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Institutional Research as a Best Practice in Driving Evidenced Based Decision Making: A Review of the operations of the Campus Office of Planning and Institutional Research at The University of the West Indies, St Augustine Campus

Abstract

The purpose of this reflective study is to examine the extent to which data driven assessment undertaken through Institutional Research, has been strengthened to guide decision making at the St. Augustine Campus. This was identified as an evident weakness of the Campus in the Institutional Accreditation review of 2011. Special attention will be given to the role of the Campus Office of Planning and Institutional Research (COPIR) in not only leading the effort of Institutional Research, supported by a Business Intelligence (BI) system, but also in providing the empirical data to measure institutional performance and assessment. The study will draw on some specific projects which were undertaken by COPIR to provide evidence of particular findings and emerging trends in student and graduate enrolment, progression, and attrition, as well as feedback gathered from institutional surveys. The data generated has served to inform campus management decision making and supports the development of policy, practice and process more strategically. In an environment where higher education is continuously evolving, and institutions are being held more accountable, institutional research will play an increasingly more important role in responding to the needs of its various stakeholders. It is therefore imperative that COPIR strive to strengthen its capacity to provide evidence-based information to improve the rigors of an information management system whilst drawing on the comparative work of peer institutions and keeping abreast of disciplinary best practices.

Keywords: Assessment, Strategic Planning, and Institutional Research, Higher Education

Introduction

It is important that the role and practice of institutional research be described in the context of the evolving higher education industry and the changes ushered in by the expansion of access, technological transformation, competition, an influx of new learners, quality reform and new managerial styles. It should also be recognised not only for providing evidence-based information but also for supporting evaluation and assessment, planning and policy development. This paper will address the historical context of the emergence of institutional research in a global perspective, and will also draw on the experiences at The University of the West Indies (UWI), St. Augustine Campus. In attempting to identify the contribution of institutional research, there will be references of best practices that have enabled higher education institutions to improve data management for knowledge generation, guide management and strategic planning processes, support quality assurance and quality improvement and apply scholarly or research work to produce evidence which feed into special studies. In highlighting the work of the Campus Office of Planning and Institutional Research (COPIR) at St. Augustine, supported by the recently introduced business intelligence system, this paper will attempt to evaluate the extent to which best practices in institutional research are emerging and its influence on management's decision making practices towards institutional improvement.

Problem Statement

The nature of institutional research at the St. Augustine campus is one that is still developing, when compared to the structures, operations and output of some of its international peer institutions. One might argue that this stemmed from a historical tradition where institutional research activities were undertaken under the umbrella of a planning function in the 1990s led by the then Pro-Vice Chancellor Planning and Development who held University – wide responsibility for University Planning while simultaneously supporting the campus. The focus of that Unit at that time in supporting the development and evaluation of the successive University Strategic Plans as well as the organizational and human resource constraints limited the agenda of institutional research to standard categories of data collection in respect of enrolment trends, staffing, and graduation output which were mainly used for statistical publication as well as limited analysis of throughput studies and graduate destination surveys.

Institutional research did not lend itself to providing empirical evidence to support/inform important processes including enrolment management, budget planning and resource allocation, nor was there any significant attempt to undertake environmental scanning to inform programme offerings and student recruitment among other areas. The decade that followed under successive leaderships, continued to present limitations to the functioning of institutional research in a structured way, as very often the work programme was reactionary as opposed to being proactive in identifying an agenda that would serve the decision makers and undertake studies which took account of environmental and institutional changes. Moreover, individual campuses of the Regional University led activities that were specific to the needs their own campus and national interests.

Currently, The University of Planning and Development in its current structure holds University wide responsibility for institutional research of the UWI. While this office was able to serve the St. Augustine Campus for a period of time, the establishment of the Campus Office of Planning

and Institutional Research emerged on the basis of a recommendation of the External Evaluator Report on Institutional Accreditation for the University of the West Indies, St. Augustine Campus. The report while recognising the many successful initiatives involving data collection and data analyses for planning purposes, did highlight concerns about the need for a more systematic culture of assessment and data collection to inform decision making on the Campus.

The report made specific recommendations for the following:

1. The need for regular and comprehensive assessments of campus operations and graduate follow-up in order to establish a practice of continuous quality improvement.
2. The need for stronger focus on establishing specific benchmarks that support data-driven decision making and which are based on a system of measurable objectives and assessment using established quantifiable performance indicators that may be used to benchmark against peer institutions.
3. The need to strengthen campus specific institutional research and assessment.
4. The need to examine the allocation of human resources for institutional research.
5. The need to establish data collection and statistical analyses of student learning outcomes as a priority area.

Purpose Statement

The establishment of COPIR is closely aligned to the University Strategic Plan 2012-2017 under the perspective of Internal Operational Processes. It also directly responds to the issue of creating a more systematic culture of assessment and data collection as highlighted in the recommendations of the External Evaluator Report. Presently, COPIR is poised to providing evidence-based information and analytical support through institutional research, to Campus Senior Management and key administrative decision makers. Understanding the critical role it serves, the Unit observed other institutions for best practice and has selectively organised its functions to include; the collection, compilation, analysis and interpretation of essential data sets, institutional surveys and selected studies, and official reporting to external stakeholders. The Unit also supports both the University Strategic and Campus Operational Planning processes and is directly responsible for monitoring the progress of institutional performance on the Campus. Therefore, in considering the recommendation of the Institutional Accreditation Evaluator Report with regard to enhancing the UWI's decision making capabilities, this paper is now being used as an opportunity to critically review and examine the current functions of the Unit in light of its mission and the mandate.

In order to accomplish this, the study will be reflective in nature with its main objective being to determine the extent to which the work of COPIR has contributed to the development of organizational intelligence that impacts the decision making processes of campus management.

Literature Review

What is Institutional Research?

Researchers such as Terenzini (1991) cited the early interpretation of Nevitt Sandford in 1962 who viewed institutional research as “a series of long-term theoretically based studies of institutional functioning and educational outcomes” (p.22). Another perspective is given by Dressel (1971) who claimed that, “the basic purpose of institutional research is to probe deeply into the workings of an institution for evidence of weaknesses or flaws which interfere with the attainment of its purpose or which utilize undue amount of resources doing so” (p.22). One would argue however, that the concept of institutional research described by Saupe (1990) for example, typified institutional research as “research conducted within an institution of higher education in order to provide information institutional planning, policy formulation and decision making.” This definition is considered to be more informed and applicable to the current environment (p.1) Similarly, Middaugh (1990) articulated the following:

“institutional research is the sum total of all activities directed at empirically describing the full spectrum of functions (educational, administrative, and support) at a college or university. Institutional research activities examine those functions in their broadest definitions and, in the context of both internal and external environments, embrace data collection and analytical strategies in support of decision making at the institution. This definition serves well to position the role and functioning of institutional research in the evolving higher education environment. ” (p.22)

The Emergence of Institutional Research: 1950s to present.

Peterson (1999) traces the history of institutional research attributing its development in the 1950s and 1960s in the US to the time where student enrolment expanded and government financial support increased, leading to the need for greater accountability of resources. Institutional research was described at that time as being descriptive, mainly contributing to studies in relation to enrolment and placement, and faculty work and space utilization, all of which supported information towards the management of growth and expansion.

The establishment of the Association of Institutional Research in 1960 gave way to the development of a “community of practice” in the US which encouraged professional recognition and development (Taylor et al 2013). Neave (2003) in Taylor et al (2013) noted that institutional research evolved much later in Europe in comparison to the US. In Europe the state exercised more control in higher education including matters of fees, budgets, and admissions etc. In the UK in particular, the function of institutional research became more structured in the 1980s with the interest in performance indicators, public accountability and inter-institutional competition being key issues in higher education.

The changes, challenges and complexities of the last two decades have created significant transformation in the higher education industry. The year 2008 saw the development of internationally based institutional research organisations in Europe, South East Asia, Australia and the UK recognising the importance of institutional research as an expanding practice and

profession. Further, Sursock et al (2010), noted that in the past decade, “higher education has been affected by a number of changes including higher rates of participation, internationalisation, the growing importance of knowledge-led economies and increased global competition ” (p.6). These developments suggest the need for institutional research to take on a more proactive approach in its role as a knowledge industry analyst, where features such as forecasting for planning and budgeting, data collection for ranking purposes and client needs analysis to support marketing and recruitment, now form part of the overall agenda. There is also an obligation for institutions to fulfil the reporting requirements for public accountability and to meet regulations as stipulated in higher education reform. Evidence of this is the Integrated Postsecondary Education Data System (IPEDS) in the US which collects standard core data sets and the Higher Education Statistics Agency in the UK which is the central source for the collection and dissemination of statistics about publicly funded UK higher education.

Theoretical Underpinnings of Institutional Research

I. Terezini's Three Tiers of Organisational Intelligence

Given the evolving nature and varying concepts of the profession, Terezini sought to offer insight into the nature of institutional research in light of “the functions institutional researchers are asked to perform and the tools they use” (Terezini 1999, p.23). He offers a structural approach to understanding the nature of institutional research by likening the practice unto organisational intelligence which he defined according to Fincher (1985) as “a professional, technical speciality with strong resources and capabilities for policy-related research in institutions of higher education” (p.23). Terezini then sought to break down the nature of organisational intelligence into three interconnected components or tiers which he identified as: technical/analytical intelligence, issues intelligence and contextual intelligence.

The first tier, technical/analytical intelligence relates mainly to the information management systems used for data gathering. Here, Terezini distinguishes differences between types of data and information compiled in the practice of institutional research which he deemed to be “factual knowledge or information, and analytical and methodological skills and competencies” (p.23) Terezini (1999). In a practical sense, this refers mainly to “basic building blocks of defining, counting and measuring” (p.183) utilising skills such as data management and familiarity with data coding structures (Dooris et al (2012)), and the use of business intelligence applications.

Terezini's second tier, issues intelligence, consists of contextualising the components of the first tier. This entails harnessing substantive knowledge of the issues relevant to the institution that would give rise to the need for data gathering and information compilation which tier one encompasses. Terezini also emphasises the importance of understanding the functioning and decision making process of the institutions.

Tier three, contextual intelligence, “involves understanding the culture both of higher education in general and of the particular campus where the institutional researcher works” (Terezini 1999, p.23). Volkwein (Volkwein, 2008) articulates that this aspect of organisational intelligence involves knowing the internal and external environment within which that organisation exists. This also involves an in-depth understanding of the historical and cultural nuances that play a pivotal role in the evolution of the institution.

II. Volkwein's Golden Triangle

Using the concept of the Golden Triangle, Volkwein acknowledges that the practice of IR is one that is constantly evolving and may exist in varying forms across an institution. Volkwein's theory arises out of his notion of the common functions of an IR office in the US. Based on several studies done engaging IR offices throughout the US, Volkwein derives three categories of institutional research which are: 1) institutional reporting and administrative policy analysis, 2) strategic planning enrolment and financial management and 3) outcomes assessment, program review, accountability, accreditation, and institutional effectiveness. According to Volkwein, "these constitute the golden triangle of institutional research because they dominate most of the practice of IR in the United States", (Volkwein et al 2012, p. 6).

Institutional Research as a Best Practice

Paul (2009) proposes that best practice can be referred to in various ways. Firstly, it can be defined as "a practice which practitioners know is feasible to implement because they have implemented it" (p.2) but it can also be considered as "a practice which practitioners think probably improves outcomes" (p.2). Considering best practice within the context of institutional research, it is important that particular attention be paid to its core functions. In describing the range of functions of institutional research, Volkwein (1999) in Taylor et al (2013) articulated the following roles; the information authority (data collection and analysis), the policy analyst (using data for the development of professional practices), the "spin doctor" (data collection and presentation for audiences external to the institution), the scholar and researcher (studies that meet the requirements of stringent peer review). Serban (2002) in Howard et al (2012) added the role of knowledge manager (gathering and transforming data into information and knowledge, collaborating in the creation and maintenance of information repositories). These roles and their functioning are varied according to the institution and its organizational framework and where there are different areas of emphasis. Nevertheless, there should be guiding or best practices that serve to optimize the benefits of this function.

In an attempt to identify what might be considered as good or best practice in institutional research, this paper also refers to the work of the Irish Universities Quality Board (IUQB) which proposed guidelines for Good Practice for Institutional Research in Irish Higher Education (2008). Taking account of the various roles/functions of institutional research, the IQUB proposed several guidelines of best practice which are intended to provide indicators that higher education institutions may adopt. These necessary systems, structures, protocols and practices are guidelines used "to transform institutional and other data into good information for decision making, planning, performance monitoring and quality purposes".

Improving Data management for knowledge creation

Traditional institutional research practices usually involved large collections of data which were sourced from student records, human resource systems and financial systems. These were

transactional in nature but did not lend themselves to supporting management decision making in its existing configuration. Much is required in order to ensure that data is defined, accurate timed and interpreted and this relies substantially on producers of data ensuring that data is of quality. Institutional researchers are collectors/coordinators of data and it is therefore imperative that as producers of information they ensure that there is integrity/usefulness of enterprise or external data obtained from data warehousing and enterprise applications which reside with data IT professionals. As good practice, institutional research must therefore be supported by supporting structures and procedures, including institutional data governance for managing and mining enterprise data, business intelligence tools, as well as having the appropriate trained and skilled technical and analytical staff. There must be collaboration with data producers to continuously improve data management to enable the translation of reliable data into meaningful information.

Supporting Management and Strategic Planning

In supporting the process of Strategic Planning, the IQUB report 2008, indicates that best practice entails providing, “comprehensive data and information to achieve a good balance between high ambition and practicality”, in that, data and information widely serves to inform all stages of the planning and budgeting processes. Moreover, best practice serves to guide and manage institutional planning where the provision of data enables the preparation, monitoring and evaluation of development plans, as well as the preparation of progress reports to serve the senior management.

Institutional Research and Quality

Quality assurance and quality improvement processes have become synonymous with institutional quality and effectiveness where higher education institutions aim to distinguish themselves through efficiency in systems and processes, accountability to stakeholders, quality in its products and overall institutional performance. IQUB 2008 recommends that, “the institutional research function can support the completion of quality cycles by analysing and communicating information about progress on the quality of improvement plans that are consequent to all reviews, so that this information can inform institutional planning, resource allocation and decision making”. It is important therefore that institutional researchers advance the process of measuring institutional effectiveness and performance where it is able to identify the appropriate indicators and measures and comparative benchmarks for such.

Methodology

This paper attempts to engage in a reflective case study with a special emphasis being placed in on *Terezini's three tiers of Organisational Intelligence* as well as *Volkwein's Golden Triangle* of institutional research, as a means of reflecting on the processes carried out by COPIR since inception. The use of these theoretical underpinnings proves appropriate as it would facilitate the exploration of contextual conditions which are relevant to the practice of institutional research. Through this exploration COPIR is able to tell its story of how it seeks to construct its own reality in a changing environment where there is a greater need to implement data driven decision making processes. In so doing COPIR offers an experiential perspective of its growth and progress with pioneering a research culture linked to strategic planning while at the same time assessing the extent to which it has been able to fulfil its mandate as a Unit in keeping with

the recommendations of the External Evaluator Report. Additionally, this exploration would allow for COPIR to critically assess its level of growth, the challenges encountered and the way forward in light of international best practices.

A Review of the Campus Office of Planning and Institutional Research

The structure of the Campus Office of Planning and Institutional Research currently exists as a small unit of 5 staff members, 3 of which are professional staff. The Unit was inducted in 2013 under the Office of the Campus Principal and reports directly to the Campus Principal. At present its mission is to support the Campus in advancing its strategic goals and enhancing its administrative decision-making ability by providing a platform of comprehensive information and empirical data to inform campus planning, policy formulation and decision making.

The main functions of the Unit can be classified according to Volkwein's Golden Triangle, functioning within the categories of institutional reporting and planning. However, institutional research functions at the Campus are decentralised as other roles such as quality assurance, program review and effectiveness are carried out by other units spread across the Campus. In its capacity, COPIR functions as the hub of technical/analytical intelligence for the Campus according to Terezini's first tier of organisational intelligence - providing institutional data and information to both internal and external stakeholders. Examples of data that are continuously monitored include enrolment patterns, course performance, student staff ratios, first year retention rates, and graduate outcomes. These data are converted to information in a repository that allows for historical comparison. Such information is critical to processes of institutional management including enrolment management, quality assurance and strategic planning.

Central to the enhancement of the technical/analytical intelligence is the Business Intelligence (BI) system. The system allows data to be integrated from multiple data sources into a central data warehouse system thus enabling COPIR to act as both a knowledge manager and information authority. Using this tool, information is made available to business users through a number of reporting tools accessible via the BI system's website. The BI system caters for two types of users i.e. basic/high level users and power users allowing for interactive dashboards and reports with some basic filtering capabilities. Additionally, the system facilitates centralized access to reliable information with consistent data interpretations and reporting standards, and helps to maintain data integrity across the organization. It also maintains a repository of data definitions and business rules as metadata, which helps with proper knowledge management and retention as the BI system continuously evolves with the organization's growing and changing business needs.

In terms of developing issues intelligence, through the use of Business Intelligence software, other data management tools and statistical software, COPIR is able to produce data to satisfy reporting requirements for example, to the multi ranking agencies for participation in international rankings. In the national context, the BI tool has greatly enhanced COPIR's efficiency in meeting the reporting obligations to its external stakeholders, including the Ministry of Tertiary Education and Skills Training where the normal portfolio of reporting requirements has extended to include reports that not only speak to the Public Sector Investment Programme (a programme for capital projects) and the Biennium Estimate of Needs, but also information to feed into the National Performance Framework, Annual Administrative

Reports, and the Biannual Progress reports. In response, the COPIR as the Unit responsible for reporting, has sought to strengthen efforts to standardize and regularise its data collection of key or essential data sets and to undertake specific and focused studies.

Survey research also plays an integral role in developing this aspect of organisational intelligence. By conducting student experience, incoming student and graduate tracer surveys, COPIR is able to monitor the pulse of the student body and its alumni thereby fulfilling Volkwein's role of researcher and "spin doctor". These undertakings provide specific evidence of observations and trends that relate to graduate output and employability and undergraduate student experiences. In identifying examples of its impact, it is noted for example, that the findings from the Student Experience Surveys uncovered dissatisfaction with academic advising and the handling of student matters. These findings among others led to a review of the process of academic advising and a recommendation for a dedicated process to support the management and resolution of student matters.

The increased need for information has encouraged a greater emphasis within the COPIR to develop and maintain a process for monitoring, documenting and reporting significant achievements in key strategic areas of performance such as Finance, Teaching Learning and Student Development, Research and Outreach. In its support to the processes of strategic and operational planning, COPIR is currently engaged in developing Key Performance Indicators (KPIs) of campus performance for all strategic areas. Additionally, by leveraging on the data gathered for the purpose of technical/analytical intelligence, COPIR is able to provide information as it relates to the analysis of longitudinal trends in student intake and graduation that are frequently used to keep the campus management team informed of the changes occurring within the institution. These data have also played a pivotal role in the decision making processes carried out by the Strategic Enrolment Management Committee. The COPIR also recently led research on faculty workload. The analysis revealed particular gaps in that process with a view to making recommendations for a workload management system and a new principle for calculating faculty workload. Much emphasis has also been placed in the COPIR guiding the strategic and operational planning processes and more particularly the evaluation process which enables Campus Management to obtain a critical evaluation of performance being made at the institutional level. Additionally, a limited number of the studies such as the Demand for Places Report, the Workload Management paper, the Student Experience Surveys and the Graduate Tracer Surveys have been prepared as brief reports for presentation to members of campus management and have provided empirical findings and an analysis of key trends and observations in those areas. It is therefore reasonable to conclude that the COPIR in its varied functional roles will continue to assist in the process of the development of an information management system to guide institutional transformation and quality improvement.

Challenges of COPIR

The extent to which the functions of the COPIR have been able to guide and influence management decision making is a developing one. In as much as COPIR has been able to develop a repository of data to meet the needs of its stakeholders as well as develop relatively sufficient levels of issues intelligence, a closer look at its operations reveal shortcomings that bear upon its ability to address particular issues that are critical in higher education. This speaks to the development of contextual intelligence which Terezini emphasised as being the evidence

of “organisational savy and wisdom” (Terezini 1999, p.25) especially in terms of the changes in the international environment concerning higher education. In attempting to follow best practice it is important for COPIR to strengthen its research capabilities with a view to providing scholastic output and obtaining credence as a thought leader in higher education administration and management. Additionally, the small number of professionals /technical persons in the Unit has limited its ability to undertake the nature of this function. Due to these limitations, the COPIR has not yet reached the stage of maturity of functioning as a policy analyst through the use of its data.

Future Directions of COPIR

While it is important to understand how institutional research has evolved in relation to changes in the societal and economic context in the last fifty years, it is equally important to examine the role that institutional research will play in the future environment. In Calderon and Mathies (2013), it is clearly recognised that the ‘culture of evidence’ being required of higher education institutions, will continue to prevail in response to the increasing need for accountability to external stakeholders, in an environment where resources are scarce and where returns on investment made, must indeed be demonstrated. The budget holders for public funding in particular, request data and information which we relate to efficiency in resource use, output and productivity.

Calderon and Mathies (2013) also propose that the future of the higher education environment will require higher education leaders to be more informed in effective planning and decision making. Additionally, it is suggested that the demands for information will be extended to central administration. This is usual as internal stakeholder Units routinely request data for varying purposes, including quality assurance reviews, assessment, satisfaction surveys etc. There is however an increasing trend in institutional research offices to provide pre-defined data in self-service format which enables users to obtain access to data which is routinely requested. Similarly, the introduction of the recently developed Business Intelligence system at the St. Augustine Campus, is the foundation to creating a reliable information system that will provide independent access to high level users of the campus to extract data reports that serve their individual purposes. This new business process will strengthen the management and flow of information to the constituents and enable COPIR to direct its focus and resources to analytical studies which report on institutional performance and interpretations of specific trends in higher education, as well as undertaking forecasting and strategic planning functions

In an environment of competition, an institution can distinguish itself from others in the industry by its quality. In keeping with the thrust in institutional quality reform globally, The UWI St. Augustine has been a leader in becoming the first nationally accredited institution by ACTT and will seek re-accreditation in 2017. The exercise will depend significantly, on empirical evidence to demonstrate progress and re-design of processes and practices to highlight quality improvement. In the process of the campus seeking re-accreditation, the COPIR in particular will lend itself to being an enabling mechanism for information gathering and review and has especially been requested to develop a series of indicators for benchmarking the campus with comparable institutions.

Conclusion

Institutional research as a practice has evolved significantly in response to changes as far as it had implications for supporting organizational change and institutional management. It is clear that the traditional role of institutional research has adapted to the new environment of the higher education. Practitioners of institutional research have gone beyond being simply recognised as the authorities for the collection and analysis of data for information generation to that of analysts and forecasters. Volkwein (2008) has suggested that significant change in societies and economies which have been stimulated by the knowledge industry, has seen higher education institutions becoming more client and learner – centred, and that this combined with new styles of managerialism, demands for accountability and performance assessment and evaluation has effected a change in the role of institutional research towards one that is more analytical and evaluative. In this light COPIR is working towards becoming the leader in the effort to develop institutional research as a practice in the higher education sector in the Caribbean. As such, its role and function is modelled against international best practices thus recognising the shift towards knowledge-led analysis.

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