

A framework for building research capacity through leadership development, institutional building, and research practice

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Abstract

This study examines the research landscape of the Royal University of Bhutan (RUB) between 2014 and 2016. The institute for Gross National Happiness Studies which is a virtual research think-tank of the RUB won a competitive grant from the Global Development Network in 2014. The objective of the grant programme was to strengthen institutional capacities of higher education institutions in Least Developed Countries to design, run and evaluate quality research training opportunities. For two years (2014-2016), series of research development interventions were implemented in four pronged approaches: enhance the capacity of research leadership, develop faculty research, engage students in research, and institutionalise research centres in the colleges of the RUB. Exploratory concurrent mixed method design (Creswell & Creswell, 2018) was applied to evaluate and explore growth, change, and development of research within the timeframe between 2014 and 2016. It is noted that there have been modest achievements in research both in terms of number as well as the intrinsic value it created, establishing a culture of research, and research enthusiasm among faculties as well as students in the colleges of the RUB. The findings show significant achievement in knowledge generation, as well as in policy changes at organisational, institutional, as well as the systemic level in the RUB. This framework could be followed by universities who wish to promote research culture from the base.

Keywords: Research culture, research capacity, research leadership, research centre, policy research

Introduction

A measure of the greatness of a nation is its higher education system which leads to positive will, faith, intelligence and moral force (The Royal University of Bhutan [RUB], 2013; Stankevics, 2015). Accordingly, RUB was established in June 2003, the only university then, in order to consolidate the provision of tertiary education in the country and to efficiently cater to the needs of the nation. Research features as one of the three pillars of RUB's mandate, along with teaching and community services (RUB, 2015; 2018; Tobden, 2020). To reiterate the research mandate and to enable the strategic development of research in the University, the Department of Research and External Relations (DRER) was established in 2005. The Deans of Research and Industrial Linkages (DRILs) were appointed in all the Colleges to carry out the responsibility of research and development. In 2013, the university founded the institute for Gross National Happiness Studies (iGNHaS), a research think-tank mandated to promote research activities, in particular policy relevant research, across RUB's eight colleges, and advance the university's mandate as the prime higher education institution in the country (RUB, 2013). The iGNHaS enjoys a privileged position within RUB, but also serves in many occasions as the interface between the university and governmental, political, media, and community services, in Bhutan and abroad.

RUB has eight constituent colleges (initially 10) spread across the country. These colleges were teaching colleges without any research mandate (Sherab & Greenwood, 2014). According to Sherab and Greenwood (2014, p. 26), "each of the colleges had their own identity and culture and now they are being asked to blend those cultures into the greater culture of RUB." This means that RUB colleges initiate and enhance their research culture not just to enhance teaching and learning processes (Colbeck, 1998; Elen, et al., 2007) but also to inform policymakers (Sherab & Schuelka, 2019) and contribute in Bhutan's development process. Today, one of the indicators of a quality university is its robust research output. However, existing literature cautions that the new universities and colleges experience the inevitable challenge of raising the research culture (Marginson &

Considine, 2000; Pratt, et al., 1999). RUB has been no exception to this as there have been issues related to leadership, research-material, research training, and research funds (Sherab & Schuelka, 2019). Leadership (Pratt, et al., 1999) and training and support (Hanover Research, 2014) in terms of capacity building and funding plays a paramount role in promoting research culture. However, both leadership and training have been identified as issues in the context of RUB (Sherab & Schuelka, 2019). While these issues still exist, there has been some improvement in terms of research culture and productivity due to various efforts put in by the RUB. This paper intends to examine the outcome of an international research grant implemented by the RUB.

In November 2014, iGNHaS, received a grant of US\$ 124,791 (Nu.7,734,072) from the Global Development Network (GDN). The goals of the grant received by iGNHaS were to support the development of research at RUB addressing in a coordinated way some of the institutional challenges. This project titled, 'Improving the Quality of Policy Relevant Research in Bhutan through Leadership development, Institutional Building, and Research Practice (programme),' has been highly instrumental in developing the capacity of research in the RUB. The approach, methodology, and delivery were well addressed and therefore achieved various intended as well as the unintended results. The project addressed through the four-pronged approaches were; capacity development of research leadership in the colleges, development of research centres in the colleges, capacity development of faculties, and student engagement in research.

Literature Review

Research is vital for innovation, economic benefits, and social development (Midwives, 2019; OECD, 1996; Yusuf & Nabeshima, 2007), for evidence-based policy (Benton, et al., 2020), and for social work practice (Erby, 2017). Research is one of the core functions of a University (Brennan & Teichler, 2008). The Royal Charter (2003; as cited in the RUB's Wheel of Academic Law, 2017) mandates the University to promote and conduct research, and to contribute to the creation of knowledge of relevance to Bhutan. Research is also a fundamental aspect of policy

formulation and decision-making, enhancing Bhutan's access to tertiary education programmes, and creating a knowledge-based society. The University's continued endeavour in research and development should be viewed as an opportunity for developing itself as a think-tank in the country that can contribute meaningfully to policy-making processes at various levels through research, scholarly activities, and other academic engagements. The University also aims to enhance innovation through enhancing research, which will benefit the society both socially and also economically in terms of producing various new technologies and prototypes, processes, pedagogies, and paradigms.

However, research development in the university faces a number of challenges (RUB, 2013), the most prominent challenge being the lack of infrastructure to support research (Choeden & Maxwell, 2012). Research infrastructure includes research policy, research fund, research labs, research coordination and collaboration, and research database (Ribes, 2014). In addition, several other challenges such as leadership, research skills and knowledge, and research funds were identified more recently (Gyamtsho, et al., 2020; Sherab & Schuelka, 2019). Despite the uniqueness of Bhutan's context, many of these challenges faced by RUB are common to other higher education institutions in South Asia (Chatterjee, 2002) and also Internationally (Marginson & Considine, 2000; Pratt, et al., 1999). The common challenge faced by the South Asian nations on social science research is the lack of funding, and level of independence of researchers from the management (Hay & Sudarshan, 2010). The challenges faced by RUB are the low level research capacity in the colleges, lack of an enabling research environment, lack of research and scholarly publications by the faculty, lack of faculty knowledge and ability for securing competitive research grants, lack of leadership support; lack of research funds (Resolution of the first annual conference of the DRILs, 2014; Gyamtsho, et al., 2020; Sherab & Schuelka, 2019). Some of these challenges are internal, such as the lack of research policy, research leadership and management, outreach resources and experience, funding mechanisms and incentives, in particular for young lecturers to do research, and an emphasis on teaching and learning. Some are external, such as

the lack of funding, low demand for research by decision makers, regulators, media and other societal actors. Some are a combination of both internal and external factors, such as the lack of a research culture in Bhutan's young higher education system, lack of structured communication channels between higher education institutions and other societal actors (Resolutions of the second annual conference of the DRILs, 2015). Some of the challenges cited in the RUB Strategic Plan (2013 and 2018) are lack of research funding for faculties as well as students; low quality of research proposals for international grants; research papers do not meet the expected publication standards; low level of research culture; and lack of support for research grants from industries. According to Pratt, et al. (1999), leadership plays a paramount role in promoting research culture. Interestingly leadership has been identified as an issue in the context of RUB (Sherab & Schuelka, 2019). Training and support in terms of capacity building and funding has been another crucial aspect of research culture (Hanover Research, 2014).

To address these challenges, iGNHaS developed the research capacity building framework, and presented to its board meeting in early 2014. The framework was also presented to the Research and Innovation committee (RIC) of RUB and shared widely with the DRILs of the colleges for feedback. The framework that won the GDN competitive grant is discussed in the following section.

Research Capacity Building Project Implementation Framework

Building on the research infrastructure established by RUB, the research capacity building project was implemented to support research activities in the colleges, through the following goals, as detailed out in Table 1 below:

Table 1: Research capacity building framework developed by iGNHaS (2014)

Goals	Output
Goal 1: Developed strong research leadership in the eight colleges of the RUB	1.1: Effective research deans who will promote quality research in the colleges 1.2: Strengthening the institutions and infrastructure of research in the colleges
Goal 2: Build Research Centres of Excellence, actively engaged in promoting research and community linkages	2.1: As centres of excellence, provide effective coordination of research activities 2.2: Provide the platform for the development of resources and trainings
Goal 3: Enhance the knowledge and capacity of Academic staff to engage in independent research and supervision of student research in the RUB Colleges	3.1: Increase the quality of research instruction, thereby inspiring and improving the quality of teaching 3.2: Generate a culture of research and enquiry in the colleges of the RUB 3.3: Contribute to the decision making at the national and local level through policy-relevant research by the academic staff
Goal 4: Instill a culture of discourse, critical enquiry, and practical solutions in undergraduate and post graduate students in all colleges of RUB	4.1: Develop a framework for the support of student research 4.2: Link classroom knowledge of research with practical applications

As listed above, this project comprises of four separate interventions implemented concurrently over the course of two years.

1) Training of faculty: Series of interventions that build on one another, that weaves well to enhance research competencies were implemented. First, RUB runs its

Annual University Research Grant (AURG), for faculties to compete for funding. Second, the entire grant applicants were invited to a five-day workshop to help strengthen their concept notes. The training included topics such as research methodology, information retrieval and the new RUB research policies. Third, the concept notes were then developed into full proposals under the guidance and mentorship of designated resource persons. The resource persons were drawn from established researchers from Bhutan and primarily other Asian universities. Fourth, the full research proposals were presented at a second workshop together with the resource persons present. At the end of the workshop, the AURG committee made the final research funding decisions. The successful researchers were paired with external or local experts to mentor them throughout the project. During a university breaks, a longer training session (1 to 3 weeks) were conducted for the grantees in research theory and practice tailored to their research projects. Topics such as statistics and statistical software, cost/benefit analysis, GIS tools, interview and survey techniques, discourse analysis, and research communication were presented and discussed. Fifth, the grantees presented their findings to the third workshop and discussed possible policy implications in the presence of their mentors, other grantees and relevant stakeholders, including government, private sector and civil society. Selected projects were then developed into research articles and the authors were assisted in publishing their research in iGNHaS' peer-reviewed Bhutan Journal of Research and Development (BJRD) and quality peer-reviewed international journals. All these workshops were held under the avenue of the Faculty Research Meet (FRM). This cycle repeats annually.

2) Training of DRILs: DRILs generally lacked research leadership experience. To address this, visits to policy-focused centres of excellence in research, primarily in Asia was prioritised. The objective was to shadow and learn the best practice from the research leaders who are innovators in their field. This includes institution-building, human resource development, and seeking and executing externally funded research projects. Upon the return from the visits, they were required to design the strategic plan for the respective research centres in the colleges. The strategic plan encompassed visioning and strategic planning for research centre;

developing research partnerships and networks; explore research grants; mentorship for young researchers and creating incentives for research; and research disseminations and advocacy plans. The exercise took place in several stages, including consultation with relevant stakeholders and staff in the colleges for wider inclusion and ownership.

3) Institutional development of research centres in the colleges: The centre strategic plan which the DRILs developed following their institutional visits and planning exercises in objective 2 above, are anchored in the respective college plans. Ultimately, the research plan becomes the legitimate benchmarks for the assessment of research centre performance to be conducted by the university as per ZHIB 'TSHOL – RUB Research policy. The iGNHaS conducts the annual review of research centres' progress on their action plans, provides financial and technical support and oversight throughout the process, and suggest improvements and solutions where necessary.

4) Creation of a culture of research and inquiry among the undergraduate and post graduate students in all colleges: DRILs, Research Officers and senior faculties with research expertise designed a non-credited research module that will inspire the students to engage in research. The module includes research methods, the RUB research policies as well as the practical application of research to everyday issues and policymaking. The module was delivered through workshops, action research and field studies. The module was designed as per the focus areas of study of the respective colleges.

Currently, the overall state of research in the RUB as well as at some member colleges have been published by a few scholars. However, there is lack of research that specifically looked at the contribution of the GDN International research grant on RUB research culture and its research productivity. Therefore, this study specifically examined how GDN research grant has been instrumental in enhancing the RUB research culture.

Methodology

Exploratory concurrent mixed method design was applied for this study (Cooksey & McDonald, 2011). The mixed methods research which is the integration of qualitative and quantitative data yields additional insight beyond the information provided by either the qualitative or quantitative data alone (Creswell & Creswell, 2018). Further, the purpose of this assessment study was to gather and analyse both quantitative and qualitative data on growth, change and development of research capacity in all of the four objectives of the GDN project over time (Lavrakas, 2008).

Four periodic reports including the financial utilisation statements (FUS) were submitted to GDN during the implementation period. These reports were reviewed both by the team members, the project scientific mentor, and GDN. These reporting ensured the quality of reports from the very beginning. In addition, the on-going progress reports were presented at the mid-term review exercise in Hanoi, Vietnam in January 2016; South Asian Network of Economic Institutions (SANEI) summit in Kathmandu, Nepal, in November, 2016; at the GDN annual General Conference held in Lima, Peru in July, 2016; and to every annual conference of the DRILs in Bhutan. These presentation and discussions provided an opportunity for review and validation for further development and also for other nations to simulate the programme to their institutions.

Data were collected every six months between November 2014 and December 2016 from all the colleges. The final consolidated data for the entire duration of the project was collected in December 2016 on which this report is being constructed. For the quantitative data, survey questionnaires were distributed to the DRILs of all the eight colleges to provide numeric description of growth on each of the indicators of research. The questionnaire consists of four sections emerging from the four objectives of the project. Each section carried five to ten questions, which were further separated into annual data starting 2013 (prior to GDN project implementation) up to 2016 (covering the two years of project cycle). For the qualitative data, in-depth interviews (to explore individual

experiences and perceptions in rich details) were held with the DRILs as well as with a few Presidents and Research Officers of the eight colleges to provide trends, development, attitudes or opinions. The questions were semi-structured open-ended, non-directive, and probing. The themes were drawn as per the four objectives of the project, and the data that emerged from the interview transcripts were coded in accordance with the pre-determined themes.

Furthermore, a short video was produced with the help of GDN team upon the completion of the project in June 2017 titled, 'Research is Development- Testimonies from the Royal University of Bhutan' (video is available at <https://www.youtube.com/watch?v=1mWfEgoTbbo>) to gather data on the impact of GDN project. For this video, a total of 14 individuals (Director General, Department of Research and External Relations- 1; College Presidents- 2, Deans- 2, Faculty- 2, Research Officer- 1, GDN Project Manager- 1; and students- 5) provided their perceptions about the project. The next section provides results and discussion.

Results and discussion

The results and discussion in this section are presented in terms of the four GDN project objectives as themes. Quantitative data were analysed using simple frequency counts to show the trends of the impact of GDN project. All qualitative data were categorised into themes based on the four project objectives. For ethical reasons, respondents who provided qualitative data are acknowledged in the presentation of results as follows: Director of Research as DoR; College Presidents as CP 1, 2...& 8; Deans as D1, 2...& 8; Faculty as F1 and F2; Project Manager as PM; Students as S1, 2...& 5).

Objective 1 - Training of faculty

Training of faculty through hands-on mentoring and support for the development and execution of small research projects was targeted to build the research capacity of the faculties. As a result of these workshops, trainings and mentoring

programmes implemented through the Faculty Research Meets (FRMS), the results are impressive, as shown in Figure 1.

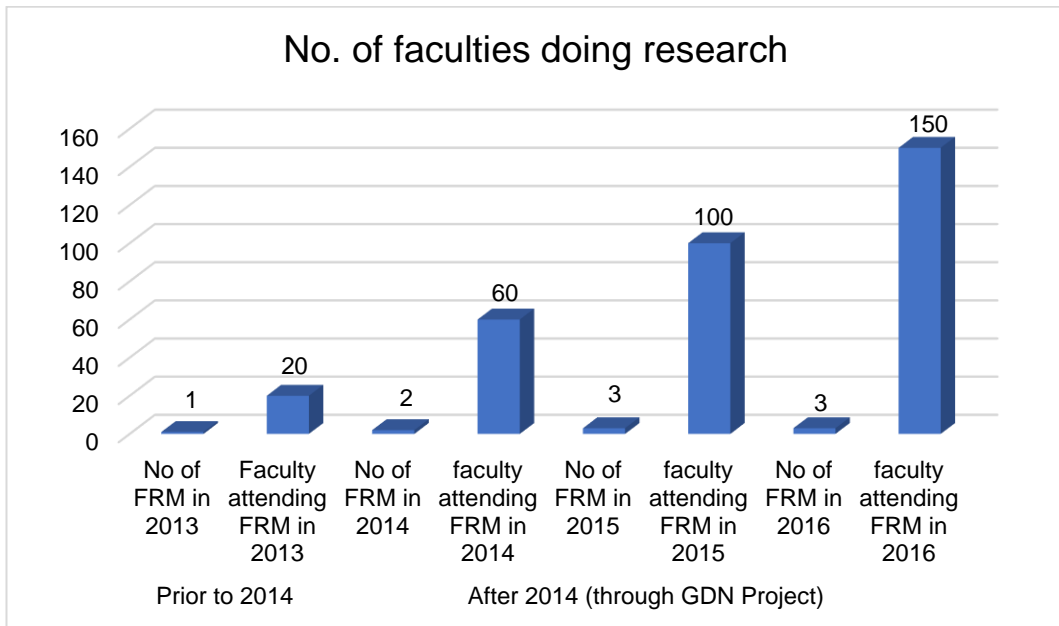


Figure 1. No of faculties engaged in research as per the data received from the colleges.

The number of faculties who attended research forum increased by seven and half times between 2013 and 2016. While there were only 20 faculties who attended the research forum in 2013, the number increased to 150 in 2016. The qualitative data shows that the interventions from the project created an opportunity for the young and novice faculties the skills and confidence to engage in research. The colleges institutionalised the college level faculty research meets; mentorship programmes within colleges; monthly seminar series, and conducted series of trainings on research methods and tools (Final Project Report, 2016), which greatly helped to create research culture and research environment in the college campuses (P1). This has significantly improved faculty engagement in research from almost nil to about 50% faculty engagement and publication both in terms of number and quality (Final Project Report, 2016). For some faculty the very basics such as proposal writing was useful (L1). Another significant achievement

of this project was the enhancement of the ability of the faculty to not only enhance their research knowledge and skills but also to network with academics from other nations. As a result of this, many faculties from different colleges have been able to secure International grants which includes grants from Erasmus+, ESRC (Economic & Social Research Council of UK), British Academy Award, AAF (Australian Awards Fellowship), and Toyota Foundation Award (Japan) (Final Project Report, 2016). This finding corroborates with the existing literature that training and support play a significant role in enhancing research culture (Hanover, 2014). There has been also evidence of different organisations such as the Ministry of Education, Royal Education Council, UNICEF, and UNFPA Bhutan gaining more confidence in RUB research capability as these organisations have started awarding research consultancies to the research centres (PM; Dean 1, 2, 3, 4 &5; RO 1).

Objective 2 - Training of DRILs

Training of college Deans of Research through visits to centres of excellence in research, primarily in Asia, was to build the leadership capacity of the DRILs. The activities included the institutionalisation of Annual Workshop of the Deans and visits to the regional centres of excellence. As a part of this project objective, all DRILs, a few college Presidents and Research Officers from the existing research centres had the opportunity to visit Kyoto University in Japan and TERI University in India (PM, Dean 1). During both these visits, the team visited various centres of excellence to learn best practices about research and innovation. As a result of these interventions, within two years of project implementation (2014-16), there were a total of 34 research collaborations (both national and International) established by the colleges (see Figure 2).

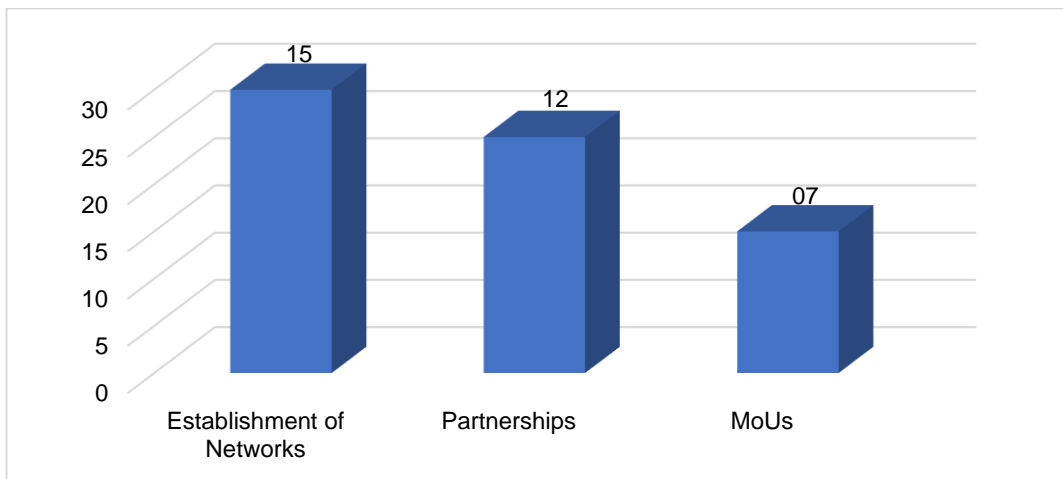


Figure 2. Establishment of research collaborations as per the data received from colleges

Qualitative data revealed that the institution of annual conference of the research deans enabled them to understand internal issues, challenges and opportunities in research (all the eight Deans, as cited in the GDN final project report 2016). The visit to the centres of excellence equipped the deans to develop collaboration, networking and research partnership projects. In addition, the deans gained substantial knowledge and understanding of research leadership, research centre development and management (including policies), mobilisation and management of research funds, development of research partnerships, development of research grants, balancing teaching and research, development of research programmes, and building networks and collaborations (All Deans). The findings suggest that international grants and networks shared above and the enhancement of research activity and publication by the faculty shared under the next objective are the results of the deans' successful leadership in different colleges. This confirms the earlier findings that the leadership plays a crucial role in promoting research culture (Pratt, et al., 1999; Gyamtsho et al., 2020). Some college Presidents have the perceptions that a university cannot survive without research and publication (P1). However, this may not be uniform across all eight colleges as recent research found some colleges to be less successful as well as less support from college

leadership (Gyamtscho et al., 2020; Sherab & Schuelka, 2019). This is something that must be explored in the future.

Objective 3 - Institutional development of research centres in the colleges

As a result of the creation, development and institutionalisation of research centres, the following impacts were created, as illustrated in Figures 3 and 4.

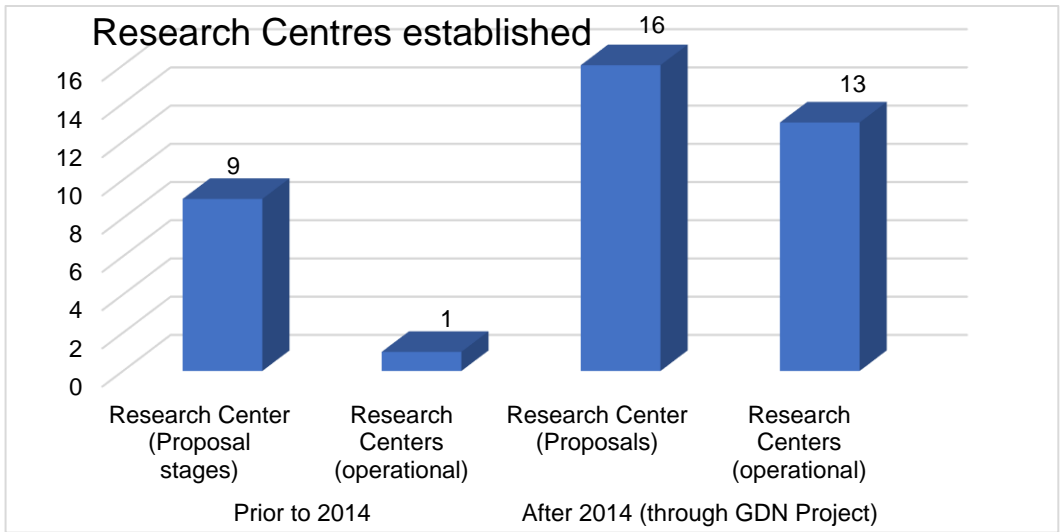


Figure 3. No. of research centres established

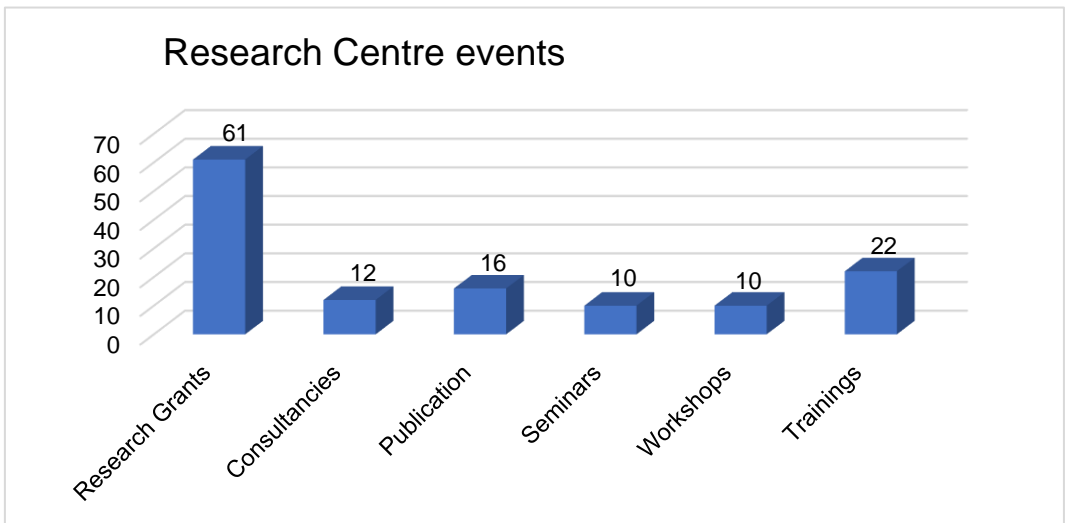


Figure 4. Research centre events as per data received from colleges

There was only one operational research centre in 2013. The number of research centres in operation increased to 13, and another 16 were proposed by 2016. The research events organised by the research centres increased to 131. The research centres embarked into industry consultancies and received numerous research grants (see Figure 4). Qualitative data revealed that the visioning exercise for the creation of research centres, and implementation of action points derived from the DRILs' visit to centres of excellence, and the renewed rigour of the research leadership exhibits of the DRILs enabled the establishment of several research centres in the colleges. Research centres play the key role in providing a platform for faculties to engage in research, and an avenue for national and international partnership programmes. As shown in Figure 4 above, the research centres have started publishing journal articles, hosting national and international seminars, and conducting research trainings for both their faculty and students (All Deans). Prior to the GDN project, there were only two research journals published but today there are seven journals that different research centres publish on a regular basis (Final Project Report, 2016). This has provided opportunities to not only for the RUB faculty but also to other national and International scholars to publish their research works (Dean 8). All the journals initiated during the project still publish and at least two new journals have been added to the list recently.

Objective 4 - Student engagement in Research

As a result of the design and development of non-credited research module and teaching of research to students, the impacts were impressive. There were no student research trainings conducted in any of the eight colleges in 2013, 2014, and 2015. The research training module was developed in 2014–2015 and implemented only in 2016. This module mainly focused on providing students additional knowledge and skills which were mainly hands-on to supplement their learning from the formal credited research module (S1 & S3). A total of 16 research trainings were provided for the students across eight colleges (Final Project Report, 2016). Hundreds of students participated in these trainings. Some colleges

have established student research committee to support student research (D1). Findings from the qualitative data shows that students' interest and enthusiasm for research increased, as many students enrolled for the research optional modules offered by different colleges (S1, 2, 3, & 4, 2017). Some students even embarked on designing interactive application for school students to learn Dzongkha (S1 & S2). As a result of the project support, students performed better in their credited research module courses (Dean 8 & S4)). Research should be part and parcel of any learning activity (P2). This is an indication that some college Presidents are supportive of research activities in their campuses. Furthermore, there has been an increasing trend of students applying for research internship/research assistants, and research funding to carry out their independent research during the semester breaks (PM).

Conclusion and recommendation

The fund received by iGNHaS to improve the Quality of Policy Relevant Research in Bhutan through Leadership Development, Institution Building, and Research Practice, has met its objectives and desired outcomes beyond the expected figures. The GDN grant has enabled iGNHaS, and the colleges of the RUB to address its critical and immediate challenges, ultimately building its long-term research development trajectory. The colleges successfully achieved its indicators on all the intended objectives. Tremendous amount of knowledge has been generated through acquisition of research projects, aggressive mentorship for beginning researchers, scientific publications, and developing a pool of research experts.

At the institutional level, the colleges increased its internal funding for research, instituted college Faculty Research Meets, built capacity to host national and international conferences, seminars and research events, and published college level research journals. All these have resulted to increase in the capacity of the faculty to publish not only in the national journals but also in the international journals. At the systemic level, partnerships and networks were established both nationally and internationally, decision makers approaching the colleges for

research partnership projects has emerged, there has been a growing interest of the policy makers searching for data and evidence from the colleges, and media visibility of the research by engaging in talk series by faculties featuring in the national television is increasing. Today, there is evidence to show that some faculty members have even achieved a ResearchGate score of more than 14 and a Google Scholar h-index of 6. It takes a significant amount of research publication and citations to achieve such scores. While this may not be completely attributable to the GDN project it definitely is an indication of the impact of GDN project. Therefore, it is clearly arguable that this model could be adopted by universities in countries which have similar socio-economic development trajectories to Bhutan. Two years of project implementation cycle was instrumental in developing the research culture in the RUB that is likely to bring in long-term impact. For instance, there have been a greater number of faculty securing International grants (such as Erasmus+ and ESRC) over the last few years. There are also faculties appointed as manuscript reviewers (both national and International journals) and external examiners for the PhD theses by the universities in countries like Australia and India.

However, in spite of all these developments, there are still areas where further interventions are required. College level leadership support, more faculty involvement in quality research and publication, securing international grants would play a crucial role in RUB's emergence as a high-quality university in the region and beyond. Funding is still a problem for RUB (P1 & L2). More specifically, capacity development in Higher Degree Research Supervision training is a new area, as RUB is introducing Master's by research degrees and PhD programmes.

Research has increasingly become central beyond the RUB. There seems to be a gap in terms of dialogue between academic institutions and government institutions. The iGNHaS, RUB should work towards bridging this gap such that this will enhance research and innovation to create a knowledge driven society. The higher education institutions should act as the catalyst of the knowledge driven society and deliver as the social equaliser through evidence-based decision-

making, and interventions. The universities should be prepared to better pitch its intellectual reference in the society, as to turn the challenges into opportunities.

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