on providing opportunities in education that is free from barriers of time, age, place and offering flexible learning opportunities at affordable cost. Quality assurance in ODL is designed with the aim of improving and proving the quality of institutional methods, maintaining accountability, improving the effectiveness and the efficacy of all the activities. These include the learners' satisfaction, developing academic programmes, producing learning materials, services and support to the learners, and the standards of the outcome. University of Ruhuna has contributed to expand access to higher education and to acquire other competencies via providing the opportunities to follow external degrees and extension courses through the ODL system. Due to various disturbing factors, there has been a huge gap in maintaining standards in terms of service delivery, learners' satisfaction, student learning, teaching, gaining public confidence, demonstrating good practices, the credibility of awards, and the employability of graduates in the ODL system of Distance and Continuing Education Unit (DCEU) of the university during the past period. With the establishment of Quality Assurance mechanism through the Centre of Quality Assurance (CQA) of the university and the Internal Quality Assurance Cell (IQAC) of the DCEU, implementing quality measures, quality enhancement and monitoring mechanism with respect to the academic, examinations and administrative functions are in the process of developing. This paper presents the quality assurance processes that have been already developed and implemented, suggestions for further enhancements, and then the internalized monitoring procedures suggested on achieving the expected standards.

Keywords: Open and Distance Learning, Quality Assurance Process, Quality Measures, Quality Enhancement

Introduction

Distance and Continuing Education Unit (DCEU) of the University of Ruhuna that was initially established as External Education Unit in 1997, was formally established in 2012 according to UGC

circular of 932 issued in 2010. DCEU conducts Bachelor of Art (external) Degree program (EDP) and Extension courses (ECs) such as Certificates and Diploma programs, leading to developing skills and acquiring competencies through Open and Distance Learning modes. These programs are conducted with the collaboration of different Faculties of the university, namely BA degree program from Faculty of Humanities and Social Sciences (HSS) and, Diploma and Certificates programs from faculties of H & SS, Management & Finance and Agriculture etc.

Assuring the quality of education provision is a fundamental aspect of gaining and maintaining credibility for programmes, institutions, and national systems of education worldwide[2]. There is a growing demand for accountability and transparency in higher education worldwide. Open and Distance Learning System requires maintaining and proving the quality of learners' educations as ODL systems are different from conventional education processes. Physical separation of learners from teachers (less face to face contact), gaps in learners' support from teachers and institutions, and different *assessmen*t methods, etc. are the main characteristics in the ODL system. Therefore, the quality assurance (QA) of ODL aims at placing the interests of the learners and the facilitation of learning at the center. This needs to be addressed at all the activities at every level and to constantly strive to improve the effectiveness and efficiency of the activities and programmes. The QA process of ODL should lead to the achievement of standards of the programs and goals and objectives of the center that are aligned with the institution's vision and national policy.

As the quality of the ODL is merely judged by in terms of learning material, academic programmes, services provided, and the standard of the qualification holders produced, Quality assurance of ODL systems is essential to be framed on following main categories,

- Institutional policy documents respect to ODL and Quality Assurance
- Admission criteria and selection of students
- Planning and conducting of the academic programs
- Teaching and learning material
- Quality of the staff
- Students learning
- Assessment procedure and the releasing results
- Quality of the qualification provided

- Student services/supports
- Progression rate and retention rate of learners
- Tracer Studies
- Internalization of quality assurance and external reviewing process
- Quality of the processes in the Institute
- Accountability of funds used

Status of the Quality Assurance procedure in DCEU of University of Ruhuna

DCEU has been involved in producing Bachelor of Arts degree graduates and different qualifications holders like Certificates, Advanced Certificates, and Diploma. Due to various disturbing factors, quality assurance procedures pertaining to teaching, learning, examination, and services had not been adequately practiced since many years at DCEU. Considering this situation, DCEU has taken steps to establish an Internal Quality Assurance Cell to the DCEU in 2021 in order to attend in quality enhancement and monitoring procedures in all the processes in DCEU aiming to produce qualification holders with required quality and inefficient manners.

As the initial work, the Quality enhancement procedure for ODL in DCEU of University of Ruhuna is formulated and implemented under four categories given.

1. Quality Assurance process for the academic programmes
2. Learners support
3. Quality enhancement process of the operational procedures academic, examination & administration
4. Quality enhancement of examinations/ assessments of External degrees (EDP) and Extension courses (EC)

Quality Assurance Process for the Academic Programmes

- Internal Quality Assurance Cell (IQAC) for Distance and Continuing Education Unit (DCEU) has been established in order to assist the quality enhancement of the ODL system.
- IQAC of DCEU set the guideline for reviewing the process (internal and external) of new academic programmes before implementing.

- All the new courses are forwarded to the Centre for Quality Assurance of the university for the necessary reviewing process.
- SLQF guidelines are to be implemented in all ODL programmes
- The steps that have to be followed when new courses/ programs are planned to be commenced have been established, get approved, and communicated to all the faculties.
- A mechanism has been implemented to monitor the progress of ongoing courses (teaching/learning) weekly and monthly.
- The regular progress is forwarded to the higher Board of studies and Management Committee to get necessary steps for further improvement or to solve any situation affected to the learners
- Staff / Faculties are encouraged to start new programmes (Certificates/ Diploma) which are having market values, can contribute to the socio-economic developments, and acquire competencies and essential skills.

Learner Support System

- MIS has been developed for learners in all the programmes.
- An effective communication system has been established to communicate with learners for academic and examinations matters with different modes.
- A Grievances Committee has been established at DCEU to look into students' grievances and to give quick solutions whenever possible.
- The facility has been developed to apply the students' grievances online.
- LMS access is given to all the learners registered under DCEU.
- Online teaching/ learning methods have been implemented.
- The online application process for courses has been developed.
- All the essential information on courses is uploaded to the Web.
- Steps are taken to provide guidebooks/ handbooks for all the learners.
- Steps to establish students counselling service for ODL students.
- Academic calendars, lecture timetables are uploaded to the Web.
- DCEU staff members are assigned for separate programs in order to attend to the work and students matters efficiently.

Quality enhancement process of the operational procedures pertaining to academic & administration

- DCEU staff has been properly assigned to the main task with respect to EDPs and ECs.
- Official Communication Channels for the activities have been established.

- Proper communication channels for DCEU with the Board of Studies and Faculty Boards have been established.
- Proper procedures were developed for appointing visiting staff for the courses.
- Duties for the Coordinators of EDPs and ECs and the responsibilities of DCEU pertaining to courses/ programmes have been prepared and communicated to the respective parties.
- The process was developed for proper maintenance of the records pertaining to all the activities.
- Steps have been taken to work efficiently and effectively at the Centre.
- Steps have been taken for proper financial management and maintaining the records properly.

Quality enhancement of examinations/ assessments of External degrees (EDP) and Extension courses (EC)

- Proper mechanism was developed to conduct examination work efficiently.
- The process for conducting examinations and releasing results has been expedited.
- Process for appointing examiners, moderators, marking, etc. have been revised to make them more transparent and effective.
- Procedure for handling examination work is properly documented.

With the implementation of the above processes, the DCEU has shown improvement in the processes with many aspects such as support to the learners for communicating their problems with DCEU, conducting examinations at the proper time, expediting the results releasing process, proper conducting of academic programs/ lectures and proper handling of office work and working inefficient manner, etc.

Conclusions

Setting the standards and the mechanism for enhancement of the quality and implementing internalization of quality assurance procedures for the ODL system in DCEU has been successful. Some more procedures need to be established in the future.

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GP2

A Retrospect on the Curriculum Development Process of the Faculty of Humanities and Social Sciences, University of Ruhuna

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Abstract

This paper describes the process of the curriculum revision process for 13 degree programmes offered by the Faculty of Humanities and Social Science of the University of Ruhuna. Firstly, it justifies the background and rationale for embarking on an inclusive approach to revise the existing curricula. The challenging factors identified during the curriculum development process were analysed to come up with a comprehensive mechanism for a qualitative transformation in higher education in Humanities and Social Sciences. Secondly, it discusses the steps taken and strategies applied from the beginning to the final output in order to ensure that the expected objectives are achieved.

***Keywords*:** Curriculum Development, Curriculum Development Committee, Humanities and Social Sciences, Employability, Graduate Attributes

Introduction

This paper intends to describe the experience of the curriculum revision process undertaken from 2018 to 2020 at the Faculty of Humanities and Social Sciences, University of Ruhuna. Further, it sheds light on how the curriculum in Humanities and Social Sciences could be revised addressing the market needs while not compromising the core of the discipline and, as such, enlightens the "marketability" of the discipline of Humanities and Social Sciences, setting against the dominant attitudes towards the discipline in the society.

Background and Rationale

An effective curriculum should reflect the rationale and philosophy-based goals and objectives (Hussain et al., 2011; Redon & Angulo 2015; Alsubaie, 2016). The curriculum development has two broader connotations as pointed out by Angulo (1994) and Soto (2015). Firstly, it is a process of moulding learners with essential skills and talents through shaping and reshaping the contents and the process of instructions in the educational environment based on the experiences accrued by working with the existing curricula. The other connotation emphasises that as a response or reaction to several

exogenous encounters coming as policy recommendations or directives or motivational threads of consultations or training experience.

This comprehensive analysis provides an ample pathway to comment on the need for curriculum revision in the Faculty of Humanities and Social Sciences, University of Ruhuna. Two clusters of factors enforced a syllabus revision in the Faculty of Humanities and Social Sciences. Firstly, the external factor: the unemployability of graduates in Humanities and Social Sciences, which has long been raised in different platforms by different parties. The research emphasised that these graduates lack the skills and the attitudes required for the present-day world of work (Ariyawansa, 2008; The World Bank, 2009; Gunathilake *et al.*, 2010; National Audit Office, 2019). As a result, many parties emphasised that the traditional curricula, which focused more on subject knowledge, needed to be revised, enabling the graduates in Humanities and Social Sciences to succeed in the present-day job market (Bridgstock, 2009; University Grants Commission, 2015). The higher education authorities took the policy decisions and accordingly provided guidelines and directives that led to a drastic change in Humanities and Social Sciences education in Sri Lanka. However, some scholars have vehemently argued against the marketisation of humanities and social sciences, emphasising that it would damage the discipline's core (Delucchi, 1997; Costa, 2019).

Secondly, the internal factor: the faculty had recognised the need for a curriculum revision based on its own experience and findings. The existing curricula developed in 2014, were not updated to incorporate the advancements in the disciplines. The faculty at that time had only two-degree programmes *i.e.* BA (General) and BA (Special) programmes. Programme Reviews were done on these two programmes in 2017, and they got B (60%) and B (68.65%) grades, respectively (Faculty Program Review Report on BA Special and General, 2017). However, the reviewers had made some important recommendations for further improvements in the programmes. While taking necessary steps to implement reviewers' recommendations, the faculty started a timely discussion on the need for a complete revision of the curricula.

Furthermore, the tracer studies on employment of most recent graduates, conducted annually by the university, were another alarming factor that forced the faculty to rush towards a complete revision of the existing curricula. The studies presented a declining employment rate of the graduates produced by the faculty. Under the influence of these two factors, the faculty started the revision of the existing curricula in 2018. We took both these views into account in the process of revision of the syllabi. Our main objective was to produce graduates for market needs without compromising the philosophical core of the subject disciplines.

Process of Curriculum Development

The process started with appointing a faculty sub-committee which was later upgraded to the Curriculum Development Committee (CDC). After reviewing relevant literature and a series of discussions with stakeholders, the curriculum development committee first formulated a philosophy for the task of curriculum revision. As such, the faculty had a philosophical background for revising the curricula: adhering to all the guidelines and directives, addressing the issue of unemployability and under employability of arts graduates, but not compromising the core of the discipline, the faculty would revise its syllabi with the aim of producing graduates who would succeed in the current job market not by merely transforming into "operators", but by adding values to the world of work with the core of the humanities and social sciences with which they are deeply enriched.

In other words, the philosophy of the curriculum revision of the faculty was not just to add some "needs" of the market highlighted by the surveys. On the contrary, while addressing those issues and adhering to the guidelines and directives, the faculty also wanted to find out and bring forward what humanities and social sciences demand in the present job market. Furthermore, it also committed not to compromise the core of the discipline, the spirit that only the humanities and social sciences engulf, which is essentially needed for the well-being of the society and required immensely for a just society—the core of human civilization valued beyond the immediate market value.

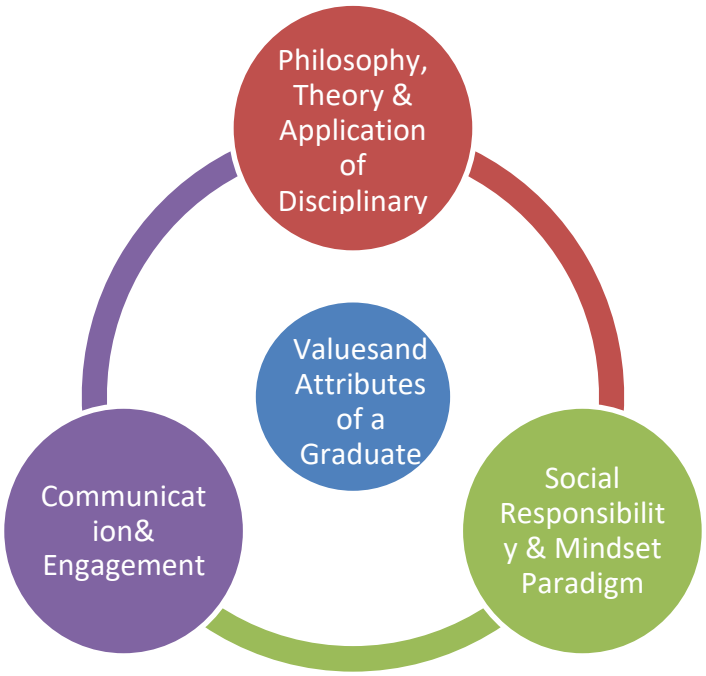

Figure 1: Values and attributes of graduates

After sharing this philosophical standpoint with the academic staff of the faculty, the curriculum development committee developed a model of proportion for curriculum development based on the

guidelines and directives. The model proposed to allocate 60% for the major subject of each degree programme and 40% for the subjects demanded by the job market. The 40% allocated for subjects in demand by the job market was subdivided as 27% for communication and engagement and 13% for social responsibility and mindset paradigm. Parallelly, the curriculum development committee developed a model module and conducted a series of workshops to share ideas and get feedback from the faculty's academic staff. As a result, a format for module development was finalised. The departments were directed to develop the modules for 60% components while the Department of English Language Teaching, IT unit, and other identified experts were directed to develop the modules for 40% components as common modules. The objective was to ensure that all the graduates are competent in the knowledge, skills, attitudes, and mindset paradigm required by the current job market, irrespective of the major discipline of the degree programme they follow.

Table 1: Structure of the degree program

Philosophy, Theory & Application of Disciplinary Knowledge (60%)	**Communication & Engagement (27%)**	**Social Responsibility & Mindset Paradigm (13%)**
1. Foundation and Philosophical basis of the subject 2. Concepts, theories, methodologies, and multifaceted aspects of the discipline 3. Research, Application and Synthesizing	1. Language Proficiency 2. Public Speaking 3. Basic Computer Application 4. Mathematical, Numerical Skills & Logical Reasoning 5. Soft Skills and Personality Development	1. Ethics, Values & Vision of Life 2. Critical & Creative Thinking 3. Cross-disciplinary Knowledge (Humanities/Social Sciences)

Modules developed for this purpose were namely: Elements of English Grammar, Introduction to Information and Communication Technology, Ethics, Values, and Vision of Life, English Reading Skills, Essential Skills in Digital Presentation, Sinhala Writing Skills, Mathematical and Numerical Skills, Speaking and Writing Skills in Tamil, Information Literacy and Scientific Communication Skills, Socio-emotional Skills, Philosophy of Knowledge and Research, Academic Writing Skills in English, Human Resource Management, Business English, Public Speaking in English, Soft Skills and Personality Development, and Critical and Creative Thinking. After completing a four-year degree programme, a graduate earns 58 total credits from these modules. For the three-year degree programme, it stands as 36 total credits.

The respective departments started revising syllabi and developing degree programmes. Each department followed a shared schedule in the process of revision of curricula. The departments first identified the areas of importance in their respective disciplines according to the Subject Benchmark Statements and stakeholder surveys. Based on them, 60% of the components of each degree programme was subdivided, and modules to be developed were identified. The list of modules was sent to experts to ensure that the components comprise the core of each discipline. After that, modules were developed in a series of department-level workshops. Each module was under the scrutiny of an expert in the relevant subject area. The finalised modules were sent to external experts for refinements. As a result, the faculty completed 13 degree programmes with revised curricula, out of which 12 were four-year degree programmes and 1 was a three-year degree programme. In parallel, the by-law committee of the faculty developed a new by-law enabling the implementation of the new degree programmes. The complete revised curricula of all 13 degree programmes were submitted to external reviewers through the CQA of the University of Ruhuna. After receiving reviewers' comments, the curricula of all degree programmes were revised, incorporating suggestions and taking into consideration the comments. After completion of curricula revision, a curriculum mapping was done for each degree programme and graduate profiles were derived accordingly. Finally, the curricula of all degree programmes were submitted for the senate's approval, with detailed reports prepared addressing the reviewers' comments. In 2020, by revising the new by-laws, the faculty achieved one of the targets of the strategic plan of the university: converting all degree programmes to four-year degree programmes.

Figure 2: Sample Graduate profile

Conclusions

Humanities and social sciences have long been the major provider that ensured the expanding the opportunities for higher education for the citizens of the country. As such, they have contributed a lot to create educated citizenship and facilitate upward social mobility. Furthermore, the humanities and social sciences secure the norms of an ethically healthy society, laying down the foundation for a democratic and just society. However, the humanities and social sciences disciplines have been challenged on the grounds of the unemployability of their graduates. Curriculum is the core of education and revising humanities and social sciences curricula addressing the needs of the world of work while not loosening their essence is a challenging task. The Faculty of Humanities and Social Sciences of the University of Ruhuna revised its curricula based on a solid philosophical background, adhering to guidelines and directives of higher education, and addressing the needs of the world of work. The faculty now offers 13 degree programmes with revised curricula and is dedicated to producing "a high-calibre professional, responsible citizen, uncompromising advocate of social justice, and humane and nature-friendly leader."

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