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# Value-Adding Interdepartmental Multi-Institutional Mass Entrepreneuring

<sup>1</sup>S.M. Seeletse, <sup>2</sup>J.P. Sepeng, <sup>3</sup>T.A. Dandadzi, <sup>4</sup>P.H. King, <sup>5</sup>J.L. Thabane, <sup>6</sup>M.T. Mase Tshaba, <sup>1</sup>G.R. Miyambu, <sup>1</sup>M.M. Lekganyane, <sup>1</sup>E.L. Sesale, <sup>1</sup>Ramarumo and <sup>1</sup>K.D. Tshabalala <sup>1</sup>Department of Statistics and Operations Research, Sefako Makgatho Health Sciences University, Ga-Rankuwa Township, <sup>1</sup> Molotlegi Street, Pretoria, Gauteng Province, South Africa <sup>2</sup>Department of Teacher Education, University of Free State, Bloemfontein, Free State Province, South Africa

<sup>3</sup>Department of Computer Science, <sup>4</sup>Department of Biology,

<sup>5</sup>Department of Mathematics and Applied Mathematics, Sefako Makgatho Health Sciences University, Ga-Rankuwa Township,1 Molotlegi Street, Pretoria, Gauteng Province, South Africa <sup>6</sup>Department of Decision Sciences, University of South Africa, Muckleneuck Campus, Pretoria, Gauteng Province, South Africa

Abstract: Collaboration was initiated between the School of Teacher Education and Training (STET) of the North-West University and Department of Statistics and Operations Research (DSOR) of the Sefako Makgatho Health Sciences University, in two provinces of South Africa. Objectives were set for the envisaged relationship. A seminar was then held on Friday, 10 March, 2017, between these two groups with the Department of Computer Science leadership also in attendance. Amongst those who were invited to the seminar were the Acting Dean of the School of Science and Technology (SST), the Director of STET as well as the DSOR doctoral candidate on campus. The theme and focus of this collaboration between the two institutions were influenced and guided by critical discussions on the following: crowd sourcing, entrepreneurship, innovation, leadership, management, risk taking, social responsibility, synergy, teamwork and value engineering were concepts that emerged from the deliberations and/or were implied and realised. A combination of both desktop literature study and analyses of conversations emerging from the seminar yielded a joint manuscript. It is against this background that this article seeks to present an overview of the envisaged benefits of such an initiative and propose guidelines for improved performance within an academic context (s).

Key words: Added value, innovation, mass entrepreneurship, teamwork, performance

## INTRODUCTION

In these modern times, universities in South Africa employ academics for three thrusts, teaching and learning, research and community engagement (Davidowitz and Schreiber, 2008; SAQA., 2000; Vambe, 2005). Many others require academics to be collegial which means to participate in collaborations and teams with colleagues, to partner for adding value to self and others, transfer skills to others and learn new skills as well, among others. Still more, academics have to participate in committees for different tasks and also for policy development and review. Out of these, management emphasises research as it assists in generating money for the universities in subsidies that are received due to research outputs such as publications recognised/accredited journals and authoring and co-authoring book chapters and books. Proactive higher learning institutions provide financial and other

support for their academics to participate and improve research. However, the problem of research scarcity is widespread in South African higher education. This idea is confirmed by Mouton (2006) when insinuating that most South African universities still underperform in research. Doctoral degree productions are scarce and in some instances graduating doctoral candidates lack research output. Some holders of doctoral degrees do not do research and cannot even demonstrate its worth as 'doctors of philosophy' degree holders. Some arguments are that this was caused by historical developments and lack of resourcing (Waal, 2004). This study emphasises that a lack of innovation is a weighty source of this problem. A holder of the title 'Dr' should be able to innovate and find solutions to conduct research. The milestones leading to achieving any quality doctoral degree, if conducted properly should equip the 'graduate' with skill and knowledge to find solutions to embark in

research. Many alternatives exist and for doctoral degree holdersin Institutions of Higher Learning (IHLs) there should generally be no excuse for not doing some research.

Researcher of this study are aware that in the ancient times in the history of South African education, IHLs were focusing mainly on teaching. These IHLs were using Foreign study materials to teach local students (Oberholzer, 2007). Research was not emphasised and in some institutionsresearch was not done. In the 1980s, there was a circumstantial categorisation of South African IHLs into research and teaching IHLs. The former were doing both teaching and research and the latter were known for only dealing with teaching and learning. The evolution of education and globalisation pulled the system to transform some IHLs towards undertaking research. The more resourced IHLs managed to embark on research due to their collaborations with more advanced ones, mostly at the international level. The less developed, less experienced IHLs advanced by networking with the leading ones. This approach shows to work even when newly established IHLsare placed under existing ones for a few years before they can be given full status to offer their own degrees. Another area where this approach works is at school level. There, experts from IHLs support school teachers in the areas where the school show weaknesses. The relations can be imposed from level of government. However, many initiatives seem to work well when started by the role players. The role players-initiate approach is easier because the formulation of objectives is usually an easy task. Some of these initiatives are driven by already existing objectives.

The study reflects on the value and aspects involved in entrepreneurial initiative taken by divisions from two South African universities involving two varied divisions offering three different disciplines. The participants differed widely in terms of age, experiences, gender, personalities, race and ranks, among others. The aim is to pinpoint at the gaps closed in each division, individual benefits to the members and for the individual delegates involved.

# Literature review

Entrepreneurship: Entrepreneurship refers to the innovative process of establishing a business, a startup enterprise by an industrialist known as the entrepreneur (Hisrich, 2011). In enhancing the success of the business and its operations, the entrepreneur develops a business plan for the enterprise, employs proper staff and acquiresvital equipment and resources. The origin of entrepreneurship was to make profit. However, recently, Halloran (2014) states that entrepreneurship has been made comprehensive by embracing social development. Deakins and Freel (2012) describe entrepreneurs as leaders prepared to take risk and exercise initiative, exploit market opportunities by planning, organising and

engaging resources. Some entrepreneurs practice by purely innovating new products while others improve existing ones. Reynolds (2007) observed that it is a major driver of economic growth in the United States, Western Europe, China and India, among others. Essential qualities for the entrepreneurs are team-building, leadership and management ability.

**Leadership:** Leadership is a skill encompassing the ability to guide (Trevisani, 2016). It is basically a process of social influence by soliciting the inspiration and assistance of others to achieve a common undertaking. In this study, it refers to a range of macro-level, micro-level and project leadership (Scouller, 2011). Macro-leadership refers to higher abilities in managing the overall picture, micro-leadership meanshigher abilities in specialised tasks and project leadership refers to higher ability in managing the execution of a task.

Management ability: Management is the administration of an organisation (Gomez-Mejia et al., 2008). Its activities include setting the strategy of an organisation and coordinating the efforts of its employees to accomplish its objectives by involving available resources (e.g., financial, natural, technological and human resources). Holmes (2012) explains that there are generally three levels of managers in a pyramid structure, namely, senior management, middle management and lower management. Senior managers set the strategic goals of the organization and make decisions on how the overall organization should operate. They provide direction for the middle managers who report to them. Middle managers provide direction for lower managers. These managers communicate the strategic goals of senior management to the front-line managers. Lower managers oversee the work of regular employees and provide direction on their work. Aguinis and Edwards (2014) enlighten that in small organisations, manager's roles have much wider spaces. A manager can perform several roles or even all of the roles commonly performed by several people in a large organization.

**Risk taking:** Riskrefers to the prospectof acquiring or losing something of value (Antunes and Gonzalez, 2015). Treasuredvaluables can be gained or lost when taking risk due to a given action or inaction, foreknown or unforeseen. Cline (2015) definesrisk as the calculated interaction with uncertainty where uncertainty refers to a potential, unpredictable and uncontrollable outcome. Astute managers approach risk through calculated interaction in undertaking their tasks to manage businesses successfully.

**Team building:** Team buildingrefers to activities used to enhance social relations and to define roles within teams, often involving collaborative tasks (Rovio *et al.*, 2010). It

is a commonly applied group development activity to develop organisations. It may be used in team training which is designed to improve the efficiency, rather than interpersonal relations. Team-building is a base of organisational development that is applicable to teams. Its benefits include synergy which is a heightened benefit that cannot be realised when participants are separated. Furthermore, team-building drills address interpersonal problems within the group. Its activities are used to improve performance of teams (Arrey, 2014).

**Interdepartmental:** Some departments have a natural link. Cases include mathematics with statistics; computer science with mathematics and statistics with computer science, among others. In academia, every department links directly with teaching and thus with a teaching department. Areas of synergy exist in interactions of members from these departments. As a result, research prospects exist in academics from these departments. Such interactions should be encouraged.

Multi-institutional: Al-Balhan (2006) counsels on the use of manifold intelligence styles to improve academic performance. This is particularly relevant in South African setting in which the academic IHLS share common goals of teaching, research and community service. Competition of IHLS can enhance higher productivity. However, where resources lack, there can be deficiencies in performance and quality reduction. Working together, on the other hand, can enable both research completion and creation of synergies.

Crowdsourcing: The termcrowdsourcing refers to a sensible development of getting a crowd, made of a group of people to partner byfinding needed services, ideas or content by promoting contributions (Estelles-Arolas et al., 2012). Each crowd member should be willing to participate in activities assigned to them. Inputs will be combined to form the desired solution. Several notable crowd sourcing benefits are cost saving, diversity, empowerment, flexibility, innovation, quality, problem solving, profits, scalability and speed (Brabham, 2013). With innovation, crowd sourcing initiatives enable institutions and organizations to perform beyond individual employee's capabilities. This relates to the concept of synergy (to be discussed later in section 1.4.3). Both intrinsic and extrinsic drives influence decisions to participate in crowd sourcing. Crowd sourcing is used to involve many people to work towards a common goal such as attention, efficiency, fun, increased quality, innovation, knowledge, money, networking, philanthropy, problem solving and reputation, among others (Prpic et al 2015). Other benefits of crowd sourcing are new ideas and solutions, deeper engagement,

opportunities for co-creation, task optimization and reduced costs (Brenner *et al.*, 2011), teamwork (Cattani *et al.*, 2013), synergy (Goffee and Jones, 2013), innovation (Heyne *et al.*, 2010), task optimization (Savulescu and Persson, 2012) and conflict resolution (Maccoby and Scudder, 2011; Ishak and Ballard, 2012), among others.

Crowd sourcing usually has challenges. Weak participants often lower work quality, irritate other members and waste time (Brabham, 2012). Therefore, there should be a vigorous monitoring, evaluation and corrective method when deviation against crowd sourcing ideal occurs. Also, unethical use of crowd sourcing may occur when some members benefit at the expense of others without giving due acknowledgements to every participant (Busarovs, 2013). Consequently, crowd sourcing is a growing trend in practice which is particularly evident among leading IHLs (Chandler and Kapelner, 2013). However, there is little research to explain their worth in education.

Some notable benefits of crowd sourcing include added value and cost reduction, innovation, synergy and teamwork.

Value engineering: Value Engineering (VE) refers to working to improve the worth in results while reducing costs (Seeletse, 2015). The approach for reducing costs lies mainly on reducing waste which is possible when experience and expertise are the main roles in a task. In academia, VE includes deliberations in a crowd sourcing exercise and gathering the best resolutions while eliminating those that lack value. Possible benefits also include shared learning, collegial appreciation where there can be improved interpersonal relationships, problems solving from diverse backgrounds and many others. These describe synergies which no individual could achieve alone.

Innovation: Innovation is any progress through new, original and effective philosophies and mechanisms leading to better solutions to achieve new requirements, unarticulated needs or market needs (Heyne et al., 2010). Resilient thinkers reflect effective processes, services, technologies and business models that improve environments. In work settings, innovation is geared to higher productivity, improved performance, better results, and cost-effectiveness, among others. Innovation is a catalyst to growth, to reform the organizational structure for better and more effective processes and products. Innovators search for loftier techniques to improve quality, durability and service. Siltala (2010) explains that innovation is the precise utility for innovators to add value to the existing assets. Innovation leads to improvement. It can occur in several ways. Frankelius (2009) points out that research is a formal and direct tactic to innovation. It can also occur by informal on-the-job variations of practice, through discussions and blends of professional experiences, among other methods. Wisdom is a necessary attribute for innovation. Crowdsourcing is a careful and intelligent way to innovate and to ensure quality work.

Synergies: Synergy entails involving numerous components to generate a whole that exceeds the sum of the individual quotas (Gillwald et al., 2012). It spirals competitiveness, improves strategy and promotes network identity to breed an eccentric tool to compete in the market. Partnerships can become strategic in linking networks and creating synergies organizational (McShane and Glinow, 2010). Organizations with dissimilar core competencies can link their existing business networks to resolve a complex business problem. Agility of diverse expertise and marketing networks that understand the local network, coupled with benchmarked experiences are able to provide larger value for any single business entity of the network. The synergy generated by the networks could increase overall capacity and efficiency of the marketing efforts.

**Teamwork:** Teamwork is vital for colleagues to work together to achieve a goal (Cattani et al., 2013). Team members cooperate with complementary attitudes using individual skills and providing constructive inputs. Teamwork is generally, effective when team members cooperate and communicate (DeChurch Mesmer-Magnus, 2010). Hoegl and Gemuenden (2001) outline important teamwork benefits. Problem solving skills approached from inputs of team members can provide alternative approaches to solutions. Networking and relationship development is another teamwork benefit. Moreover, a team working together continually can bond to help avoidance of conflicts. Unique qualities of each individual enable exclusive knowledge and abilities contributing to improved team members. Synergies emerge this way.

Teamwork is neither easy to administer, nor a guarantee for success. Team members should all be worthy for the tasks at hand, teamwork should be seamlessly managed to prevent adverse effects (McShane and Glinow, 2010). Effects of hostilities towards the goalsshould be prevented. Also, teamwork initiatives can have individuals doing less work in a team than what they normally do working individually, known as social loafing (Prpic *et al.*, 2015). Social loafing can be reduced by making individual performance visible while in a team setting. Smallerspecialization teams in specific tasks can be formed. In these teams, individual performances can be easily measured. Social loafing can

also be reduced by selecting only committed and motivated employees, by increasing employee motivation and increasing job enrichment. Incentives and rewards can be introduced. In an academic setting, production of research outputs is naturally a reasonable incentive.

Social responsibility: Corporate social responsibility entails professional creativities which are not directly connected to corporate economic professional aims which compel organisations to deviate from solely focusing on making profits to embrace legal, financial, environmental, social responsibility and so on, in their core professional strategies (Ladzani and Seeletse, 2010). It is an expert concept that entails operating an enterprise by accounting for the social and environmental impact. It emerged from proper control and accounting, diversity in staffing, compliance invented on the high ethical standards of employees, adoption of operating policies, being responsible for company goods and services, ensuring employee and customer safety at work, quality and control of company own activities and conduct (Niehm et al., 2008). It is an enterprise's deliberate standards and actions to achieve its sustainable development objectives. Ladzani and Seeletse (2012) view social responsibility as a voluntary rule and exercise stretching beyond orthodox regulatory requirements. Social responsibility leaders are enterprises with the potential to influence external stakeholders (such as clients, community, partners and shareholders, among others) to adopt measures for social development and a broad approach to quality and sustainable development (Nguyen et al., 2009). Enterprises embracing social responsibility develop an operational framework to understand its impact and benefits on the environment, consumers, employees, communities and stakeholders.

Thus, social responsibility envelops management values and principles in guiding ethical relationships of business with local communities to enhance sustainable development by preserving available resources for future generations, respecting diversity and reducing social inequalities. Concepts that fortify social responsibility, therefore and according to Ladzani and Seeletse (2010). include 'ethics', 'commitment', 'relations', 'transparent', 'sustainable development', 'social accountability' and the 'promotion of the reduction of social inequality'. They stand out in this vision of social responsibility and will be treated in this study.

**Management support:** An important aspect in work situations to enable employee progress is the support that management can give to staff (Thompson *et al.*, 2010). The two schools (STET&SST) involved in the tasks of this study were supported by the director and the acting

dean, respectively. Without support from management, the activities of employees usually fail to reach maturity. In cases where management supports employees, there is usually high performance.

# MATERIALS AND METHODS

**Design:** A qualitative retrospective study was undertaken from the STET/SST seminar with the aim of developing a resilient and focused work plan to improve teaching and learning, research and community engagement.

Setting and approach: A self-reporting focus group of members (forming a seminar) gathered in the boardroom of Natural Sciences Building of the Sefako Makgatho Health Sciences University (SMU) in Gauteng province. The focus group consisted of members from the School of Teacher Education and Training (STET) from the North-West University (NWU), Mafikeng Campus in the North-West Province and members of the School of Science and Technology (SST) from SMU. The STET members were experts in mathematics education. The SST included academics from Departments of Statistics and Operations Research, computer science and Biology.

**Sampling:** Members from STE and SST formed the study population. The event was hosted by members of the Department of Statistics and Operations Research assisted by the Computer Science Department leadership. Inclusion of other Computer Science participants was based on willingness and availability of members.

**Data collection:** The deliberations and resolutions taken from the focus group formed the text data required for the study. It was agreed that the collected notes be processed to produce a logical disposition in a sketchy form in order to convert it into a useful plan.

**Data analysis:** The notes collected from the meeting were analysed. Unusable ones were eliminated as waste which is according to VE. Areas of synergies were assembled and packaged for use in the work plan. These areas formed themes to benefit the participants.

**Ethical considerations:** The groups agreed that opportunities of joint research shall be exploited to the maximum to produce research output. The agreement included joint writing of a paper from the focus group. The participation was voluntary and the agreements made were unanimous. All the participants have been included as (co-)authors because everyone who attended was contributing. Also, all authors prepared the first manuscript draft and/or corrected the version for the journal.

**Reliability and validity:** The members were invited because of the contributions they made, based on their expertise. They were thus a reliable source of deliberations. From their contributions, waste was removed by removing resolutions that were not useful in the tasks and the objectives set. This was to ensure that only valid input is included on the plans.

#### RESULTS AND DISCUSSION

Crowd sourcing benefits: The seminar produced synergies in that some members were exposed to manuscript preparation for journal publications. Teamwork was learned and some selfless attitudes were also developed. Involving many institutions and many departments is a platform where usually time wasting members avoid to be exposed, even when in their daily work they show negative tendencies. This seminar pulled everyone to positivity which resulted in saving time. Since, time wasting is a form of waste, it was eliminated and this was a VE benefit. In the SST context, the form of seminar was an innovation to boost core aspects of the departments involved. Another area which benefitted was community engagement, an area of strength in STE. It was matched with social responsibility which was an area of strength on the SMU side.

Moreover, the seminar delivered on synergy. This was verified by participant's commitment, their subject knowledge and their willingness to share in teamwork, among other strengths. The experiences of STET were shared. These, in the long-term, shall serve as the platform for SST improvement. Also, immediate plans were made for future engagements. These were bundled and concluded by STET and the Department of Statistics an Operations Research. The plans were divided into short-term, medium-term and long-term which were Phases I, II and III, respectively. For resilience and success of the relationship formed, the earlier phases would sponsor subsequent ones for continuity.

Addressing areas of need: It was incumbent on each member to identify areas where they needed support. For some SST department members, community engagement, research and teaching and learning were all found to be deficient. Many members openly acknowledged their limitations and the areas they needed to be assisted with. This was the main key to achieve the objective of the seminar. Generally, SST needed to improve in all of them. Other findings: The ability of management to conduct its activities is a boost for any company. Thus, management ability is avital element in the activities for entrepreneuring in innovative ventures such as the seminar of this study. Management support was effusively received from both institutions. The seminar was also

supported by administration and refreshments which energized the participation. In addition, commitment was obtained promptly from SST. The support would be a continuous stimulant for future engagement. The engagement was an innovative process of establishing group inventiveness through a mass entrepreneurship initiative (see section 1.1). Also, they engaged in risk taking initiatives (section 1.1.3) in order to attempt to optimize achievement of objectives. Furthermore, leadership is an aspect of importance in academia. Skillful leadership enables attainment of work objectives for lower ranked employees. Through the leadership capabilities existing in SST, the seminar could present a platform for performance of the academics involved.

The other development was that postgraduate students would also benefit from the initiatives such as presentations and lectures on publishing research projects completed and teaching methods for lecture facilitation. The issue of competition was not entertained. It was clear that the STET parties were leading and provided leadership in the way forward. On the other hand, the SMU was required to play a meaningful role in ensuring support of the processes.

The seminar was conducted as a working committee. It produced a project plan with direct and immediate milestones. The seminar delegates defined the project processes and were the resources deployed for the specific activities. There was also a common understanding of the tasks and activities from the members.

The crowdsourcing seminar integrated the worth of the seminar and the ensuing activities for the short, medium and long-terms. The resilience of the work plan would then translate into effective teaching and learning. It would also encourage and safeguard engagement in research and production of research output. Thirdly, it would also lead to community projects that, in the long term would lead to community engagement.

The benefits obtained from the seminar included lessons that contained attributes for resilient and heightened performance. The weaknesses of the previous practices were identified. Also, the benchmarking examples from past experiences were highlighted to assist in fashioning the forward undertakings. They included potentials for succession planning, in case any original member withdrew. The mass entrepreneurship is an enhancer for academic success which has potential for a holistic solution to address substandard academic performance. The team members from the seminar acquired the theoretical skills and confidence to engage in hands-on approaches to produce research and engage in community engagement issues. The strength of the case is also enhanced by that the process is designed to be continuous through short, medium and long-term design. The short-term consisted of eliminating waste from the seminar deliberations and summarizing the findings.

### CONCLUSION

Seminar delegates of diverse skills and experiences deliberated for a team of academics to transform into researchers. The benefitswere to extend to both SMU and NWU. Thus, the seminar benefits are realizable at the individual and institutional levels. The future of the initiatives depends on the smallest team of willing and dedicated members who would retain the collections of learning acquired from the seminar. The initial phase consisted of a large group enough for diversity and learning. The formality of the relationship was not legal but collegial. Its advantage is to allow enthusiastic parties to perform willingly instead of being derailed by low performers who could be bound by legal documents that can never enforce high (or satisfactory) performance from them.

The short-term phase was a 2017 relation that was given the joint project owners from each institution and the counterparts of project managers from each campus. This phase would first, ensure a concerted effort to produce a research output based on the initial research based on common interest, in a business approach mode. The process would also ensure a return seminar on the NWU campus. This return meeting would also enable SMU staff to visit the Department of Statistics in NWU. The relationship was established based on the positive results of the seminar and on the prospects of the envisaged future in the relationship. The other result was a unanimous acceptance to continue the seminars, alternating the venues. The fact that there was no competition made the relationship smooth. The seminar and agreements were made in good spirits of mutual growth. Furthermore, there was a willingness of the SMU team to be mentored by the more advanced NWU team and the commitment of the NWU team to mentor the SMU team. Furthermore, the strengths of the teams would serve as the initial input and platform. The work plan would also be mindful of weaknesses acknowledged in order to design short, medium and long-terms plans for the model of the relationship.

# RECOMMENDATIONS

The study recommends that:

- The activities of the first phase should be prioritized and completed within the shortest possible duration
- The first phase should be used to design the plans for the medium phase
- It should also be used to sketch the medium-and long-term phases
- It should be managed resiliently to establish a platform for the medium phase

- The medium-term should consist of only 1 year after the short-term phase
- The long-term phase should be a flexible/adaptable phase to commence from the third year from the first seminar
- The entire plan should be visualized (i.e., modelled), simplified and implemented by the fewest available members.

### **IMPLEMENTATION**

**Description and details of the model:** Every phase, like the first one, should introduce a theme. Deliberations in a seminar for the phase should produce a research manuscript. The themes should be of high value and quality in order to develop and improve aspects of the work in the divisions involved. The deliberations should focus predominantly on the theme. A manuscript should be beefed up with relevant literature to encourage conversion to a publication. Only involved parties shall share co-authorship. Any other support will be duly acknowledged. Also, competition is not permissible from the yields of the relationships. However, competition is encouraged from members through the use of the lessons learnt from the relationships in this venture. This competition is encouraged only on new ventures that emerge outside the relationship.

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