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# Research Papers on knowledge, Innovation and Enterprise



**INTERNATIONAL CONFERENCE ON  
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**Research Papers on  
Knowledge, Innovation  
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# Research Papers on knowledge, Innovation and Enterprise

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James Ogunleye

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## Deepening the links in the knowledge-Education, Creativity, Innovation and Enterprise Chains

The Organising Team of the International Conference on Knowledge, Innovation and Enterprise is delighted to publish the 2015 edition of this journal—*Research Papers on Knowledge, Innovation and Enterprise*—as part of the KIE15 Conference publications. It is always a privilege to have a range of subject specialists to contribute to the journal.

Knowledge-Education, Creativity, Innovation and Enterprise are the core themes of the KIE conference—innovation sits at the heart of what the KIE conference is all about. Innovation in this context is broadly defined. An IBM colleague and I have conceptualised innovation in a seminal work as a by-product of creativity (Ogunleye & Tankeh, 2006; Tankeh & Ogunleye, 2007). And truly so.

At the heart of innovation is knowledge-education. But knowledge on its own will not produce a desired outcome: it requires our abilities to apply that knowledge in a variety of contexts—both to familiar and unfamiliar situations—in a way that creates or adds value (see also Ogunleye, 2001). Creating or adding value to a product or service or taking the outcome of innovation to the marketplace is an act of enterprise—something that is relished by every entrepreneur. So, from the first paper in this edition of the journal by Gillian Hilton and Helen Tyler to that of Angelica Baylon and Eduardo Ma R Santos, and that of Martin Ujakpa and his colleagues, the goal of the journal and KIE Conference remains the same: to strengthen and deepen the links in the knowledge-education, creativity, innovation and enterprise chains.

James Ogunleye, PhD, FRSA  
Chairman, 2015 KIE Conference

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# **Innovation, or returning to the Victorian era, when preparing teachers for the classroom? An evaluation of the School Direct training programme for teachers in England**

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**ABSTRACT** This paper examines the School Direct route into teaching, introduced in England in 2012, questioning its claims for innovation as a school-led, as opposed to university-led initiative. The paper compares this route into teaching with other programmes, where higher education institutions are routinely involved in training and with the pupil-teacher programme introduced in the nineteenth century, which also trained new teachers in schools. Questionnaires were issued to early years primary trainees and newly qualified teachers, in order to examine their experiences of the training whilst visiting tutors were questioned and mentors on training programmes underwent group interviews to ascertain their experiences. The drawbacks of this school-led approach to training are examined and possible consequences explored. The authors conclude that previous errors in preparing teachers are being repeated, possibly due to the ignorance of politicians who appear unaware of previous training approaches and who seem to consider the School Direct route an innovation in teacher education. In particular there is a serious lack of subject knowledge and pedagogical theory underpinning the practical training and mentors lack the time and the knowledge to fill the gaps left by the change to a programme which is skills based. In addition, the initiative is failing to recruit to target resulting in a possible teacher recruitment crisis.

*Keywords:* school direct, teacher training, pupil-teacher- school-led

## Introduction

In 2012 the then Secretary of State for Education introduced the School Direct Programme (SD) as an innovative way of preparing teachers for work in English schools. The idea of school-led training was presented as a movement to give schools more influence over the development of the teaching workforce. The programme was a move on from the earlier *school-based* programmes, such as the Graduate and Registered teacher programmes (GRTP), where schools and universities worked together to train teachers, mostly in schools but with higher education institutions' (HEIs) involvement. The move towards *school-led* training however, was seen as an exciting innovative change, giving schools more power to train the teachers they needed. The question raised in this paper asks if this is really the innovation claimed, or a return to early training efforts common in the second half of the nineteenth and early twentieth centuries? Are we innovating or returning to a previous system that was deemed inadequate?

## Pupil-teacher scheme

According to Keating (2010) the first national pupil-teacher scheme was established in England in 1846, though earlier, teacher training had taken place via the establishment of training colleges, most of which were allied to Christian churches. Hand-picked students with suitable ability and moral character were chosen to be trained by head teachers before and after a full day of teaching. That is, they worked untrained and learned by copying the performance and teaching styles of the other teachers in the school. They were apprenticed for five years, providing that they passed an annual examination by Her Majesty's Inspectorate (IoE, no date). Successful training resulted in the student teacher being certificated and allowed to sit an exam for entry to training college, or to work immediately as an uncertified teacher. This latter option was popular with women, who were not expected by their families to leave home and would be barred from teaching once married. Whilst in this 'apprenticeship' trainees were paid at low rates. The popularity of the pupil-teacher route rose massively after the 1870 Education Act made elementary education compulsory and there was an urgent need for more teachers. However, questions began to be asked at the beginning of the twentieth century about the standards of these 'unqualified' teachers and how their training could be improved. Gradually, the system was adapted, as after the 1870 Act the proportion of elementary teachers who were pupil-teachers and therefore unqualified, was at least one quarter of all those employed in the sector (Keating, 2010). Dent (1977) praised Morant, who was to become Permanent Secretary to the Board of Education in 1903, for his attempts to improve the standard of elementary school teachers, raising the age for beginning the pupil-teacher scheme to fifteen, unless HMI gave permission for an earlier start to training, for example in rural schools where there was an urgent need for new teachers. Attempts to raise standards continued; Morant demonstrating a determination to provide more and better instruction for potential teachers, including more subject theory. His 1903 regulations demanded

thirty hours per year of instruction, a limit to the time each day these pupil-teachers could be in front of a class and the discussion of different approaches to learning, but questions continued to be asked if this was the best way to train teachers and if school staff had the time or expertise to undertake the job. As a consequence, with the encouragement of Morant, more regulations were introduced to enable teachers to be instructed in pupil-teacher centres run by the local Boards of Education. Gradually teacher training began to move into colleges and universities and bursaries were established to help with expenses of training. However, the pupil-teacher programme as a route into teaching was not completely removed until the end of the 1930s.

After the second World War the urgent need for teachers, as so many had been killed or wounded in combat, resulted in the establishment of emergency training colleges administrated by Local Councils, through Local Education Authorities. The McNair Report in 1944 (HAD, no date) had suggested that the way to meet the urgent need for teachers was to establish organisations in different areas to bring together the work of training colleges and universities and establish Education Departments or Institutes in universities. In addition a central examination board was established to control the final examination, which enabled the trainees to become qualified teachers. The report also recommended that training should last for three years, but this was not implemented until 1960.

By the 1970s (Furlong et al, 2000) most teachers were trained for the primary phase and for some secondary subjects by a 3 or 4 year course in a Higher Education Institution and rapidly a solely graduate profession was introduced, with Bachelor of Education (BEd.) or Bachelor of Arts (BA) degrees with Qualified Teacher Status. Gradually, the old teacher training colleges were absorbed into polytechnics or universities, or became universities in their own right and were responsible for the teaching of theory, whilst growing cooperation between schools and HEIs, improved practice and involved the training of school based mentor

The majority of teachers were educated in universities by the 1990s (Tomlinson, 2001), most taking a first degree and following this with the one year Post Graduate Certificate of Education (PGCE) (Douglas, 2012). Indeed Douglas (2012:3) describes this phase as one where teacher education was 'school based' as PGCE programmes involved a minimum of 24 weeks (18 in primary) in at least two schools to give students practical classroom experience. PGCE also involves academic study and understanding of how to teach successfully and an assessment of teaching skills in the classroom. For primary and early years training, the BEd. or BA were still popular, though these students also had the choice of a PGCE programme. The 1994 Education Act established the Teacher Training Authority and the training of teachers underwent a huge transformation, including the commencement of the Graduate Teacher Programme (GTP) with the intention of providing high quality training for trainee teachers whilst working in the school environment. Programmes for teacher training had historically been rigid in their content. but the varied expertise of the potential applicants to this programme required the necessity to maximise their potential and formulate a path around their expertise and this was viewed as an innovative approach by New Labour, who came into government in 1997. Applicants came from industry, law, medicine and also the programme

attracted teaching assistants who had aspirations to become teachers, but needed to retain a salary. The aim of the GTP was to enable trainees to decide and control their own direction and process of training, within a carefully constructed framework. Whilst the trainees participated in sixty days of teacher centred training, the role of the plan was to promote learner-centred training and acknowledge the variety of learning styles and experiences of the trainees, so that by outlining the process and resources available, they would then become the experts in managing their programme and become empowered to determine their training path. Further to this the Registered Teacher Programme (RTP) was developed for those who did not possess a first degree, with co-operation from higher education to provide programmes which enabled candidates to build onto their existing higher education credits and earn a degree and qualified teacher status. This route was popular with teaching assistants many of whom had some higher qualifications but not a full degree. However, this move to more practice-based programmes has been criticised by Spendlove et.al. (2010) who assert that in recent years in university and school-based training programmes, practice is being prioritized and that theoretical pedagogical knowledge is losing favour in teacher training, because of the rising demand for trainees to spend more time in front of classes and less time in lectures.

In the new century the Teach First programme was introduced. This route was intended for high quality graduates with leadership potential, who would initially serve as inspirational teachers in low income communities, swiftly moving onto leadership roles in the profession. Following 6 weeks intensive training, students are placed in school for 2 years with a possibility of a PGCE award and a Masters degree. At the end of that period trainees can expect fast promotion or leave teaching for careers in other professions.

School Direct, the “new initiative”, enables schools to recruit and select the trainees needed, with an expectation they will be employed within the group of schools in which they were trained. A network of Teaching Schools based on the model of Teaching Hospitals leads the training and professional development of teachers and head teachers and bids for places for the training in the partnership schools (Ratcliffe, 2014). Schools can also negotiate how they want their teacher training programme to be delivered, in partnership with an accredited Initial Teacher Training (ITT) provider, such as a university or School Centred Initial Teacher Training (SCITT) who remain accountable for the quality of training and ensuring that it meets the government ITT standards. A proportion of the funding for the trainee is paid to that provider. However, it is possible for the lead school to take on the role of trainer and provider using mentors in the partner schools to deliver most of the training.

*The features of the School Direct programme are:*

- Partnerships of schools under the umbrella of The Teaching School request training places from government
- Schools are allocated training places for School Direct
- Trainees are employed by schools as unqualified teachers paid or unpaid

- The programme should attract high quality graduates with at least 3 or 4 years career experience

The training is highly differentiated to meet the needs of the school in which employment, following training is expected, although this is more relevant to secondary schools because of subject specialisms. However, this factor can be a disadvantage, as if when they are qualified, trainees move to work in a school with a different ethos or style they may find their new position difficult. The plan for SD was to increase the proportion of time trainees spend in the classroom and to attract well-qualified graduates who wanted a career change after several years working in other areas (Ratcliffe, 2104).

School Direct focuses on mentors who provide the catalyst for change, enabling the trainee to learn within the school environment. However, as in the pupil-teacher route trainees stay in one school for the majority of their training and research carried out by Hilton & Tyler, (2015), with School Direct primary trainees, successful SD qualified teachers, mentors and visiting tutors showed that for many of the 22 trainee respondents, there was a limited experience of other school environments, or exploration of different approaches to teaching and learning. This is similar to the limited experience of pupil-teachers who could spend five years in the same school. In addition the amount of theoretical input experienced by the trainees studied was extremely varied for both subject and pedagogical theory. Some trainees had input from a SCITT or university, but for some, most of the theory had to come from the lead school of the consortium or their host school. This scenario is similar to that of the pupil-teacher route where school heads were responsible for theoretical training. Hobson & Mallderez (2002) question whether mentors or even senior teachers are sufficiently up to date with recent research studies on teaching and learning, or if the time allotted to theory in the SD programme is sufficient. In other educationally high performing countries the move has been for more input from higher education not less (Universities UK, 2014). Sadly, the trainees questioned, in most cases were happy with the less theoretical approach of School Direct than would have been the case on a PGCE route, as they believed 'learning on the job' was the best way to train. Some however, did question the lack of theoretical input in areas of subject knowledge and teaching approaches, but many did not seem to realise there is more than one way (their school's way) to carry out the learning and teaching process. In PGCE programmes the amount of time spent studying theory is much greater and this was also true of the GRPT schemes. Those following BEd. and BA programmes also have a greater time spent studying subject and pedagogical theory as they follow a three or four year course. Trainees on many of these programmes were expected to undertake research in the schools in which they train. This is not present in all SD programmes, mainly due to restricted time limits.

Hobson et al's (2009) research has a number of implications for teacher educators and policy makers; in particular, it highlights the necessity to adopt a collegial approach in training teachers, not always present in the fragmented methods of delivering the SD programme (via school/university partnerships, teaching schools, school consortia, SCITTs and online providers). The focus of their findings also

centres on the need to ensure there is provision, not only to address the developmental needs of the trainee teachers, but also those who support them. Mentor training and the choice of the right mentor is crucial and though many respondents praised their mentor, in some cases respondents clearly lacked support in this area. Some complained of mentors who had been forced to accept them and did not follow correct procedures for the programme. This lack of good support from experienced staff was further noted in the responses of some trainees, who rarely or never saw a senior member of staff, or a visiting tutor from outside the school. Even more worrying was that they did not appear, in many cases, to understand what they were missing. Due to the fragmented forms of delivery of SD mentor training, a consistent approach is not possible, even though in many cases the mentor was almost the sole guide for the trainee. When questioned about the theoretical knowledge they had received, subject and pedagogical knowledge was recalled by only around half of the respondents though 100% remembered being taught about behaviour management (a present government concern). Most agreed that there was, in the programme delivery, insufficient input on assessment theory and how to apply it. Although the sample size here was small 22 (19 trainees and 3 successful SD teachers) this gives rise for concern.

In addition, visiting tutors who were asked their opinions on the SD programme were concerned about the lack of theoretical understanding underpinning practice in SD trainees, their belief that their school's way was the right, and possibly only way to approach teaching and learning and that mentors often were not sufficiently trained with a wide understanding of the implications of educational research and did not possess sufficient up-to-date subject knowledge to train others in the profession.

### *Effects of recent changes to teacher training in England*

So what has been the result of this 'initiative to 'train on the job'? Despite Hobson et al's (2009) research, which showed that school-based routes, such as the GRTP resulted in trainees being more confident about their preparation for teaching, than those trained in by university based courses, SD cannot be added to this list, as in many cases there is far less theory input on SD programmes than with its predecessors. However, the majority of respondents in this research considered that they were well or very well prepared to become a qualified teacher, though of course they had no experience of other types of training programmes with which to compare SD. Visiting tutors however did have that experience and one experienced university tutor explained that he had to accept that SD was not an academic, but a skills-based programme, similar to the pupil-teacher training in previous centuries.

Questions are now being asked about whether all this innovation of, and changes to, routes into teaching is confusing applicants and lowering recruitment. There is serious concern over the effects of the SD initiative on the recruitment of teachers. The intention, to make training more school-led and practical has coincided with a drop in the numbers of applications for teacher training. University programmes have been savagely cut to allow for more school-led training to take place. Elmes (2013a) underlined the drop in numbers allocated to university train-

ing, a 12.8% reduction from the previous year. For example, Sheffield University had received cuts of 76.2% over the past two years in its intake to teacher training and Cumbria University, as a result of a massive cut in its intake was discussing reductions in numbers of staff (Elmes, 2013b). Richardson, (2013) reported that only two thirds of the SD allocated training places had been taken up and that, at the last minute, universities had been asked to cover the short fall. This is resulting in a considerable drop in the applications to teach subjects which were already under-recruiting, such as chemistry, Design and Technology and computing. Certainly, there has been an overall reduction in the numbers applying to train and Howson (2015a) draws attention to the drop in applications to primary schools for SD training places, which may result in some schools pulling out of the scheme altogether, as it is no longer financially viable. This concern over low recruitment to SD and other programmes, is compounded by the closure of some successful university PGCE programmes (e.g. Cambridge University, Anglia Ruskin University) as universities have not been allocated sufficient trainee numbers to make courses financially workable and must raise serious concerns for the future of the numbers in the teaching workforce. Howson (Morrison & Ward, 2014) believes all these changes could lead to a serious teacher shortage particularly in the hard to recruit subjects and in areas of the country, such as the South East where there is a large population increase. Elmes (2015) also questions the sense in removing trainees' places from highly successful university departments and giving them to groups of schools, who are not recruiting to target, with little evidence that this 'so called' innovation will produce better teachers. Yearly, the National College for Teaching and Leadership has had to ask, late in the run up to the start of the training year, university departments and SCITTs to bid for an increase in their allotted training numbers as SD is failing to recruit and as Howson (2015b) points out in his blog, *Grim news on teacher training*, a crisis in recruitment looms.

The other major concern for the SD initiative is about the role and training of school mentors on whose shoulders rests much of the training of the SD workforce and this together with the lack of theoretical underpinning of the heavily practice based course and the potential disappearance of university education research departments, due to cuts in their numbers of trainee teachers, is causing alarm for recruiters. So the question must be asked, is this a real initiative, or the repeat of the pupil-teacher programme under another name? Students of teaching rarely study in detail the different programmes provided to train teachers over the last two centuries. Maybe this is for a reason; to prevent them realising we have been here before. Pupil-teachers sat at the feet of the Master to learn and watched other teachers work, ditto SD trainees. Pupil-teachers worked as unqualified teachers but were paid less than their trained colleagues, ditto SD trainees. Senior staff and other teachers provided subject input to pupil-teachers and for many SD trainees this is the same, little other theoretical input is provided, despite the vast increase in the curriculum required and the underpinning knowledge of learning and children's development which as Carter (2015) asserts is essential for all teachers. Pupil-teachers worked in school for five years and were required to pass inspection yearly and only then, were they allowed to attempt to go to a training college, or they remained as an unqualified teacher. SD trainees get one year only of training

and are then deemed, after completing their assessment, to be fully qualified; however, unlike pupil-teachers they start with a degree qualification. Like the pupil-teachers SD trainees have only limited experience of how other schools work. Visits are made but this is not like PGCE and other university based programmes where attempts are made for trainees to experience variety in school placements. Unlike Morant's scheme to ensure a set number of hours the pupil-teachers were allowed to work and the training hours that had to be provided, it appears that from the variety of SD schemes studied by Hilton and Tyler (2015) there is much less consistency in the experience of the SD trainees, depending on who is providing the training and if there are links to a SCITT or university.

## **Conclusion**

Innovation means new, improved, advanced, modernised. The School Direct approach does not appear to have any of these characteristics, but is rather the antonym of innovation – stagnation. It appears we are indeed going backwards, despite all the fears that our education system does not measure up to those in other countries, more successful in international ratings wars. Why has the government decided to remove universities from a major role in teacher education? What is this fear of filling students' heads with odd ideas about learning? Why, when so often in the press and in government circles our education system is found wanting (despite Ofsted awarding outstanding to many university training programmes) is there this determination to let schools and teachers, who are constantly criticised for 'failing' pupils or 'drifting' to train the next generation of teachers? How can they be more successful than higher education? All the research points to a pending crisis, into which we are walking, with closed eyes. Why are we supporting the use of salaried, therefore accountable, untrained teachers for our children? We would not be happy to do this with other professions. The pupil-teacher route was clearly seen as inadequate, so why, is a programme so similar supposed to succeed? Fragmentation in a tightly accountable education system seems to be counter-productive. However, there is nothing new in an old initiative being presented with a new name as so many are not aware of what has gone before. Here we go round again!

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# **Application of Virtual learning Technologies in Teaching and Learning in Tertiary Institutions in Ghana**

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**ABSTRACT** Widespread introduction and use of Virtual Learning Environment Technologies (VLETs), has led to its use to support teaching and learning especially at the tertiary level. Early work on the use of Virtual Learning Environment Technologies to support teaching and learning has established the percentage of schools in Korea, Ireland, UK, Ireland and some other places as well. In the case of Ghana, it is unknown how many schools are using Virtual Learning Environment Technologies. This study therefore attempts at determining the percentage of tertiary schools using Virtual Learning Environment Technologies to support teaching and learning. The other supporting sub-objectives set for the study includes the determination of the Information and Communication Technology (ICT) proficiency level of participants of the study, participant institutions and the use of technology to supports teaching and learning and finally participant institutions and the use of online management systems. Using the stratified probabilistic sampling, a sample of 45 was selected from the population of 140 accredited tertiary institutions. A total of 493 participants made up of students, lecturers and IT personnel were then selected randomly from the 45 Institutions. This constitutes 45 lecturers, 400 students from tertiary institutions and 48 IT support staff of tertiary institutions. The study found out that 39 percent of Ghanaian tertiary institutions use Virtual Learning Environment Technologies to support teaching and learning, whereas 58 percent was recorded for those institutions who do not use Virtual Learning Environment Technologies in teaching and learning. Again, ICT proficiency in tertiary institution was found to be 83 percent while 76 percent of the institutions uses technology to support teaching and learning in their schools. The paper makes a number of recommendations for the development and application of Virtual Learning Environment Technologies for

tertiary institutions in Ghana was made since the study revealed its prospects. The prospects lied in the fact that most of the respondents were ICT proficient and that most of the respondent institutions uses ICT in teaching and learning in their institutions.

*Keywords:* Virtual Learning Environment Technologies, Online Learning, Tertiary Institutions, Ghana, e-learning, Learning Technologies and Management System.

## **Introduction**

Supporting teaching and learning using technology at the tertiary level of education has become a fundamental ingredient in the experience of many students, lecturers and administrators. One reason for this trend is the widespread introduction and use of Virtual Learning Environment Technologies (VLETs). VLETs combine a variety of tools, facilities, techniques and resources into a single integrated system which organizes and provide access to online learning services (including teaching and learning) for students, teachers, and administrators. Systems that come with tools, facilities, techniques and resources include Content Management System, Course Management Systems, Learning Platform and Learning Content Management System. Asunka (2008) revealed that VLETs are used to support teaching and learning in Ghanaian tertiary Institutions. However, data on the number of schools using VLETs to support teaching and learning, remains unknown. Unwin and others (2008) argues that the use of VLETs to support learning and teaching in Africa is still young and needs to be developed. The question that still remained unanswered was the number of schools using VLETs to support teaching and learning. On this note, this study was carried out to fill the gap; which is to estimate the percentage of Ghanaian tertiary Institutions that use VLETs to support teaching and learning.

## **Literature Review**

### *Evidence of the use of VLETs to support Teaching and Learning*

In an empirical study, Asunka (2008) observed that user-students were not interested in collaborative activities and in the use of the discussion boards. They observed that discussion threads were initiated by instructors and none of the students joined, even though opportunity was given to students to start any discussion on topics of their choice. This study looks into the use of VLETs in the Ghanaian Universities. The study will fill the gap by addressing the percentage of universities using VLETs? It can also be argued that Asunka's (2008) study is old and needs to be updated to reflect current trends on the use of VLETs and to find out if those findings still exists. These justifications encouraged the need for the study to be conducted.

### *Age of VLETs in Ghanaian Tertiary Institutions*

A study conducted by Unwin and other (2008) showed a wide variety of different e-learning practices in Africa. They also observed the youthful stage of VLETs introduction and application in Africa. A specific case was conducted by Blankson (2015) on Ghana's e-learning in tertiary institutions. Blankson argues with an estimated internet penetration of 1 in 250 people, compared with the global average of 1 in 15, it will be difficult, if not impossible, to use VLETs in tertiary education in Ghana. Blankson further argues researchers have shown that teaching resources are inadequate in the higher education and that Ghana is more familiar with the traditional lecture mode of instruction delivery. This assertion still makes VLETs adoption at its infancy stage in Ghana. From this one can state that e-learning is in its infant stage in Ghana and if this is so, then the use of VLETs in Ghana is at its infancy. This study seeks to confirm this.

A study in 25 African countries shows two extreme pictures (Njenga, 2011). One is that of the enthusiastic advocates of e-learning systems and the other is that most African educators presently have little knowledge and/or interest in e-learning and its usage (Unwin et al., 2009). If Ghanaian educators are among those advocates, then it is possible that only a small percentage of Ghanaian Tertiary Institutions will use VLETs to support Teaching and Learning.

### **Use of VLETs elsewhere**

*The Case of UK*—In the case of UK, Jenkins M., Browne T. & Susan Armitage (2001) found that the use of VLETs is widespread. The study revealed that 80 percent of UK Institutions have VLETs and 40 percent use them.

*The Case of Ireland*—A survey of five Irish tertiary institutions on the usage and uptake of VLETs by Cosgrave et al. (2011) found that VLETs are frequently used by higher education students.

*The Case of Korea*—With reference to Leem and Lim (2007), Capper, (n. d.) stated that 85 percent of Korean universities and colleges have implemented e-learning: hence using VLETs to support teaching and learning. Results of this study will allow for the percentage of Tertiary Institutions in Ghana that use VLETs to support teaching and learning to be unveiled.

### **Methodology**

The research design employed in the study was the Survey Research Design. Specifically one time short design or the cross-sectional survey research design was employed. The reason for the selection of one time short or the cross sectional survey is that data for this study will be collected at one point in time from a sample selected to represent the larger population. This study is also qualitative. With this method, the researcher was able to capture complexities of phenomena by

carrying out an in-depth survey on the target population, thereby, collecting a lot of data. The target population for the study is Ghanaian Tertiary Institutions. This is made up of the one hundred and forty accredited tertiary Institutions. Among them are public/private universities/Colleges, Polytechnics, public/private Teacher Training Colleges and public/private Nursing Training Colleges. Because of the availability of non-overlapping homogeneous subgroups in the population, the study employed the stratified probabilistic sampling. In all, 493 participants (Lecturers, Students and IT Personnel) were used for the study. The instrument employed for the study was questionnaire. To test and measure the instrument, the content validity approach was used. Data for the research was collected from Primary source.

Due to the qualitative nature of the study, the study objectives for the research and the study design (survey) for the research, the study adopted a descriptive statistics. Coefficient alpha (Cronbach's alpha) was used to estimate test-score reliability for the study. The result was 0.90, making the result more consistent and sufficient. The words on the questionnaire were understood by all the respondents for the study. This validity was established during the pre-test stage of the data collection exercise. The sample and sampling procedure for the study was done this way. A list of all the 140 accredited tertiary institutions operating in the country was obtained from the national Accreditation Board. To ensure equal representatives, the institutions were grouped according to types (universities, polytechnics and training colleges). From sample size determination software (<http://fluidsurveys.com/university/calculating-right-survey-sample-size/>), a sample size of 103 institutions was considered appropriate for the study. Proportional stratified sampling procedure was then adopted to select sample sizes proportionally and allocated to each stratum (university, polytechnics and training colleges). The distribution was as follows: 58 universities, 15 polytechnics and 30 training colleges. From the list of the 80 universities, 20 polytechnics and 40 training colleges, making 140 tertiary institutions, lottery method of the simple random sampling technique was employed to select the selected institutions. The selected institutions were then contacted and the list of students, IT personnel and lecturers populated to constitute the sampling frame for the study. The sample size calculating software was then employed again to get an overall sample size for the study. This stood at 493 and proportionally allocated to the lecturers, students and the IT personnel based on their population. The lottery method of the simple random sampling procedure was then employed again to select the samples. The result was (45 lecturers, 400 students and 48 IT personnel).

## **Discussions**

### *Participants' ICT proficiency Level*

Table 1 shows the ICT proficiency level of participants. Out of 493 participants, 121 (representing 24%) were excellent in ICT use, 165 (representing 33%) were very good in ICT use, 128 (representing 26%) were good in ICT use, 33 (representing 7%) were fair in ICT use and 19 (representing 4%) were poor in

ICT use. However 27 (representing 6%) participants did not declare their ICT proficiency level.

Response	Lecturer	Students	IT Support Staff	Total	Percentage
Excellent	-	92	24	121	24
Very Good	21	123	21	165	33
Good	7	119	2	128	26
Fair	3	30	-	33	7
Poor	9	10	-	19	4
Missing	-	26	1	27	6
<b>Total</b>	<b>45</b>	<b>400</b>	<b>48</b>	<b>493</b>	<b>100</b>

*Table 1: ICT proficiency level by category of participant  
Source: Field Construct, 2015*

The percentage distribution of the information in Table 1 is shown in Figure 1



*Figure 1: Percentage Distribution of Participants' ICT proficiency Level  
Source: Field Construct, 2015*

Out of the 121 participants who were excellent, 5 were lecturers, 92 were students and 24 were IT Support staff. Of the 165 that were very good, 21 were lecturers, 123 were students and 21 were IT support staff. Of the 128 that were good, 7 were lecturers, 119 were students and 2 were IT support staff. Of the 33 that were fair, 3 were lecturers and 30 were students. For 19 that were poor, 9 were lecturers and 10 were students. Those who did not declare their ICT proficiency status were 26 students and an IT support staff. For details please refer to Figure 2.

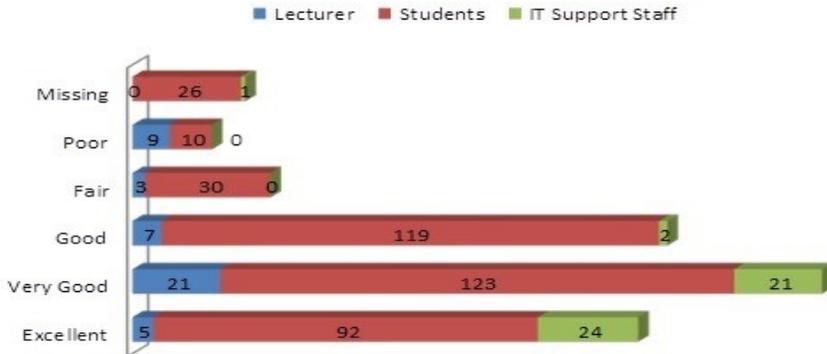


Figure 2: ICT Proficiency Level by category of respondents  
Source: Field Construct, 2015

### Participant Institutions and the use of technology to support teaching and learning

From Table 2 and Figure 3, 103 out of 493 participants (representing 21%) strongly agreed that their school uses technology to support teaching and learning. 269 (55%) also agreed that their institutions were using technology to support teaching and learning. 58 (12%) do not know whether their institution uses technology to support teaching and learning. 27 (5%) disagreed that their institution uses technology to support teaching and learning. Another 27 (5%) strongly disagreed that their institutions use technology to support teaching and learning.

	Lecturers	Students	IT Support Staff	Total	Percentage
Strongly Agree	4	95	4	103	21
Agree	32	201	36	269	55
Do not know	2	56	-	58	12
Disagree	5	18	4	27	5
Strongly Disagree	1	8	-	9	2
Missing	1	22	4	27	5
<b>Total</b>	<b>45</b>	<b>400</b>	<b>48</b>	<b>493</b>	<b>100</b>

Table 2: Participant Institutions use of technology to support teaching and learning  
Source: Field Construct, 2015

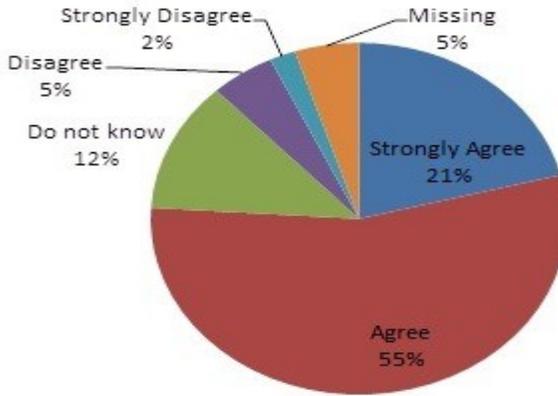


Figure 3: Institutional use of Technology to support teaching and learning  
Source: Field Construct, 2015

Reasons participants gave for saying that their institutions used technology to support teaching and learning includes the following:

- Availability of internet provided by the institution
- Provision of computer labs by the institution
- Use of projectors in teaching
- Use of resources from the internet for teaching and learning
- Provision of online journals that the institutions have subscribed to
- Provision of e-libraries or links to e-libraries that students are given access
- Provision of lecturer notes and assignments on schools' system
- Communication with lecturers through emails, chats and also by the schools' system

### Participant Institutions and the use of Online Management System

Table 3 below provides a breakdown of Institutions that are using Online Management Systems to support teaching.

Response	Lecturer	IT Support		Total	Percentage (%)
		Students	Staff		
<b>Uses online Management system</b>	9	165	20	194	39
<b>Do not use online Management System</b>	35	227	24	286	58
<b>Missing</b>	1	8	4	13	3
<b>Total</b>	45	400	48	493	100

Table 3: Participant Institutions and the use of Online Management System  
Source: Field Construct, 2015

From Table 3, 194 respondents (representing 39%) of the participants attested that their institutions were using Online Management Systems to support teaching and learning. 286 (representing 58%) of the participants were not using Online Management system to support teaching and learning. Figure 4 shows the detail breakdown.



Figure 4: Participant institutions and the use of online system by category of participant  
Source: Field Construct, 2015

## Conclusion

### *Participants ICT proficiency*

The Figures from Table 1 reveal that 414 (representing 84%) participants are ICT proficient. By this result, it is conclusive that 84 percent of Ghanaian students and lecturers are IT proficient.

### *Participants Institutions and the use of technology to support teaching and learning*

From Table 2, 372 (representing 76%) of the participants affirmed that their institutions use technology to support teaching and learning. Among reasons given by participants for agreeing that their schools use technology include availability and use of internet, computer labs, projectors, internet resources, online journals, e-libraries or links to e-libraries, lecturer notes/assignments on school management system, emails facility and chat facility. However 35 (representing 7%) participants disagreed that that their institutions are using technology to support technology.

Going by the information in the foregoing paragraphs, it can be concluded that 76 percent of Ghanaian tertiary institutions use technology to support teaching and learning and 7 percent do not. 17 percent of the participants were unclear whether their institutions use technology to support teaching and learning or not.

## Availability of online Systems in tertiary Institutions

Per reasons given by participants for their response that their institution use technology to support teaching and learning, 6 percent of the participants stated the use of institutional online management system as their reason for agreeing that their institutions use technology to support teaching and learning.

From Table 3, 194 (representing 39%) participants say their institutions use online management system to support teaching and learning. Apart from the 13 (representing 3%) who did not state whether their school uses an online management system to support teaching and learning; the rest 286 (representing 58%) say their institutions are not using online management systems to support teaching and learning. Based on this, it can be concluded that less than 50% tertiary institutions (58%) in Ghana do not use online management system to support teaching and learning. However 38 percent of schools use online management systems to support teaching and learning.

The result above confirms the finding that "...higher educational institutions in Africa are still reluctant to develop systems that can enable learning resources to be made available to students through VLEs" (Unwin et al., 2008).

## Summary and Concluding Remarks

From the foregoing, it is found that the ICT proficiency of lecturers and students in Ghana tertiary institution is high; the study supports that 84 percent of students and lecturers who are ICT proficient; most tertiary institutions in Ghana use technology to support teaching and learning; 76 percent of tertiary institutions use technology to support teaching and learning; less than 50 percent Ghanaian tertiary institutions use Virtual Learning Environment Technologies to support teaching and learning; and approximately 39 percent institutions use VLETs to support teaching and learning. The findings from this study have implications for teaching and learning in Ghana tertiary institutions. The main one is the prospect in the application of the VLETs in the Ghanaian tertiary institutions since most of the respondents were willing and had some level of ICT proficiency level. However, it is recommended that the stakeholders of the VLETs in tertiary institutions in Ghana should pay a particular attention to the development and use of VLETs in the tertiary institutions since the prospects exists. Prospect for the use of VLET lies in this fact: 87 percent of respondents were ICT proficient and 76 percent of the institutions uses ICT in teaching and learning.

## Limitation of the study

Though it did not affect its result, the study limited itself to only 493 samples due to problems of finance. However, the study could have involved a wider sample size than what was used.

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### **Notes**

#### ***Definitions of terms***

- Virtual Learning Environment Technologies:- a wide range of tools, facilities, technique and resources that form a system which organizes and provide access to online learning services for students, teachers, and administrators.
- Online Learning Management System: in the context of this studies, online management system is used interchangeable with VLETs. It organizes range of tools, facilities, technique and resources that form a system which organizes and provide access to online learning services for students, teachers, and administrators.
- School: just like institution, in this study, school is used interchangeable with institution to refer to tertiary schools. Note that there are exceptions if stated explicitly.
- Tertiary Institution: - This is the educational level following the completion of a secondary or senior high education level of education. It can also be referred to as the third stage of education; thus after the basic and senior high stages. This however does not include vocational education and training beyond senior high or secondary education.
- Online Learning: it is the use of a range of technologies such as the intranet/ internet to allow for communication between lecturers and students. Example, sending email to a student about their assignment or a student posting a question to a course discussion group for others to respond.
- National Accreditation Board:- This is a Ghanaian regulatory agency of the Ministry of Education that ensure that the country's tertiary education system continues to be responsive to a fast changing world and producing competitive graduates.
- Institution: except where it is stated explicitly as a different school (primary, junior high or senior high), in this study, the name institution is used in reference to tertiary schools.
- ICT proficiency is the ability to use digital technology, communication tools, and /or networks appropriately to solve information problems in order to function in an information society. This includes the ability to use technology as a tool to research, organize, evaluate, and communicate information and the possession of a fundamental understanding of the ethical / legal issues surrounding the access and use of information.
- Information Technology:- it is the use of Computer technology such as software/hardware to process or and store information, and communication technology for transmitting information.

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## **Enhancing Knowledge, Innovation and Maritime Students Enterprise: The MAAP Way**

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**ABSTRACT** This paper describes the various knowledge, innovation and student enterprises that MAAP supported for the total development of the students. Specifically, this paper articulates the MAAP student services brought about by various programs with focus on: (1) Student Welfare Programs (2) Student Development Programs (3) Student Community and Research Involvements and (4) Student Value-Added Programs (Club and Organizations initiated, developed, implemented by students themselves). Basically, student services program in the Philippines are usual programs being provided in all higher educational institutions be it local or international. MAAP since its operation in 1999 had innovated various programs and bold initiatives on its student services as part of students' experiential learning in order to develop them into competent seafarers with character, leadership skills and strong devotion to service which the Academy's Quality Maritime Education and Training (QMET) stands for. This paper presents the various programs that were initiated, developed and implemented by either the top management or by the students themselves and draws analysis on its impact to the total development, academic success of students, performance and accomplishments within and outside MAAP both local and international. Emphasis is also placed on the students' performance in the licensure examinations both for deck and engine as well as the recognitions received by MAAP in the form of citations and awards provided by external organizations/bodies through student participation and services. These are positive indicators brought by various MAAP student services programs which are either directly or indirectly beneficial for the students' welfare and holistic development into competent seafarers, a key to maritime safety. On April 27, 2009, the National winner was selected from among the 14 regions in the country (out of 1,785 Colleges and Universities) with MAAP as regional winner (out of 165 Colleges and Universities) receiving the National Plaque of Recognition (Best facilities) with cash prize. Anyone reading this paper would see the uniqueness of MAAP student services programs not experienced or found in other universities and colleges

*Keywords:* Quality Maritime Education and Training (QMET), Student Programs, Student Services, Maritime Students Enterprise, Knowledge and Innovation

## Introduction

The establishment of Maritime Academy of Asia and the Pacific (MAAP) in January 1999 realizes AMOSUP dream of a world-class academy that promotes academic excellence in the maritime field. MAAP provides various program and services to its midshipmen for them to be responsible, competent, and consummate in their respective profession and be the Philippines' pride. MAAP establishment partially meets the increasing demand of both local and foreign shipping companies for a well disciplined, competent and highly qualified deck and engine officers. The academy ascribes to the standards set by CHED and the STCW' 95 as amended in 2010 popularly known as the Manila Amendments. It is now making a giant leap forward by committing itself to the noble purpose of producing graduates who rank among the world best! MAAP offers full scholarship grants for a Baccalaureate degree in BSMT, BSMarE and BSMTE ( Dual Maritime Course, 2006-2012)to qualified applicants selected nationwide through competitive qualifying entrance examinations. Other benefits include free board and lodging, fleet training, discipline and extra-curricular activities that enhances midshipmen's mental, emotional, social and physical development, the use of the state of the art equipment and facilities and modern instructional methods utilized by world-class maritime institutions, insurance and leadership training and exposures. It undertakes the grants with sponsors represented by reputable shipping companies who provide midshipmen with ready-available job opportunities aboard sponsoring company vessels. MAAP journey to excellence is steered by a governing board form the Associated Marine Officers' and Seamen's Union of the Philippines (AMOSUP), the private sector, Danish Shipowners' Association (DSA), Norwegian Shipowners Association (NSA), Japanese Shipowners Association (JSA), All Japan Seamen's Union (JSU), International Transport Workers Federation (ITWF), International Maritime Employees Committee (IMEC) and Filipino Association of Maritime Employment (FAME).

The academy's total MET system molds each midshipman into a whole and achieving person with national and international relevance. This is in line with the MAAP vision-mission to wit: "*MAAP envisions itself as the leading institution of excellence in outcomes-based maritime education and training in the Asia-Pacific region and beyond.* MAAP provides quality education and training to midshipmen/trainees in order to develop competent seafarers who shall possess the character, knowledge and skills necessary for the successful pursuit of a progressive maritime career. If Catholics have a Bible and Muslims have Koran, the Academy has its own Bible, which is the Midshipmen Fleet Regulation Manual (MRF). The said Midshipman's Manual, which embodies the Academy's ideals, and mission serves as the student's a guide as it contains the contract that binds the midshipmen to MAAP. The 4<sup>th</sup> Class students are provided with a pamphlet called 4<sup>th</sup> Class development system. They are guided by a motto "*Virtus, Fides et Disciplina* and follows a Code of Honor to wit "*We Midshipmen do not lie, cheat, steal nor tolerate among us those who do*". The manuscripts become the only bible on how to run the lives of the midshipman and let them embrace the regulations without hesitation

and with strong faith in the capability of MAAP in molding them to become a person.

MAAP articulates the standards of character and advocates services. These standards or principles are one of the fundamental bases behind the academy's MET programs. It is within the context of these programs with goals and values, that MAAP enables the midshipmen to see for themselves, the possible involvement with the larger community which they can continue doing even after they finish their studies in the academy. The option for community participation and contribution, and the sense of social responsibility are the outcomes of relevant higher education of which MAAP would like to develop in each of the midshipmen. Vadm. Eduardo Ma R. Santos, AFP (Ret), who is an advocate of student services, says:

*It is through MAAP participation in these worthwhile programs and activities that the midshipmen are being prepared for wholesome home and family life, for adequate maritime professional formation and for practical expression of Filipino values and humane ideals through services within and outside MAAP.*

The philosophy behind the academy's MET academic programs is essentially the same viewpoint behind MAAP student services programs. The midshipman is developed holistically.

In MAAP, student services within or outside the academy is reaching out to a group or groups of people to achieve its goals of carrying out expected tasks or responsibilities with the following opportunities: (1) an opportunity to carry out a duty or duties expected by the academy, other agencies or institutions wherein MAAP has established linkages for services to the community, society or the maritime industry in general; (2) an opening to exercise just conscience for it is a blessing and a grace to be developed as a refined person; and (3) a chance to go beyond self and selfishness. This is a prerequisite for relevant practice of the profession, a mark of higher education. It must be noted that a truly educated and competent seafarer is not measured in the number or kind of degrees or ranks one has acquired or gained, rather a highly educated and competent seafarer is a man for others and is tasked to ensure safety of life at sea.

Methods of data collection includes: observation, interview, internet search and content analysis of the minutes of the meetings, DRES/ERO reports and other unpublished documents.

This paper is organized with focus on the performances brought about by the following: *Student Welfare Programs and Services, the Student Development Programs and Services, the Student Community and Research Involvements and the Student initiated organizations and services within and outside MAAP for the last fifteen years (1999-20014)*, with emphasis on its development impact to students and its international relevance. Emphasis is also placed on the students' performances in the PRC licensure examinations both for deck and engine as well as the recognitions received by MAAP in the form of citations and awards provided by external organizations/bodies through student participation which are positive indicators brought by MAAP student programs and services. In general, the paper presents the development impact of the various programs and services to students,

which are reflected on the holistic development of students, performances and accomplishments within and outside MAAP both local and international.

## **Student welfare programs and services**

### *Student Selection, Admission and Retention Program*

MAAP ensures implementation of quality selection and recruitment system both for student applicants. In accordance with the academic standards it has set for itself, MAAP through its Board of Admissions reserves the right to select the students for admission. In general, admitted students are those with qualities of character, intellect and personality appropriate to the BSMT, BSMarE and BSMTE programs that MAAP offers. In order to ensure that only the best are selected to become midshipmen in MAAP, prospective midshipmen have to undergo battery of written tests (IQ, English, Mathematics, Psychological and Aptitude tests), a panel interview, medical and physical examinations and a one-month Indoctrination and Orientation Period (IOP). In 2004 and 2005, 100 of the probationary midshipmen undertook the one-month IOP whereas the other 50 incoming cadets underwent the two-month Academic Ramp Program with the De La Salle University (DLSU). Initially, MAAP is only getting 150 applicants regardless of the total number of applicants/examinees. In 2006, starting with Class 2010, MAAP increased the number of its intakes to 221 to address the requests of shipping companies for more sponsored cadets. From the initial 538 applicants in March 1999 for the search for Class 2003, the number of applicants/examinees increased to 5,700 in AY 2005-2006 for MAAP Class 2009. Still the number of applicants admitted for the IOP is only 150. In 2007, there were 7,014 applicants for the Class of 2011, but only 252 (3%) were admitted for IOP. This program contributes to the welfare of the students as they are assured of a good environment wherein all their schoolmates/ co-scholars whether upperclassmen or subordinates are physically, psychologically, morally and mentally of high level. From 2008 to date, there are more than 10,000 applicants for MAAP scholarships with MAAP only selecting the top 5% or 500 students yearly.

### *The Academic Ramp Program (ARP)*

Academic Ramp Program (ARP) was initiated at MAAP, based on the recommendation of the study conducted by the Warsash Maritime Center to develop an academic ramp in the form of a model course or courses covering basic math, physics and other relevant subjects necessary to undertake maritime training in accordance with STCW standards and for possible adoption by the IMO. The International Maritime Trust Fund (IMTT) considered this recommendation. ARP was granted to the Philippine Maritime Foundation (PMF) and was developed and pilot-tested by the De La Salle University (DLSU) among MAAP incoming students. Academic Ramp program (ARP), a 2-month refresher course, aims to “*ramp*” the students knowledge in Math, English, and Physics to the level that will equip them in

the long run to be qualified as senior officers on board sea vessels. This program was pilot-tested among randomly selected 50 students from the incoming 150 Class 2008 students of MAAP on March 29 to June 2, 2004. The following year, in 2005, ARP was again implemented among selected 50 students in MAAP along with that of other maritime institutions. Based on the result of the study conducted by MAAP, the ARP is effective. In 2006, Because of the said findings of its effectiveness, MAAP extended its one-month IOP program in Math and English to a two-month ARP with additional course in Physics. Moreover, MAAP shared its ARP curriculum to other maritime schools like PMMA, JBLFMU and UC for them to better prepare their entrants to the challenges of being maritime students. The 2-month ARP is being implemented from 2006 to date before the ARP students are recognized as 4<sup>th</sup> Class cadets in simple ceremonies.

### *Foster Parent Program*

This was launched on July 19, 2004 for the midshipmen who are from Luzon particularly those coming from the Visayas and Mindanao Island. Sixty- two families from the town of Mariveles participated in the event while 94 students signified and showed their appreciation for the program. The program is a success that while some families annually gets only one midshipman for their respective families; several others took as many as 5 midshipmen that the number of midshipmen did not cope up with the demands. More families from Bataan showed interest on the program that a second program was held last Aug 14, 2004. Thirty-six families attended the program and 57 midshipman accepted their new adopted fathers and mothers. There are still other families who would like to share their homes with the midshipmen but the Academy could only provide a limited number since the 4<sup>th</sup> classmen are not allowed to go on leave. The main purpose of this program is for the midshipmen and their families who come from far places to have a place to stay during the graduation ceremony and to have someone who will take the place of the biological parents whenever there is an activity inside the Academy in case the biological parents cannot attend. The parents in every briefing of MAAP President are reminded to treat their adopted children as foster sons or daughters and not as guests as the MAAP cadets are trained to serve and not to be served. Every weekend, visitation is allowed to upperclassmen. Hence every Saturday and Sundays from 8 to 5 pm, MAAP is open to all foster parents of upperclassmen to visit and bring food to their foster children at the MAAP campus. From 2004 to date, there are more or less 300 individuals who have volunteered to become foster parents.

### *Academic /Research/Communications Facilities Improvement Program*

Hands-on training must complement the knowledge disseminated in classrooms in order to enhance learning. Towards this end, MAAP has state-of-the-art facilities. It has a simulator center with the most modern Full Mission Bridge Simulator in the country today, a live GMDSS laboratory, a Computer laboratory, 4 LabVolt

training systems for refrigeration, fluids, EMS and IPC, Electrotech Lab, a 5,020 DWT dedicated training ship, a firefighting complex, the Pier facility for T/S KFO, the Vessel Training Center consisting of an integrated bridge system, Fire Fighting Center, the gymnasium, a website, a speech laboratory, and other modern facilities. MAAP's Sea Survival Center at the Pier, consists of an enclosed lifeboat on a Free Fall Davit, Fast Rescue Boat and Conventional lifeboat. Other new facilities are: (1) the Chemical Product Tanker Simulator (CPTS) (2) Seamanship Laboratory, (3) Actual Chemical Tanker Simulator, (4) Full Mission Cargo Handling Simulator (Oil, Chemical/Product, LNG, LPG), (5) Ship's Bow with three (3) Cargo Holds (All deck machineries and Ship's Crane), (6) Computerized Language Center, (6) Acquire Dynamic Positioning Simulator, (7) MAAP Parade Ground, (8) MAAP Dormitory, and the (9) MAAP JSU-IMMAJ campus, which was inaugurated in February 2009. This new campus can accommodate additional 500 sponsored IMMAJ cadets. In year 2004, the Library has 9,009 volumes, an increase of 7 % from 8,385 volumes in 2002. MAAP has 121 volumes of educational videotapes and 90 volumes of educational CD-ROMS. To date , this 2015 , MAAP has over 10,000 volumes of books at the Library. Moreover, the installation of computer and network systems widened access to modern approaches to higher education and linkage with the world. In 2004, MAAP upgraded internet bandwidth from 64kbps to 128kbps. Since December 7, 2007 MAAP has increased its bandwidth to 1mbps. A firewall system (Network/Internet security) for the security purposes of MAAP network were also provided. This state of the art technology has been instrumental in many research activities and in making innovations on course developments, teaching methods and other academic purposes. At present, the Academy has 293 computers from 250 computers in 2005, an increase of 17% and all are Internet ready. Since August 6, 2005, MAAP has changed its VSAT microwave link to fiber optic leased line linked to Manila to ensure fast and convenient communication both for the recipient and the receiver of the message. Likewise, a landline both for Bataan and Manila had been installed in addition to a public phone located at the students' dormitory. Mailing services either ordinary mail or via LBC is also made available to the students. Each team of students have been allowed the use of tablets for research in addition to the availability of study room with internet ready computers.

### *Accommodations, Health/ Medical and Nutritional Programs*

MAAP recognizes good health as an essential factor to learning. Midshipmen learn better and faster under the most suitable medical and physiological conditions. Hence, MAAP with an Infirmary consists of a regular physician and nurse, extends free medical and other services. MAAP with an accredited AMOSUP Hospital in Manila, Cebu and Iloilo, takes an active role in the promotion, protection and maintenance of good health among the midshipmen. Continuous medical and health services are provided to faculty, staff and midshipmen. To ensure that all MAAP personnel and midshipmen are physically fit, physical examination, laboratory screening and drug testing are conducted annually. Lecture on sexually transmitted diseases (STD) were also accomplished as information drive campaign.

Since January 2002 to date, all midshipmen were subjected to 3-doses of hepatitis B vaccination. All sponsors are therefore assured of physically fit midshipmen on board their vessels. Food services and Berthing facilities are provided free to all MAAP students. MAAP midshipmen use Academy –issued beddings and enjoy their meals free of charges. An Academic nutritionist looks after the well-being and nutrition of midshipmen through carefully designed meals and balance diet. All MAAP midshipmen stay quartered as required by the fleet system and devote their time both for academic and the disciplinary systems. During their shipboard apprenticeship training, they either stay onboard their sponsoring vessels or onboard the T/S Kapitan Felix Oca for the whole duration of shipboard instruction and other related activities. A slop- chest is also available wherein the upperclassmen may buy snacks and other personal needs, chargeable to their student accounts every end of the semester.

### *Weight Control Program*

This pertains to weight loss and weight gain program for students. The weight reduction program for the overweight midshipmen is one of the concerns of this program. It does not only aim to reduce weight but to properly tone the body into a much more desirable figure. Through regular road runs and calisthenics are required to the whole fleet, extra effort of burning fats is mandatory to all overweight midshipmen to meet the prescribed weight. Fat burning exercises such as walking, swimming, cycling, running and muscle strengthening exercises are some of the fat burning strategy. Meals provided to the students are also measured, less for the fat midshipmen and more for the thin midshipmen. There is a prescribed weight for all seafarers onboard the vessels. Hence, for the student welfare who will be employed by their sponsoring companies, MAAP ensures that its students are aware and trained on how they could properly control their weight.

### *Fleets Valentines Hop Program*

This program conducted very year (February) has propelled the upper-class midshipmen (1<sup>st</sup> Class and 3<sup>rd</sup> Class) to be the best Romeos to their girlfriends and new Friends at the MAAP swimming pool area. Traditionally, the hop is conducted for the welfare of the students as it is a venue for them to break the monotony of the routinary activities in the academy, to meet new people, to enhance the way they carry themselves and their manners in a social gathering, to interact with students from other schools and to explore the virtues and norms set by cupids. The midshipmen escorted their sweethearts and some took the excitement of meeting new ladies unfamiliar to them from SOFTNET Balanga, Asia Pacific College Balanga, SOFTNET Mariveles, PUP and BPSU to be their dates in the said occasion. The night turned out to be a rendezvous of many hearts while the sweet music played and serenaded them. The fleet also has a tradition that is passed from class to class. This is the playing of the Maydn's girl song to tell all the ladies how precious they are to the midshipmen fleet and how thankful the midshipmen for their presence. Similarly the Alma Mater Song "*Cradle of Destiny*" is sung to signify midship-

men's loyalty to the academy in all their journeys. Also on the same night, the King and Queen of Hearts among the lovely pairs are selected.

### *Alumni Relations Program*

This program is for MAAP graduates and is aimed to unify, encourage, and gather feedback on the status of alumni graduates (their whereabouts, their status summary by rank, license, per class, per department and per shipping companies). The program also determines the possible contributions and services of alumni beneficial for the welfare of students at MAAP. The alumni conduct services to 3rd cadets to give practical advise and share their actual experiences on board so that the first timers cadets who will board the international vessel for their Shipboard Training or Apprenticeship are better prepared. Some of the practical advises are as follows: things to bring on board, the culture on board, difference of a mixed crewing from a homogeneous crewing and other expectations. Some alumnus also renders their services free of charges during their vacation or spare time. Website is also designed wherein the alumnus can exchange opinion and experiences for collaboration on alumni related projects and activities as well as possible involvement with MAAP student activities. A statistic web forum is available. The MAAP Alumni Association with MAAP President as adviser is well organized. It has the articles of incorporation and by laws and some policies and procedures. It also initiated an official guide on wedding ceremonies and traditions for the alumnus, file of chart of accounts of financial statements and keeps some photo documentations of activities and events.

### *Simulator Familiarization Program*

In line with MAAP President Instruction that MAAP equipment should not be for display only, rather it should be utilized as much as possible by all upperclassmen students during their spare time for the efficient and cost-effective utilization of the equipment. Hence, there is a programme and schedule for all upperclassmen that are not part of the curriculum but just additional services to students for them to be thoroughly familiarized on the use of simulator. This is one of the unique programs not being exercised in other maritime schools because of the cost of not less than Php 15, 000 (\$350) each for the training using the said equipment. MAAP is an accredited PRC assessment Center for practical examinations. Basically all maritime graduates are required by PRC to undergo 5 –day training course on SSBT for deck and ERS for engine prior to their practical examinations to be conducted by PRC. Hence the simulator familiarization program is an add-on service provided to the midshipmen free of charge that prepare them to the practical exam (30%) required by PRC in addition to the theoretical exam (70%). With this value –added services, all MAAP cadets are provided case scenarios on how to rectify problems mechanically. Hence, all MAAP graduates passed the licensure examinations with flying colors. The feedback received by MAAP from its Alumni is heartwarming. Most of them say that the practical examination (30%) is the easiest part for them.

They find solving case scenarios using simulator as enjoyable as it was like a computer games for them.

## **Student Development Program and Services**

### *Physical and Character Development Program (Semi-regimented Training)*

The system observes a chain of command, delegation of work, execution, training and development in their entire stay at MAAP. The midshipmen are organized into a regiment where they follow the chain of command i.e. the leaders are responsible for everything that their unit does or fails to do. The leaders are rotated every semester to give everyone a chance to live and learn leadership. Parades, sports and cadet activities are conducted using the regimental organization. All midshipmen live inside the campus and are allowed only four (4) home leaves during the first year. They follow a strict daily routine starting at 5:00 in the morning up to 10:00 at night. There is a class system where seniority is observed between classes and the most junior midshipmen are the least privileged. However, there is no hazing because physical or verbal contact between the plebes and the upper classes is allowed only during formations and official activities. Rules and regulations on sexual harassment are strictly observed. They adhere to an honor system that does not allow cheating, stealing or lying. All of these are designed to instill discipline, develop character, enhance leadership traits and make each graduate true officers, gentlemen and ladies. A naval ROTC unit has been established in MAAP. At present, there are 18 tactical officers responsible in handling all midshipmen affairs. Upon graduation, midshipmen are commissioned as reservists with a rank of ENSIGN in the Philippine Navy. Starting with the class of 2003, the MAAP graduating class undertook the AFP battery test for Philippine Navy commissionship. A memorandum of agreement (MOA) has been signed to expedite the commissionship of graduating MAAP midshipmen. For three consecutive years, MAAP Batch 2003, 2004 and 2005 topped the over-all academic excellence for the 2- month Summer Shipboard Training (April to May) provided by the Philippine Navy Training Center in Sangley Point, Cavite. MAAP Class 2005 gathered the top 1 to 29 posts beating other students from other maritime schools like PMMA, etc. during their time. Starting 2006 to date, MAAP team considered in the Hall of Fame is no longer ranked with other maritime schools to provide chance to others to excel and win. On February 2, 2013, MAAP also Champions the National Annual General Tactical Inspection (NAGTI) by the Naval Reserve Command (NAVRESCOM) during the inspection in the field of general administration, evaluation of commandant, arrival honors, ceremonial parade, inspection in ranks, close order drill, theoretical and practical in map reading, first aid and weapons, semaphore signaling (sending and receiving), flag identification, knot tying, line throwing, raid/ambush scenario and comprehensive exam in military science 1 and 2 , with 946.255 points out of 1000 total grade MAAP won by inch against De la Salle University, scoring 944.065 and followed by the Visayan Maritime Academy Global College

### *Instructional Materials and Curriculum Development Program*

In line with MAAP's direction of raising academic standards, the academy created this program to initiate and oversee the systematization, standardization and modularization of the BSMT, BSMarE and BSMTE academic programs. The program sees the development of an interactive pedagogy in the tertiary level. All the academic subjects as well as training courses being offered in MAAP were manualized in accordance with IMO standard and QS Policy Manual. These manuals are being periodically evaluated and revised to conform with the current standards in maritime education and training and ensure that the students are provided the knowledge and quality learning for their mental development. Starting 2014 to date, the manuals have been transformed into outcomes-based learning with student centered discussions opportunity inside the classrooms.

### *Shipboard Training Program*

While aboard, midshipmen actually live on the ship, going ashore only during authorized shore leaves. They perform all the duties required of the crew from the ordinary seaman/wiper to 3<sup>rd</sup> Mate/4<sup>th</sup> Engineer. All midshipmen accomplish their ISF Training Record Book. In 2003, following the new curriculum scheme (2:1:1), MAAP Class 2006 boarded the ships for a continuous period of one year. MAAP is the only school in the country that guarantees a year's actual shipboard training within the 4-year course. Shipboard training are either conducted in the sponsors' vessel or at AMOSUP Training Ship Kapitan Felix Oca, a 5,020 ton dedicated training ship to ensure that the cadets are properly trained and fully- developed as an apprentice in a full- year. Hence MAAP is the only maritime school in the country that entails the said program a full year, 365 days aboard the ship for all its students. To date, 100% of MAAP midshipmen are sponsored by 40 shipping companies and cannot even supply the demands of the sponsoring companies.

### *English Computerized Learning and Pronunciation Program*

MAAP acquired new software called English Computerized Learning Program. This program started on November 21, 2005 with the purpose of developing the pronunciation capability of MAAP community. MAAP students observe the English Only Policy (EOP) in preparation for their employment on board international vessels with English as the medium of instruction. Pre-test was done to identify the weaknesses of the trainees who will undergo 60-hour sessions in the computer laboratory from 1730H to 2030H for the completion of the sessions with 52 different phonetic sounds to accomplish. Once accomplished, the trainees are required to take the post-test exam for the evaluation to be made by the Manila Times Learning Institute.

### *Sports Development Program*

Every year, MAAP celebrates the commencement of MAAP Olympics. This was initiated to gear the midshipman toward the pursuit of excellence through sports development and physical activities where good fellowship, teamwork and athletic skills are developed and enhanced. . The opening always starts with a traditional parade by the 4 competing teams of the midshipmen (*Alpha Admirals, Bravo Buccaneers, Charlie Corsairs and Delta Dukes*) that corresponds to the teams of MAAP personnel (Red, Black, Gold, and White team) respectively. As part of the program, the midshipmen and MAAP personnel conduct their ounce of calisthenics, warm-up exercise that is usually done before engaging in any physical demanding activity. The highlights of the opening program include the Oath of Sportsmanship led by the Student Athletic Chairman of the inclusive year, the cheering competition that the four companies of the midshipmen fleet participated in, and the competition of beauty of the four gorgeous and stunning muses representing the four teams. The muses who represent the four companies are asked some questions to determine who will be worthy to be awarded as the best muse who doesn't only have beauty but with wit as well. The following games are competed annually: volleyball, soccer, chess, darts, swimming, rugby, sepak takraw, basketball, badminton, Table tennis and company run. All teams received a trophy, whereas the over-all champion received cash in addition to trophy. Likewise, after the awarding ceremonies of MAAPlympics and opening ceremonies for the next MAAPlympics, selected students with exchange students will step on the muddy firing range of the DND Arsenal to practice their arming and shooting skills. MAAP President VAdm Santos, 2LT Villa and 2LT Resontoc provided lectures with regards to familiarization and briefing both for M-16 and .45 prior to the live firing .During the D-day, they assisted in showing and coaching the cadets on how to handle and in the firearms correctly

### *Tri-Academy Athletic Meeting Program*

For the past years, MAAP had dual meet exercise with the PMA and PNPA separately but in 2006, MAAP, PMA and PNP conceptualized a tri-meet for them to compete in various sports. This will help minimize the cost and at the same time further develop the camaraderie among participants. This tri-meet program aims to develop friendship, to widen the horizon, to be exposed to culture, values and practices of other Academies. It also promotes leadership since sports is a good venue to exercise leadership and promote character development. It also aims to express sportsmanship and physical development among participating schools. Single round robin is used and the top two players will battle it out for the finals. Amateur ruling is used to most of the sports but professional ruling is applied to some sports like soccer (FIFA rule) and basketball (FIBA rules). Pointing system is the basis in determining the winner. For MAAP, some sports are left as slot but it will not be considered as a source of points. These sports are: Boxing, Wrestling, Karate and Judo. The following sports are also played: Basketball, Volleyball, Soccer, Bad-

minton, Taekwondo, and Table Tennis, Chess, Wrestling, Judo, Karate and Boxing.

### *Student Exchange and Cultural Relations Program*

As planned in 2002, in the context of nationalism and global education, opportunities for institutional/international partnerships were made available for midshipmen and faculty/staff like a student exchange program. From 2004 to date, selected midshipmen were sent to MTC Japan for the student exchange program. These midshipmen stayed in Japan for six (6) months familiarizing themselves with Japanese maritime technologies and cultural backgrounds. On the other hand, two batches of Japanese studied in MAAP for six (6) months to learn about the midshipmen's training and education as well as the Philippine culture. Moreover, MAAP initiated programs that bolster midshipmen development programs. In 2004, MAAP offered the Computerized English Proficiency Course to its graduating students and Philippine sponsored students from Japan. Likewise, Nihongo was offered to Japanese sponsored MAAP midshipmen. In 2013, 6 MAAP scholars who graduated grade 10 and about to be admitted at MAAP for the BSMT or BSMarE Course have availed the \$50,000 scholarship grant for a grade 11 and 12 studies in Incheon National Maritime High School in South Korea as pilot K to 12 students. The 5 students arrived in MAAP Bataan to pursue the collegiate maritime studies.

Moreover, to enhance work and personal ethics inside and outside the Academy, Exposure to international conferences / trainings and symposia were made available to midshipmen to instill expertise and confidence among them and eventually expose them in hosting international conferences (2004 IMEC, 2005 AMETIAP, 2006 ANSUP, 2007 ICERS, 2009 IMEC, 2011AMFUF, 2012 and 2013 various Conferences, 2014NI Command Seminar, 2015 GlobalMET) in MAAP.

### *Leadership Development Program*

This program offered to all cadets is aimed at developing capabilities of midshipmen in both the followership and leadership dimensions. They get exposed to varied situations and scenarios that develop such abilities as: taking initiative, thinking win-win, appreciating differences, acting pro-actively, setting the right example, seeking responsibility and taking responsibility for their actions, being morally and physically self-disciplined, bringing initiative, communication skill and decisiveness to their leadership tasks , exercising their social radar and developing self awareness. The final products are developed students with a fine mix of three intelligences: IQ (knowledge), EQ (emotional) and FQ (financial) which is the objective of the program.

## Student Community and Research Involvements

It is believed that the academic reputation of MAAP depends on the quality of research and community outreach activities conducted not only by its faculty/staff but more so by its students with impact to the lives of the people in the community and the maritime industry in general. MAAP placed special emphasis on student active involvement on research and extension services as part of their total development. MAAP formed MAAP Research and Extension Services Circle (MRESC). This MRESC is composed of volunteer students who belong to the top echelon of the various class levels who are encouraged to conduct at least one research activity or project that would involve interested corps of midshipmen as part of their extracurricular activities. To prepare MRESC members with the challenging and exciting task, the DRES (now ERO) in coordination with Academics Department conducts seminar-workshops and encouraged the members to submit research proposals for presentation in international conferences. The MRESC are encouraged to do research in line with MAAP President call for Maritime Research networking. The members hope to link with other maritime schools for a research output that has a national impact for enhancement of MET. To date [starting 2014], the Department of Research and Extension Services (DRES) tasks has been transferred to the Academics Department being handled by a research coordinator and an extension services coordinator who are faculty members. DRES becomes External Relations Office or ERO.

### *On Research Involvement*

Students have presented and/or published papers in national and international forums with commendations and appreciation from the international delegates. MAAP Midshipmen/women 1CI Javellana and 1CI Tolentino (Class 2005) were highly commended during their paper presentation in the 16<sup>th</sup> International Conference on Maritime English Conference (IMEC16) in 2004. MAAP Midshipmen 1CI Inong and 1CI Odal (Class 2006) were awarded as the Best Paper Presenters during the Association of Maritime Education and Training in the Asia and the Pacific (AMETIAP) Conference 2005. On the other hand, 1CI Anthony Legaspi and 1CI Philip Albert Francis Inong were named as regional finalist from a long list of 22 nominations from the 12 Higher Educational Institutional participants in Region III. First Class Inong along with other 4 winners from different institutions advanced to the National Search of the 2006 Ten Outstanding Students of the Philippines (TOSP). The awarding was held on July 14, 2006 in Malacanang with President Gloria Arroyo as GOH. Recently, in 2007, 1CI Eslita and 1CI Copiaco were appreciated for a very well presented paper during the 8<sup>th</sup> International Conference on Engine Room Simulators (ICERS8) in November 2007. Since 2008 to date, MAAP students are always represented at TOSP and other search for outstanding students and always made it on the top ten students of the Philippines. On Sept 23-25, 2011 during the National Seafarers Day held at PhilamLife Building in Manila, 1/CI Michael Cullen Esplago is included in the 10 Outstanding Students of the

Philippines, selected among the hundreds of participants nationwide. Others like 4/CI Milton Klark bagged the silver medal in the Filipino Oratorical Competition against 24 competing schools with theme “Marinong Filipino : Lakas ng Pagkaka-kaisa”; 3/CI Mark Daniel Sampilo as 5<sup>th</sup> place in the Art Competition and 1/cI Rene Anjihilo Jose who competed in the English Oratorical Contest

### *On Community Involvement*

The various extension services programs (*Health and Sanitation, Environmental Care and Protection, Career Guidance Program, Computer Literacy Program, Education and training, Book Donation Program* etc) are participated in by MRESC, MAAP student organizations/clubs and the entire Fleet of Midshipmen either voluntarily or as per request of external agencies.

### *On Health Program*

Health program includes first aid training, feeding program, medical/dental mission and bloodletting. MAAP students assisted in feeding activities in the community, provides lecture on first aid. They also assist in medical/ dental missions and gift giving to indigent residents in Mariveles Bataan. Every year, MAAP in collaboration with its partners—TOTAL and LIQUIGAZ provides Christmas cheers to the less fortunate children of Sitio Marina and other selected areas in Bataan. Aside from the Jollibee meals and school supplies provided by the oil companies, MAAP provides the tents, chairs and sound system as well as other manpower. The students facilitated the games and activities in the party for the 200- 300 children. The students gathered used clothing, bags; shoes etc from the midshipmen, faculty and staff. They also solicited funds for the prizes and gifts for the children. Every 6 months, MAAP midshipmen and personnel donate blood to the Philippine National Red Cross (PNRC) and Veterans Memorial Medical Center (VMMC) thereby, helping save lives of people in need. VMMC started their project in 1989 and reached MAAP in August 2003. Every year, the PNRC provides some lecture on the dos and don'ts of donating blood to the MAAP community. From 2003 to date, a total of 150-233 bags of blood are contributed by MAAP every month. With this program, MAAP received a plaque of appreciation, Sandugo Tandang Sora Award and Gawad Papuri from various agencies namely PNRC, Philippine Department of Health and Veterans Memorial Medical Center.

### *On Environmental Care and Protection Program*

Part of the training is developing in every cadet the love for the marine environment and this is done regularly. The MAAP cadets jogged down the road to the training ground in Marina Beach early 0600H in the morning to clean the surrounding shore. Previous years, residents around the Sitio Marina had produced so much garbage as they are thrown to the sea. Now, it has been observed that MARINA is considered as one of the well-maintained coastal area in Bataan as well as in the entire region as it is maintained by the Academy. The acts of the students in

cleaning the coastal areas made the resident nearby realized how shameful and wrongful they treat the sea. They are now contributing their part in preserving the Sitio Marina Bay as the beach become garbage-free. MAAP with all its student cadets annually supports the International Coastal Clean-up Day Celebration every September by joining various coastal clean-up drives in the locality. Midshipmen also engaged in tree planting activities. Likewise every year, MAAP cadets joined the NROTC units in the coastal-clean-up drives in various locations. MAAP cadets also take part in the Annual Brigada Escuela in the neighboring public schools (Marina and Alas–asin Elementary School), a few kilometers from the MAAP campus and helped in the cleaning of the schools. The said activity conducted by MAAP cadets served as a sample and eye opener to the children that they must also do the same especially that it is their own school that they have to take care and maintain cleanliness of the environment.

### *On Career Guidance Program*

Students also contribute to the welfare of the youth through the Career Guidance Program. Volunteer midshipmen motivate high school students to pursue college degree for their own future as well as encourage them to apply for the MAAP entrance examination for them to avail of the scholarship program that MAAP offers to its students. They also cited their experiences at MAAP as well as the programs and services received as MAAP scholars.

### *On Computer Literacy program*

The Computer Gaming Club composed of students called computer wizards conducts 2- day training at the MAAP computer laboratory every year. The beneficiaries are at least 25 participants coming from the communities who are trained and provided basic knowledge about Computer systems and basic computer operations and are familiarized with MS word, powerpoint and Excel. The beneficiaries are mostly from NGOs, and different barangays in Mariveles Bataan.

Because of the active participation and voluntary services of students during their free time, MAAP is making waves through its research, extension services and best practices on Maritime Education and Training (MET). This is reflected on the numerous recognitions received as follows:

- On July 23, 2015, MAAP is recognized with World Education Leadership for its education, leadership and teaching at Taj Lands End Mumbai India
- In May 2014, MAAP as an Honorary member of NRCP, Manila Hotel during the NRCP Convention and General Membership Meeting
- In March 2014, MAAP recognized by MARINA for its exemplary MET contributions
- On April 15, 2014, MAAP for the 2<sup>nd</sup> time was provided an NRCP grant for its research project with policy implications on the Manning Industry Productivity Gain Cycle and Emergent Industry

- In March 2012, MAAP as first maritime school ( out of 93 maritime schools) provided NRCP grant for its research project Challenges and Problems in MET from Maritime Stakeholders Viewpoints
- On August 17, 2011, MAAP recognized as an Outstanding ASIAN Research Leader during the Asian Conference on Academic Journals and Higher Education Research at the Grand Ballroom of the Pryce Hotel, co-hosted by Liceo De Cagayan University and CHED , Cagayan De Oro City Philippines
- In 2010 , MAAP as First International Roberto Padua Research Impact Award hosted by University of Northern Philippines , Vigan City
- On August 7, 2009 , MAAP received special citation for producing exemplary student and youth leaders during the 10<sup>th</sup> International Youth Day Celebration with theme” *Sustainability for MDGs* “at the University of Makati in cooperation with UNESCO, UNAP and UNYAP
- On April 17, 2009, MAAP was best in Student Services Program (Physical facilities) by the Commission on Higher education during the National Awarding Ceremonies, University of the Philippines. MAAP was regional winner ( out of 165 HEIs) on Jan 6,2009 for best in development and welfare program and Best in community and research development program
- In April 2009 , MAAP for best research management by Philippine Association of Research managers (PhilARM) , Aklan State University
- On Dec 8 2008, MAAP as third place national winner on best Human Rights Education best practices by the Commission on Human Rights (out of 27 Center for Human Rights Education (CHREs) in the country) at Colegio De San Juan De Letran in Manila during the First NFCHRE General Assembly cum Launching of Letran as Center for Human Rights Education in celebration of the Universal Declaration of Human Rights with Hon Eduardo Ermita , PHRC Chair and Hon Leila De Lima . CHR Chair as Keynote speakers and guest of honors
- On December 9, 2008, MAAP as first place national winner on Best Maritime Education and Training (MET) Research Practice during the 34<sup>th</sup> PAMI Convention and General Assembly , University of Cebu, Philippines
- On Sept 23, 2008, PAMI Luzon recognized MAAP with a trophy being the first place winner for the Best MET Research practice among maritime schools in Luzon at the Asian Institute of Maritime Studies (AIMS) in Manila
- In 2007, MAAP as regional nominee for the Best Research Program and Best Extension Services Program as recognized by CHEDRO3
- In January 2007, CHED recognized the MAAP Research Program along with other 47 HEIS in the Country at the PICC, Manila. MAAP takes pride to be included in the list of 48 HEIS considering that there 1, 785 Higher Education Institutions (HEIs) in the country.

These national recognitions received by MAAP were made possible because of students’ involvements on research and extension services which form part of the photo documentations and accomplishment report submitted by MAAP separately as its entry to various award giving bodies namely: World Education Congress, MARINA, CHR, PAIR, PAMI, PAEPI, NFCHRE, PhilARM CHED, PACUCOA and other call for entries be it local or international.

### *Student Value added Extra-co curricular and Non-Curricular Development Programs*

It has been said that a body without a skeleton can never accomplish its functions, same as an Academy that can never improve without organizations (within or outside MAAP) that promote the institution. There are a total of 23 organizations or clubs initiated, organized and established by the students themselves with their chosen faculty/staff as adviser with full support by MAAP leadership. The clubs aim to satisfy the social, emotional, spiritual and mental needs of the students. Further, it aims to enhance and showcase the talents, skills and abilities of the students through the different functions and programs of the club. The students are given the chance to express and pour out their souls, thus balancing their social life and academic life as well as their semi-regimental training. MAAP Midshipmen are encouraged by the faculty in-charge as adviser, based on their performance in interest groups, clubs, organizations and student publications. Co-curricular program enhances and reinforces academic skills of midshipmen, develops in them consciousness and sensitivity to civic and social responsibilities towards others and develops sportsmanship, leadership and organizational skills. At present, there are 9 academic organizations and 14 non-academic organizations with programs and services. The establishment of these students' organizations at MAAP is a clear manifestation of the support of MAAP management to various learning initiatives and opportunities that could broaden the knowledge and skills of its students.

#### *Extra-curricular or academic organizations*

Kamaya Point Board Club -A pen and a paper is the best weapon of this club. This club handles the official publications of the midshipmen fleet. It is composed of midshipmen /women who have God-given talents and passion in the field of journalism. These midshipmen have been selected through a rigid screening process. This club aspires to instill leadership potentials and proficiencies in English grammar through journalism writing. They assist the Academy in the production of souvenir programs like the graduation program and convention program. On October 28-30, 2006 during the ATSPAR III Regional Press Congress held at Wesleyan University-Nueva Ecija, MAAP students won 3<sup>rd</sup> place in editorial writing, 2<sup>nd</sup> place in photojournalism, 4<sup>th</sup> place in comic strip drawing and 3<sup>rd</sup> place in column writing. On November 13-15, 2007 at ATSPAR Region III Press Congress Competition , MAAP student won 1<sup>st</sup> place ( gold medal) in copyreading and headline writing (in English - Midn 1cl Lex Eslita and in Tagalog- Midn3/cl Bacasdoon ); 2<sup>nd</sup> place ( silver medal) in feature writing (Filipino- Midn 4/Cl Gust'I Magbanua) and poetry writing (Tagalog- Midn 3/cl John Jay Liguigan); 3<sup>rd</sup> place in column/opinion writing ( bronze medal) (English- Midn 1cl Lex Eslita ), and; 4<sup>th</sup> place in photojournalism ( Midn 1/cl Hardy Jimenez ) and editorial cartooning ( Midn 3cl Nicolas Dispo). For the over-all competition, Midn 1/Cl Lex Eslita ranked 5<sup>th</sup> on the individual highest pointer and MAAP was 4<sup>th</sup> place on the group highest pointer. On Jan 9-13, 2013, during the 12<sup>th</sup> Regional Higher Education Press Con-

ference with theme “*Responsible campus journalism in the new media technology*”, MAAP cadets earned awards through their hard works and knacks. In Filipino category, 1/CI Dyesebel Diaz won the 1<sup>st</sup> place in photojournalism while 3/CI Neil Gayatin marked the 8<sup>th</sup> and 9<sup>th</sup> place in copy reading/headline writing and feature writing respectively, 1/CI Carla Campananes covered the 3<sup>rd</sup> and 4<sup>th</sup> place in Feature writing and opinion/column writing while 1/ci John Mark Eumenda took the 7<sup>th</sup> place in graphic illustration in English Category. On Feb 12-14, 2013, 1/CI Dyesebel Diaz hailed as 9<sup>th</sup> best in photojournalism while the Kamaya point publication as 3<sup>rd</sup> best magazine, 6<sup>th</sup> spot as the best news page and 7<sup>th</sup> spot as the best feature and literature page in the 12<sup>th</sup> Luzonwide Higher Education Press Conference. As shown, from 2006 to date, MAAP is a consistent awardee in various writing categories.

***English and speakers Board Club***—This club is known to be the language of the sea as it promotes English proficiency and imposes midshipmen to use this language as per regulation of the Academy. It enhances the skills of a midshipman to improve their competency and proficiency in the English language and to maintain the Filipino English advantage over other countries with regard to the seafaring industry. This club is for midshipmen who want to learn how to debate and speak in front of the crowd. It contributes to English proficiency and critical thinking of a midshipman. This club is conducting a cross- training assistance with other debating societies outside MAAP that may further enhance the speaking skills of the midshipmen

***Math and Sciences Club***—this is a group of individuals dedicated to the enhancement of the thinking capabilities of midshipman. They conduct extra- instructions to those deficient in Academics and they organize Annual Mind Strugglers activity, a sort of a quiz to know who is the best when it comes to knowledge and facts. MAAP students got 2<sup>nd</sup> Place – Instrumentation Quiz 2005 and 2006 at the Philippine Trading Center (PITC). During the Maritime Week in Sept 2008, MAAP students won 3<sup>rd</sup> place in Maritime Quiz bee held at AIMS, Manila. On April 3-6, 2013, MAAP cadets bag championship title in the 26<sup>th</sup> National Physics Olympics sponsored by Philippine Physics Society 9PPS) at the Ateneo de Davao. The said Olympics was held in parallel with the 35<sup>th</sup> Annual National Physics Seminar-Workshop Convention and the 21<sup>st</sup> National Physics fair with the theme Physics and caring for the earth in the Specter of Climate Change. The Physics Olympics involved the application of physics principles and use of creativity in activities and contests .MAAP was proclaimed champion after winning in different categories. 1/CI Mario Adrian Oca amd 1/CI Dyesebel Diaz won 1<sup>st</sup> place in the super magnet category, 2<sup>nd</sup> place in the large barge and 2<sup>nd</sup> place in the paper tower while 4/CI Javier bagged the 2<sup>nd</sup> place in the egg transport category and 4<sup>th</sup> CI Bartolaba won the 3<sup>rd</sup> place in the paper airplane event From 2005 to date, MAAP students rank are improving from 3<sup>rd</sup> place to 1<sup>st</sup> place.

***Camera Club***—This is an organized group of midshipmen working to provide the Academy with enough pictorial requirements for all events and important purposes

for all the different departments in the Academy. Their purposes are to capture and gather all-important events within and outside the Academy's premises, as well as teach and instruct interested midshipmen on the usage of available equipment of the club. The club also conduct digital photography seminar. They are also preparing the first MAAP post card that will soon be available in National Bookstore outlets nationwide.

***Computer and Gaming Club (Computer Wizards)***—Members are known as the core of technological expertise that contributes to the fulfillment of the mission and vision of the Academy. It molds the skills of its members to become computer literate, highly competent and intelligent individuals in creating world-class seafarers

***Dialectic Club-*** Lights, Camera Action! This is the club behind the scene of every play presented in MAAP. It develops the skills of a midshipman in the filed of acting, singing, dancing and any means that is used in stage performances. This club aims to develop self-confidence and skill of a midshipman in stage performances. Its main project is the Annual Frolics Night for the 4<sup>th</sup> classmen and the 200<sup>th</sup> Night show as a tribute to the graduating class. This club conducts workshops for the enrichment of abilities of its members thus improving the beauty of each performance. The activity is open to guests, who are impressed and surprised with the cadets' performance considering that the cadets have no experience on theatrical performances

***MAAP ARTS and Crafts Club***—Production of art designs and props of different activities is the main objective of the club. Working to provide MAAP with artistically renovated designs required for all events and important purposes for all the different departments of the Academy. It enhances the talents and skills of midshipmen when it comes to artistic expressions.

***MAAP Technical Group***—Club in charge for the PA system, sound system and Lightings during parades and other special activities.

***Women Cadets Club***—This club conducts annual seminars and forum attended by all MAAP women cadets as well as available women alumni. They discussed issues on women working environment, kind of abuses and its prevention and true stories on board. Open forum provides them a chance to ask questions. Speakers of the seminar are the midshipwomen alumni of MAAP. The club aims to widen the knowledge of the midshipwomen on their job on-board. Thus it served as an eye-opener, it gave a bird's eye view and it added to the preparation for the life of a women cadet/seafarer. The establishment of this club was inspired by the EU-ASEAN Project on women seafarers wherein a research-led seminar workshop about women seafarers was led by the Seafarers International Research Center of Cardiff University Director Dr Helen Sampson and Research Associate Dr Jaime Veiga. Held at MAAP on June 2-4, 2004, and participated in by MAAP faculty and staff along with their foreign and local counterparts from other maritime institu-

tions, the MAAP personnel conducted the same activity and shared the knowledge gained among women cadets in the Academy. Hence a Women Cadets Club (WCC) is formed at MAAP. On October 14, 2004, the WCC organized a seminar-workshop and invited co-women cadets from other MET schools namely AIMS, PMMA and Dr. Yangas College. Aside from discussing issues, they also established the Women Cadets League among the participants and continue to communicate, meet and provide support to date.

### *Extra- Non- Curricular Programs*

Athletic Club Council - This is one of the busiest organizations in MAAP. It is considered as an assembly which governs all fleet squads or in other words, varsity teams and controls various sports activities held here in MAAP. It develops and officiates all athletic programs in the Academy and builds up sportsmanship and discipline among the fleet. Those chosen as members of the Fleet squads will have the chance to represent the Academy in different sports activities outside the academy. This club facilitates the opening Ceremonies of the MAAPlympics games and cheering competition. The council is also in-charge in providing student sports officials for the different sports. They are involved in a series of games within and outside MAAP namely: PMMA, NETC, Cabcaban National High School and a lot more. The Athletic Council consists of 11 Sports Clubs namely: Badminton Club, Sepak Takraw Club, Chess Club, Soccer Club, Volleyball Club, Table Tennis Club, Dart Club, , Swimming Club, MAAP Rugby Union Football Club (MAAP RUFC), Marathon Club and Basketball Club.

The MAAP- RUFC, with its members known as MAAP warriors, it is the first all- Filipino rugby team in the Philippines which was founded in August 2002 and sponsored by RJH Consultancy, HMR Group, Nomads Sports Club and W G & A Philippines. Mr. Rick Hartley and Mr. Murray Domb organized it after the former recognized the potential of some midshipmen as Rugby players. Mr Hartley is a consultant of RJH Consultancy, while Mr. Domb is the General Manager of the Nomads Sports Club, which promotes 2003 Rugby in the country. Both coach the MAAP-RUFC. MAAP garnered 15 awards in various sports competitions nationwide such as in Rugby, Marathon Club and Basketball. MAAP team competed with Brent International (BRENT) in a friendly match in October 2002 at the Nomads Sports Club. MAAP won for the two games played with scores 2-1 and 5-3 respectively. In, at the International Alabang Tens, MAAP Rugby Team won first place against NOMADS, and Alabang Eagles. MAAP Warriors became the 2005 PRFU (Philippine Rugby Football Union) Sevens Division League Champions. Tournament came as a preparation for the 2005 SEA Games (SEAG) and games held in Alabang Country Club and Clark Airbase in Pampanga. The next trophy was the 2005 Brent International Ten's JV Championship. MAAP also won the 2005 SEA Games Seven's Bowl Championship where the MAAP Cagers was undefeated in all the games in winning the title. Midshipmen ICI Bryner Ang of Class 2006 was the First -International Rugby player for under 19 against the Arabian Gulf and Singapore under 19's. He was one of the Philippine players for Rugby during the Sea Games 2005 and won first place in Club Category and he

also won 3<sup>rd</sup> place in Alabang Tens in February 2006. On January 19, 2007, 1Cl Ching won 3<sup>rd</sup> place during Sinulog Tens with a score against the Cebu Dragons and he also won 3<sup>rd</sup> place during the Alabang Tens Tournament in February 2007. Midshipmen 1Cl Marold of Class 2008 won the 2<sup>nd</sup> place during the International Fatboys Tens Tournament held in Clark Pampanga in 2008. Further in November 2008, MIC 1cl Genesis Mana won the Subic Sevens Rugby Tournament and garnered two trophies namely. Bowl Trophy and the Shield Plate Trophy. Although MAAP Cagers are competing against expatriates twice bigger than them, Rugby is still one of the popular sports at MAAP as the current number of full contact Rugby players is 50 and has a women's team for touch Rugby. (please check website : prfu.com., rugbyinasia.com/Philippines, wikipedia.org). All the awards garnered by MAAP rugby Club can be are found in *rugbyinasia.com*. A lady cadet of Class 2012 (Charmaine Joy Ranada) from MAAP was selected to form part of the PRFU Women's Volcano to represent the Philippines in the Asian Women's Rugby held in Laos. On September 7, 2008, MAAP Marathon Club members competed at the Subic Marathon Club, Out of thousands who competed, MAAP cadets made it to the top 100 posts in the finish line. Likewise, during the Seafarers Week Celebration with hundreds of participants, MAAP cadets joined the Takbo Marino at the 3Km category for male division with the top ten places all awarded to the MAAP male participants. Female cadet 4<sup>th</sup> Cl Elad won first place at 3Km [female] category. On August 23, 2002, the Basketball Club with members known as MAAP Cagers, notched its first exhibition game victory after Beating the Bataan Polytechnic State College with a score of 57-56 at the BPSC Gymnasium. The game was a close fight with MAAP declared the victor after the time run-out.

On January 25, 2013, MAAP stole the first runner up in the Universities and Colleges Athletic Association of Bataan Sports Competition. 1/Cl Jerlad Apalisok and 3/Cl Jeric Raymundo excelled in table Tennis Doubles ( Men) got the third place. The strengths of 1/Cl Mark Gerlad Miranda and 3/Cl Luis Miguel Liwanagan brought them to 2<sup>nd</sup> place in Badminton Doubles ( Men) 1/Cl Phoebe Mariko Arizo and 3/Cl Lian Lyle Arce secured the at utmost as they won in Billiards Doubles . The brilliant minds of 3/Cl Carlo Geloso and 1/Cl Neil Torres drove them to 2<sup>nd</sup> place in Chess while 4<sup>th</sup> Cl Jonathan Eliseo bagged the topmost spot. In group sports war, MAAP took the 2<sup>nd</sup> place in basketball to include the two in the seasons mythical five, 1/cl Rebbs Anuncio and 3/Cl Sam Plameras.

**Taekwondo Club**—The members are known as MAAP Jinns. Established in June 2011, the club aims to develop an individual not just physically but spiritually and emotionally as well as it is guided by its 5 tenets SMIPE (self-confidence, modesty, indomitable, perseverance and etiquette). **On Sept 18, 2011**, MAAP Taekwondo Fleet Squad or MAAP Jinns bagged 18 medals ( 5 gold, 7 silver and 6 Bronze medals from the different weight divisions) from 2011 Regional Taekwondo Championships at People's Center in Balanga Bataan. 1/Cl Gary Conoso led the glorious victory of the team against the different participants in region 3

**Body Building Club**—The members are known as MAAP Hunks. The objective of this club is to instruct, train and develop the midshipmen physically so that each

graduate shall possess the strength and endurance needed to be physically fit the Academy and shall be prepared for rigorous and strenuous work aboard the ship. A monthly monitoring activity is done to ensure a certain degree of physical improvement is manifested to each member. The club gives seminars regarding physical fitness so that each student shall be aware of their health and physical capabilities.

***Mountaineering Club***—This club is filled with adventures and fun that contributes to the enhancement of midshipman's knowledge about mountains and to encourage them to understand the problems encountered when it comes to mountain conservations. Among the activities conducted are tree planting and river rehabilitations projects

***Dance Troupe Club***—Composed of selected students who loves to dance and performs during intermissions in various MAAP activities. On Aug 29, 2011, MAAP Dynamics won the 5<sup>th</sup> place in the Maximum Groovity 7 dance competition against 19 university dance troupe participanta held at Ynares Sports Arena Pasig City .Regardless of the pressure s and nerves, the 12 midhsipmen led by Ens Cyrus Taclob , outshined universities and astounded the approximately 3,000 audience . Once again, on October 1, 2011, 16 midshipmen grabbed the 5<sup>th</sup> place in the Step Up Philippines 2011 against the 21 professional dance troupes around the country. The competition was held at the Filoil FlyingV Arena, San Juan City Manila. Despite the hectic schedule of activities inside the academy, the MAAP troupe had surpassed all the pressures and stresses to achieve the success, beating 17 professional dance troupes that made the huge crowd go crazy.

***Kamaya Choir***—Composed of musically inclined midshipmen/women who are dedicated to share their talents and to serve God during Eucharistic celebrations and other functions which involve music. This club upholds the Annual Songfest and the Fleet Battle of the Bands, which is a competition of music and talent among the Fleet's four (4) companies.

***MAAP Band***—This group is composed of the best musicians. They provide good music to various social activities. This club aims to provide its members the chance to hone their talents and skills in playing musical instruments while having a great deal of fun. On December 17,2005, MAAP Band was the over-all champion in the Battle of the Bands at the EPZA Mariveles.

***MAAP Christian Fellowship Club***—a group of born again Christians and religions united to have one mission and vision that is to preach the gospel as a great commission of the Lord Jesus Christ. This club conducts spiritual gatherings like the mid-week service, Saturday Fellowship and cell group ministries that somehow develop ones spiritual life for them to know their purpose on the world as helping ones problems through prayers and counseling. This club conducts seminars good for the spirit to develop friendships and brotherhood among the midshipmen fleet.

*Liturgical Club*—For the Roman Catholic, in charge of very week mass and special masses like Baccalaureate Mass, and other special occasions like President and Chairman’s Birthday, Christmas, and other occasions.

*MAAP Baptist Club (MBMI)*—established on October 27, 2004, with a sole purpose – to preach the gospel and make Christ known within the fleet.

*Youth for Christ* –for youth religious social gatherings within and outside MAAP

*Etiquette and Protocol Committee*—In charge of informing students of proper decorum during formal meetings and other activities

*Peer Counseling Club*- This club conducts annual seminar on peer counseling and emotional crisis management. Students are taught different strategies on how to deal with emotional problems, give proper counseling and deal with emotional crisis among their batch mates. Members are selected based on their aptitude and IQ test results from the entrance examination

*The Uniform Board Committee*—The club is established to give students the opportunity to deliberate on the standards in the selection of materials, design and tailoring of standard uniforms. Among the tasks is to determine the required uniform of every student and recommends on the possible changes and /or additional uniforms and accessories.

## Student Performance in the PRC Licensure Examination

MAAP is continuously monitoring the student performance every semester until the time that they graduate and take the licensure examinations.. From 2003 to 20011, the general result of percentage passing for the licensure examinations is 100% for BSMARE and 94% for the BSMT as shown on **Table 1 (in the appendix on page xxx)**. The national passing rate at PRC is 49%. This is a positive indicator that the various programs offered by MAAP had supported the academic success and development of its graduates.. MAAP ranked number 1 in terms of PRC ranking based on PRC for the examinations of MAAP for the past 6 years (2009-2014)<sup>1</sup>.

Philippines has a total of 2,080 higher education institutions, according to 2010 statistics released by CHED. According to the *Webometrics Ranking of World Universities*, the rankings are based on the performance of universities from all over the world based on their web presence and impact. Vis-a-vis other Universities, MAAP ranked 28 in the 2014 Top 100 Colleges and Universities in the Philippines in terms of: Presence, Impact, Openness and Excellence<sup>2</sup> .

## Conclusions

As shown, MAAP admirable led by its President through its various departments and divisions, initiates and supports innovative programs, projects and activities to

1. [www.finduniversity.ph-universities-ranking/maritime](http://www.finduniversity.ph-universities-ranking/maritime)

2. <http://www.localpulse.net/education/2014-top-100-colleges-universities-philippines-967/>

strengthen student services with development impact to its students and graduates. Various programs have been developed and implemented through proper coordination, cooperation and collaboration by all concerned departments and divisions in mutual respect, trust and common objectives and concerns for the students' welfare, academic success and total development. Likewise, MAAP students have been regularly exposed to greater responsibilities and various scenarios, in order to mold them in becoming competent officers of the maritime world.

It can be surmised that the solid foundation of MAAP graduates draws from a fine mix of technical knowledge and skills and the internationalization of emotional competence in various disciplines. Such character building activities are a function of the various programs and student services that focuses on the midshipmen's physical, intellectual, mental and moral development.

Hence, for the past 16 years, MAAP has established a notable degree of respect and appreciation from the international maritime community. They are aware of the programs being developed and implemented at MAAP and the kind of deck officers and engineers that MAAP has been producing from its students. Towards this end, more and more shipping companies have expressed their intention to sponsor more MAAP cadets hence providing opportunities to deserving Filipino students for a rewarding seafaring career on board the global fleet. MAAP continuous to pioneer in Maritime Education and Training towards a New Wave of Excellence for the total development of officers for the global maritime fleet.

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## APPENDIX 1

Batch	Department	No. of Graduates	No. of P R C Takers	No. of PRC Passers	Cumulative Percent of Passers
<b>2003</b>	Deck	68	68	57	83.82
	Engine	59	59	59	100.00
<b>2004</b>	Deck	64	64	61	95.31
	Engine	68	68	68	100.00
<b>2005</b>	Deck	70	70	66	94.29
	Engine	71	71	71	100.00
<b>2006</b>	Deck	67	63	61	96.83
	Engine	68	65	65	100.00
<b>2007</b>	Deck	55	47	46	97.87
	Engine	56	52	52	100.00
<b>2008</b>	Deck	47	47	46	98%
	Engine	52	52	52	100%
<b>2009</b>	Deck	54	54	47	96.3%
	Engine	48	48	81	97.91%
<b>2010</b>	Deck	54	54	81	94.44%
	Engine	83	83	80	96.38%
<b>2011</b>	Deck	64	64	60	92.79%
	Engine	85	85	91	95.79%
<b>T O - T A L</b>	Deck	376	359	342	96,26%
	Engine	374	367	367	100.00
	OVERALL	750	726	709	97.66%

Table 1: PRC Licensure Examination Results of MAAP Graduates 2003-2011



## **Improving Creativity in Collaborative Process: A Knowledge Model based on Communities of Practice in Organizational Learning Contexts**

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**ABSTRACT** This paper aims to build a theoretical framework by a literature review that is focusing on how a learning model based on Communities of Practice (CoP) can be useful in collaborative processes in organizational learning contexts. In the light of social approach to learning theories and knowledge management, this paper firstly will discuss: (1) learning as a process involving knowledge conversations between different types of knowledge such as tacit knowledge, explicit knowledge, individual knowledge and collective knowledge, and (2) creativity as a driver to the conversations between the different types of knowledge. (3) These points drive this paper to develop a knowledge creation model by discussing how CoP can be used to improve creativity in collaborative processes in organizational learning contexts. The point of departure for the learning model is the learning framework proposed by the theory of CoP. The learning framework provides a design dimension which can offer the organizational members scope for participation and engagement in the communities for facilitating learning as an identity change in the specific socio-cultural context of the organization.

*Keywords:* Creativity, Collaborative Process, Community of Practice, Organizational Learning

## Creativity in Organizational Learning

### *What (Where) is Creativity?*

What is creativity? The literature has shown that creativity generally involves the ability to offer new perspectives, generate novel and meaningful ideas, raise new questions, and come up with solutions to ill-defined problems (Runco, 2007). It has been viewed as the ultimate economic resource and as essential for addressing complex individual and societal issues that brings a growing numbers of studies on creativity in organizational contexts (Sternberg, 1999).

However, creativity is a highly contested concept. For example, Treffinger et al. (2014) identified previous literature reviews from which produced over 100 definitions for this word that indicates creativity is complex and multi-faceted in nature. Negus and Pickering (2000) suggest that creativity is one of the most used, and abused, terms in the modern lexicon. It comes laden with a host of meanings, connotations and applications that are regularly imported into a range of varying discourses, institutions and settings. However, we can simply regard creativity as involving the generating of novel and useful ideas (Sternberg, 1999). This is true for all cases of creativity, whether within science, art, engineering, politics, business, and so on (Runco, 2007). According to Sternberg (1999), the development of scientific thinking about creativity has followed a trajectory that: an early emphasis upon isolated individuals and their internal traits and capabilities, followed by a developing focus upon the interaction between the individuals and the environment. Based on this research shift, Zhou (2012) redefined creativity by considering ‘where’ as the following:

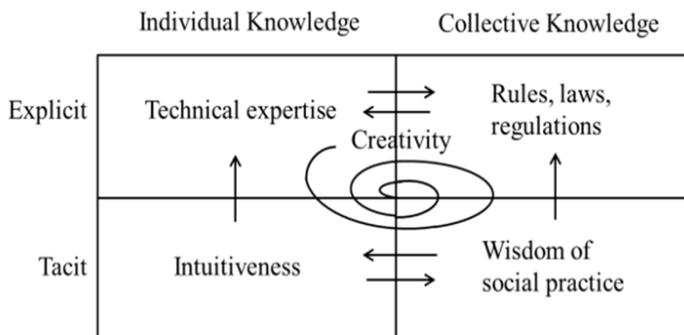
- Creativity in mind: as argued by “person (personality)” (cognitive or psychological) approaches to study creativity, any creative idea is generated from cognitive process in mind. The basic cognitive process (e.g., attention, perception, memory, information processing) and individual differences (e.g. intelligence, language, personality style) have close connections with creativity.
- Creativity in collaboration: understanding creativity as collaborative process beyond the individual by focusing on the interpersonal interactions, as one kind of social influences which can be found in the various evidence of collaborative effort that demonstrates collaboration involves an intricate blending of skills, temperaments, effort and sometimes personalities to realize a shared vision of something new and useful; or as emerging through dialogue and “being in relationship” that is seen as the dynamic interaction from a constructivist framework.
- Creativity in social system: social influences (e.g. social structure, economy, culture, religion, policy, community, organization, family) are taken into account. This is because social processes and structures represent such dramatic influences on creativity and they can support, undermine, or neither support nor undermine each other’s creativity.

Furthermore, two metaphors of “big c” and “little c” have been formulated by the literature (Zhou, 2012). The “big c” describes something that emerges as historically new within the broader culture. While the “little c” lies at the opposite end of the “big c” and thus refers to creativity in everyday life as people try to solve problem at work and at home or on the road in between. The “little c”, on the one hand, is closely related to learning based on its sense, because creativity could be seen as a way of learning by expanding what one knows and what one can do. On the other hand, it brings an underlying assumption that everyone can be creative and everyone’s creativity can be encouraged through an educational interference (Craft, 2005). This drives us to understand in the organizational context, ‘little c’ should be encouraged among employees in relation to the problem-solving contexts and collaboration processes in their daily working life.

### **Creativity Driving Dynamic of Knowledge Transformation**

The creativity approach to organizational learning, which we put forward through the paper, is to develop a knowledge model based on the socio-cultural aspect of learning in organizations. This means we view knowledge creation as a social process that motivates new ideas and innovations emerge between rather than within people (Paavola et al., 2004). The knowledge creation approach to learning indicates that creativity is imbedded in learning process; since creativity has been generally defined as developing new and useful ideas that means creativity may offer participants opportunities to shape new knowledge (Craft, 2005; Baumard, 1999). So in collaborative settings, learning and creativity go hand in hand.

The studies on tacit knowledge and explicit knowledge indicate learning happens in the transformation between the two kinds of knowledge, since the transformation involves learning activities through the engagement of learners (Paavola et al., 2004). Most literature regards tacit knowledge as more highly personal and harder to communicate or to share with others. It is deeply rooted in an individual’s experience, and it consists of schemata, beliefs, and perceptions stored so deep in the worldview of an individual that they are taken for granted (Paavola et al., 2004). In contrast, explicit knowledge is the type of knowledge that an individual has acquired mainly at school and university. Explicit knowledge implies factual statements about such matters as material properties, technical information, and tool characteristics. Thus, explicit knowledge can be expressed in words and numbers, and is therefore easily communicated and shared (Paavola et al., 2004). Furthermore, a knowledge-creation approach to learning conceptualizes learning and knowledge advancement as collaborative processes for developing shared objects of activity (Koskinen et al., 2003). Tacit knowledge acquisition and sharing in a project work context (Koskinen et al., 2003). Therefore, the interactions between tacit knowledge and explicit knowledge and between individual knowledge and collective knowledge have been emphasized, for example, in Baumard’s work (1999). This drives to develop a model that regards creativity could be a “spiral” growing from the junction of the four types of knowledge (Figure 1).



*Figure 1: A Knowledge Model for Creativity in Organizational Learning*

As the Figure 1 shows, there are four types of knowledge for understanding knowledge creation. Firstly, knowledge that is explicit and individual provides techniques that allow us to counter nets and traps. Secondly, through collective and explicit knowledge we achieve profound knowledge of a terrain, the environment, rules, and laws. Thirdly, knowledge that is tacit and collective is of the unspoken, invisible structure of a practice. Lastly, knowledge can be tacit and individual; where tacit expertise is complemented by “hard” technical knowledge - a sort of inimitable technical skills. In the developed model we think that creativity in the learning process is dynamic but not linear, and contains uninterrupted knowledge conversations between different knowledge types. The concept of back burning an idea is essential in the process of individual reflection and common engagement in collaborative learning settings.

In one word, creativity can be as the driver of knowledge, which is dynamic in organizational contexts. The above discussion also leads us to focus on the links between CoP and organizational learning. In every organization there will be informal clusters and networks of employees called as communities of practice, who work together sharing knowledge, solving common problems and exchanging insights, stories and frustrations and when appropriately supported by the formal organization they can immensely contribute being building blocks in creating, sharing and applying organizational knowledge (Craft, 2005; Wenger, 1998). Through this paper, we put forward the idea of how a learning framework based on the socio-cultural theory of CoP can be made use in the organizational context there by fostering informal learning in organizational context, which can build new knowledge.

## **Communities of Practice (CoP) and Organizational Learning**

### *Theory of CoP*

According to the social learning theory of CoP, learning is not just an accumulation of skills and information, but also a process of becoming. Taking the theory of CoP

as a point of departure we recommend that this socio-cultural learning theory can help in analyzing and evaluating the learning happening in the organizations. This means we fundamentally see learning as not only about gaining knowledge and skills but also about influencing the employees' identity in the socio-cultural context of the organizations. The theory of CoP can fundamentally be used to make learning more culturally significant and not just revolving around tacit knowledge thereby bringing creativity in the collaborative processes within the organization.

According to Wenger (2006), Communities of practice are formed by people who engage in a process of collective learning in a shared domain of human endeavor: a tribe learning to survive, a band of artists seeking new forms of expression, a group of engineers working on similar problems, a clique of pupils defining their identity in the school, a network of surgeons exploring novel techniques, a gathering of first-time managers helping each other cope (p. 1). CoP has its roots in the situated theory of learning, which is an alternative approach to the dominant cognitive perspectives on learning. Situated learning theory considers learning, not as a process of socially shared cognition that results in the internalization of knowledge by individuals, but as a process of becoming a member of a sustained community of practice (Lave, 1991).

All groups within the organization or an organization as a whole cannot be considered as a CoP just because it's a group of people. There are some vital elements that make a group a CoP, which are: the domain of interest that creates a common ground and a sense of identity; the community where the members engage in joint activities and discussions; and the practice where they develop a shared repertoire of resources in the form of experience, stories, tools, and ways of addressing problems (Wenger, 1998; 2006). The organization should provide the employees with what Wenger (1998) states, a social fabric of learning.

If the CoP is not formed organically, the organization can also have self-defined CoP's. Even though Wenger (1998) stated that one of the fundamental features of CoP is that it has to be emergent and voluntary, his later work with McDermott and Snyder is mainly about how to design or cultivate a CoP (Wenger et al., 2002). In the 2002 study, the authors state that even though CoP develops naturally, a design can provide fundamentals that can enable a community to evolve. However they clearly state that the design in the traditional sense cannot be structured or implemented and imposed, but, rather, the design should provide elements that bring out a community's own internal direction, character, and energy (Wenger et al., 2002). CoP's can thus be indirectly seeded (Thompson, 2005). The organization can provide with the structural and epistemic components to give scope for interactions and engagement to support the development of groups, as a CoP, which can thus be shaped indirectly, not in a prescriptive manner. It is not the duration of time which matters for a CoP to evolve and function, as there might be some short-lived communities, but what is important is that there should be significant mutual engagement in pursuing an enterprise to share some significant learning (Wenger, 1998, p.86) and the size of the community does not matter (Wenger et al., 2002).

## **A learning framework for enhancing organizational Learning**

A framework based on Wenger's (1998) CoP can provide guidelines for the organizational knowledge experts in addressing how a CoP can be indirectly formed if it is not formed organically to enhance the effectiveness of learning. The organization can provide activities, opportunities, and experiences to facilitate informal learning within the organization or within specific group of the organization. In Wenger's (1998) view, "learning cannot be designed, it can only be designed for—what is facilitated or frustrated" (p. 229). Wenger (1998) proposed a learning architecture based on his analysis of learning at the level of practice and identity. Wenger's (1998) learning framework comprises four dualities, which address the fundamental issues of meaning, time, space and power with regard to practice and identity. These dimensions define a "space" of possible approaches to design problems, in which a given design is located by the way it addresses each dimension. Wenger (1998) also defines three modes of belonging as the main infrastructural components of the learning framework: engagement, imagination, and alignment. These design dualities and the three modes of belonging which an organizational learning model can consider for indirectly cultivating or evolving a CoP within an organization are as follows.

### **Design Dualities**

The dimensions of design "space" in the learning architecture is basically about the general questions, choices, and trade-offs to address in the design and the basic components and facilities to be provided that will address what needs to be achieved with the design. The intention of addressing these dualities is not to choose between the two extremes of the dualities rather to consider the tension that are inherent in the interactions while designing for learning.

#### *Reification/participation*

This design dimension stresses the significance of distributing the design between participation and reification in terms of what to reify, when and with respect to what forms of participation (Wenger, 1998). The design dimension makes sure that artifacts in the form of tools, procedures and schedules are in the place and also emphasizes the importance of right people at the right place to make things happen efficiently. These choices through the design make the resources for negotiation of meaning. The duality emphasizes a productive balance between resources for learning and the activities that will make use of these resources (Brosnan, & Burgess, 2003).

#### *Designed/emergent*

There is an inherent uncertainty between design and its realization in practice, since "practice is not the result of the design but rather a response to it" (Wenger,

1998, p.233). This emergent nature of practice and identity calls for the design to have the scope for improvisation and innovation and the challenge of the design is not to ignore the emergent but incorporating it, as unexpected adaptations are inherent in the process. The design should provide space for participants to negotiate how they translate the design in ways that are meaningful to them (Brosnan & Burgess, 2003). Thus this dimension of the design focuses on the tension between pre-organized activities and emergent activities (Baek & Barad, 2005). Designers cannot design all aspects of the learning and there are chances that the learning they intended may not be the one which emerges and keeping this in mind a effective design should be flexible to incorporate the emerging learning requirements (Brosnan & Burgess, 2003; Baek & Barad, 2005).

### *Local /Global*

“Design will create relations not between the global and the local, but among localities in their constitution of global” (Wenger, 1998, p.234). This duality focuses on how communities relates with the rest of the world, through creating continuities across boundaries (Coto, 2010). Design should provide scope for creating new connection to the broader constellations where learning is relevant (Wenger, 1998).

### *Identification and negotiability*

The dimension of identification and negotiability is about “how the power to define, adapt, or interpret the design is distributed” (Wenger, 1998, p.233). While the other three dualities were about balancing both the aspects of duality, this design dimension stress the significance of one being a necessary condition of other (Coto, 2010). Wenger (1998), state that “design creates fields of identification and negotiability that orient the practices and identities of those involved in various forms of participation and nonparticipation” (p. 235).

## **Infrastructural components of the Learning Framework**

To understand how identity is formed through learning, it is essential to take into consideration three modes of belonging: engagement, imagination, and alignment. Wenger (1998) states that “a community can be constituted by all three, in various proportions, and the variety of these combinations results in communities with distinct qualities” (p. 182).

### *Engagement*

Engagement from a belonging perspective is considered to be the ability to take part in meaningful activities and interactions, in the production of shareable artifacts, in community –building conversations, and in the negotiation of new situations (Wenger, 1998, p.184). “In order to support learning, engagement requires authentic access to participative aspects (access to and interaction with other par-

ticipants) and reificative aspects of the practice (access to symbols, tools, language, and documents, etc.) in concert.” This dual access to participation and reification makes engagement a special context for learning and identity, and a lack of access to either, results in an inability to learn (Wenger, 1998). Thus to support engagement both structural and epistemic components are necessary.

### *Imagination*

“The concept of imagination refers to a process of expanding our self by transcending our time and space and creating new images of the world and ourselves. Imagination in this sense is looking at an apple seed and seeing a tree” (Wenger, 1998, p.176). Through imagination, we can include in our identities, other meanings, possibilities, and other perspectives. Imagination helps people to see their own practices as continuing practices that reach far into the past, and it can help to visualize and explore novel developments, alternatives, and future opportunities (Wenger, 1998). It thus provides the learners the scope for seeing themselves in new ways to generate new situations and possible worlds. Imagination requires some degree of playfulness, and opportunities for playfulness, which requires reification tools like maps, visualization stories, and simulations.

### *Alignment*

“Alignment” is about “becoming connected through the coordination of energies, actions, and practices to broader enterprises” (Wenger, 1998, p.178). “The work of alignment is to connect the local efforts to broader styles and discourses that allow learners to invest energy in them” (Wenger, 1998, p.178). Alignment assists in strengthening our power and aids in realizing the possible

Thus by considering the learning framework of the theory of CoP the organization can come up with guidelines as to how the traditional facilities like physical infrastructure, information technologies, and organizational structures and roles can address the four dimensions of design and provide facilities that support engagement, imagination and alignment so as to facilitate learning and how to construct identities through learning with in the organization. Apart from providing the structural components for a community to evolve, the organization can also provide epistemic components like providing an informal atmosphere, motivation and role playing etc to reflect, share, and learn from each other’s experiences. An outside perspective can also be provided to help group members see the possibilities and what they could achieve (Wenger et al., 2002). This can be in the form of members with in the organization and also through organizational members. Thus, in the communities by exchanging information and sharing experiences, the employees can be empowered through learning which in turn can improve the organizational effectiveness.

### **Conclusion**

In learning contexts, from a knowledge-creation approach, creativity can be re-

garded as a driver of facilitating the conversation between tacit knowledge and explicit knowledge and between individual level and collective level. Furthermore, creativity provides as many as opportunities of learning in organizational contexts. The paper elucidates how the learning theory of CoP can provide new insights to organizational learning. The paper puts forward how the learning framework recommended by CoP can be considered by the designers of learning in the organization to indirectly form and cultivate CoP to enhance organizational learning. CoP can immensely contribute to organizational learning because each organization has its own composition of features that are embedded in the sociocultural setting making perceptions and attitudes distinct for the employees within the organization and also for employees as participants in different projects within the organizations. CoP focuses on the cultural forms of participation and reification that exist in a particular community and learning is viewed as a process with different forms of involvement and modes of engagement characteristic to a local context of activities. It can make organizational learning more effective and not restricting learning to accumulation of tacit knowledge by bringing creativity in collaborative processes.

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# Challenges in Operationalising Predictive Analytics

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**ABSTRACT** The phenomenon of big data has brought home the importance of predictive analytics as a technology and statistical technique critical to taking the sting out of the big data mayhem. Although predictive analytics has been around for some time, the benefits of predictive analytics have only recently been appreciated due largely to the phenomenon of big data. This new-found appreciation of predictive analytics is coupled with a desire by many corporate organisations not only to inform strategic business decisions with evidence, but also to predict future *trends* with a high level of confidence. While many organisations are able to use predictive analytics technology with greater success, the outcome for some organisations has been less than successful. This paper argues that predictive analytics can only achieve so much when organisations and their analytics teams consider the main challenges in predictive analytics projects. The paper suggests a number of measures that analytics teams can take to address the challenges of predictive analytics. The paper concludes that although some machine learning algorithms based on artificial intelligence are increasingly being used to address aspects of the challenges of predictive analytics but with ever present danger of lurking variables or unknown factors, there is no *sustainable* alternative to good data quality assurance.

*Keywords:* Predictive analytics, data quality, limitations, model and modelling, return on investment, legal and ethics

## Introduction

In the recent years, predictive analytics has been transformed by the phenomenon of big data, the innovation that surrounds the use of digital information. These datasets—85% of which are non metric data or unstructured (SAS Institute, 2012)—are huge and complex in volume, velocity, variety, veracity and variability they are significantly beyond the capability of standard data processing and analytic tools, and even threatens traditional computing architectures (Ogunleye, 2014).

Predictive analytics can be conceptualised as both an analytical process and technology. OPCC (2012, p.3) conceptualise predictive analytics as a ‘general purpose analytical process that enables organisations to identify patterns in data that can be used to make predictions of various outcomes, not all of which have an impact on individuals.’ But predictive analytics is more than an analytical process: it combines human skills and capability with technology such as machine learning of patterns in current and historical data and the application of algorithms not only to identify patterns in the data but also to forecast future probabilities of the outcome of those patterns (Ogunleye, 2014). According to Miller (2014, p.2):

Predictive analytics, like much of statistics, involves searching for meaningful relationships among variables and representing those relationships in models. There are response variables—things we are trying to predict. There are explanatory variables or predictors—things we observe, manipulate, or control that could relate to the response.

It is these generally accepted conceptions of predictive analytics that have given organisations confidence to deploy and, for some organisations, embed predictive analytics in functional and operational decision making (Accenture, 2013) to ensure that decisions are based on hard evidence and to achieve high level of confidence in prediction. In other words, these widely accepted conceptions of predictive analytics have enabled data-driven organisations to take the sting out of the big data mayhem as well as strengthen their ability to ‘generate better decisions, greater consistency, and lower costs’ (CGI, 2013, p. 2).

Predictive analytics technology is therefore critical to sense- and meaning-making of Big Data, as predictive analytics not only ‘makes it possible to harness the power of big data’ (Heitmueller, et al. 2014, p.1523) thereby leveraging organisation data assets, but also critical to translating Big Data into ‘meaningful, useable business information’ (Abbott, 2014).

## Operationalising predictive analytics

Predictive analytics brings together management, information technology and modelling (Miller, 2014), and three elements—environment, models and architecture—are crucial in operationalising it (Taylor, 2012). Take environment, the first element. To ensure that the right issue is addressed or the right problem is solved, there is a need for an enabling environment that encourages team work and collaboration where everyone involved subscribe to a shared goal, agree to the problem that is needed to be solved and, more importantly, take ownership of the pro-

ject. This is the foundation for a cost-effective, successful application of predictive analytics in any setting.

The second element in operationalising predictive analytics is model. The word ‘model’ in this context refers to the relation of one set of variables to another (Miller, 2014). Modeling is at the heart of predictive analytics project and it is extremely important that an organisation has in place a process for developing predictive analytic models. According to Taylor (2012), the modelling process has to be ‘repeatable, industrial-scale’ to ensure effective development of ‘dozens or even thousands’ of required predictive analytic models.

The third element is a robust architecture for predictive analytics. The choice of architecture—be it relational or non-relational—is critical to the deployment and management of predictive analytic models in production systems. The choice of architecture will be determined by the architecture drivers and the extent to which the architecture drivers are able to handle large volume of data, process non-metric or unstructured data, reliable and tolerance of fault, provide outcome in real time, are cost-effective and quality, consistency and security-assured, etc. Nonetheless, the deployment and management of predictive analytic models should be a shared/collaborative effort that should involve a ‘collaborative team of data modelers, data architects, scoring officers, and validation testers’ (Chu, et al, 2007, p2).

These three elements of environment, model and architecture could be seen as both a *predictive analytics tripod* where each leg is important and a triangle where everything connects. More importantly, ensuring confidence in, and assuring the integrity of predictive analytics should be a continuous and non-stop process as

## Challenges in operationalising predictive analytics

Like some technologies or statistical techniques, predictive analytics has its challenges. However, predictive analytics as conceptualised above can only be limited by errors of omission or commission on the part of businesses, users of predictive analytics and their analytics teams. Since so much depends on human input (figure 2) in making any predictive analytics project successful, the likelihood of human errors cannot be over stated. Thus, a major consideration in the deployment of any predictive analytics project is subject knowledge or the extent to which an organisation is familiar with the concepts of predictive analytics. In other words, before the project is launched or embarked upon, businesses and their analytics team need to have a deeper understanding of the concepts of predictive analytics noting in particular what is involved in operationalising predictive analytics and how people, tools and algorithms are connected, issues in predictive analytics, and the application of predictive analytics to big data (see Ogunleye, 2014). The following paragraphs highlight some of the practical considerations for analytics teams.

### *Quality of data*

A significant issue in predictive analytics relates to the quality of the data sets. As a statistical technique, data is central to predictive analytics and it is important that organisations their analytics teams have a deeper knowledge of the quality of the

available data before investing in predictive analytics technology (see also McCue, 2007).

A recent study by Andreescu, et al. (2014, p.15) has underlined the significant of good quality of data in analytics projects. Andreescu, et al found that poor data could ‘cause serious consequences for the efficiency of organizations’ and that poor attention to ‘quality issue could potentially lead to erroneous data mining and analysis results which in turn could lead to severe consequences, financial or otherwise.’ To prevent the likelihood of poor data being used in predictive analytics, Ogunleye (2014) points out that it is important that analytics teams secure the integrity of data and super secure in their judgement that the data is free of bias or that bias has been corrected and everything else that goes with operationalising predictive analytics—including (predictive) model development and implementation, monitoring, calibration and re-calibration. This process of assuring and measuring data quality involves data preparation, cleaning and formatting—all of which are essential for data mining, ‘the process of discovering interesting patterns and knowledge from large amounts of data’ (Han, et al. 2011, p6).

Two issues are also worth mentioning. First, lack of historic data as a limitation can be minimised by re-creating the data ‘back in time’ as Jain (2015) has argued. Second, it is possible to use artificial intelligence based on machine learning algorithms to minimise the impact of data quality on the outcome of predictive analytics – for example, to reduce noise, correct errors and address biases especially when data are mixed and contain thousands of independent variables. The only *proviso* is that, with the ever present danger of the so-called lurking variables or unknown factors, good algorithms might not be a *sustainable* alternative to good data quality assurance.

### *Model and modelling*

Model refers to a ‘representation of the world, a rendering or description of reality, an attempt to relate one set of variables to another’ (Miller, 2014, p. 2). Modelling, therefore, is a mathematical representation of an entity and very important in any predictive analytics project. According to Dickey (2012):

Predictive modelling is a name given to a collection of mathematical techniques having in common the goal of finding a mathematical relationship between a target, response, or “dependent” variable and various predictor or “independent” variables with the goal in mind of measuring future values of those predictors and inserting them into the mathematical relationship to predict future values of the target variable.

As modelling is important in predictive analytics, it can also be a major limitation if the modelling process is not well understood. As Taylor (2012) explains, the modelling process has to be ‘repeatable, industrial-scale’ to ensure effective development of ‘dozens or even thousands’ of required predictive analytic models—in order to search for ‘meaningful relationship among models and representing those relationships in models’ (Miller, 2014, p.2). So, whatever the type of predictive

model/s is deployed—be it regression or classification—an important issue for consideration is the level of user discretion that is considered acceptable. User discretion, judgement and experience (or lack of them) will have impact on the outcome of predictive analytics. Thus, without an effective model life-cycle management build into the production system or environment, predictive analytics project will not archive desired results (see also Chu, et al., 2007). Similarly, a predictive modelling based on an out-of-date or incorrect data might ‘wrongfully skew’ analytics results (Viswanathan, 2013) or leads to wrong conclusions (Heger, 2014).

In deploying modelling in predictive analytics, there is, sometimes, a lack of a clear understanding of the difference between ‘prediction’ and ‘projection’ and how the two terms compare. Although both ‘projection’ and ‘prediction’ have the term ‘forecast’ in their meaning, but an understanding of how the two terms compare is very important. Prediction is about the predicting future *trends* and projection is about projecting (forecasting) *events*. Analytics teams might run into trouble when projections are used to predict future trends when the underlying assumptions, implicit and explicit assumptions, of their models are not *constant* or, at best, *susceptible* to seasonality trap. In other words, when analytics teams are not clear about how the two terms compare, they might not be able to guarantee the *stability* in the phenomenon to be predicted (see also Elkan, 2013).

Additionally, there is a general tendency to equate correlation with causation. As Viswanathan (2013) argues there is evidence to ‘mistake’ correlation for causation in predictive analytics especially if the latter is conceptualised as in Miller (2014, p.2), involving ‘searching for meaningful relationships among variables and representing those relationships in models’. Coefficient of Correlation highlights the linearity of relationships between variables in the model or data item, but implies little about the nature of those relationships. Thus, in making judgement about how the two terms—correlation and causation—compare in predictive analytics results, the nature of the organisation and the phenomenon to which the statistical technique applies are a significant consideration. As Huang (2013, p. 1) argues:

Genetics and molecular biology have historically been blessed with simple cases of unidirectional, linear causality, which have taught us a great deal about gene function, but also stifled the intellectual embrace of mutual causation. ... Thus, unintentionally, equating correlation with causation is warranted in complex, networked systems where positive feedback loops are a characteristic feature and entail mutual causation. Understanding such relationships will help optimize approaches to disrupting the cycle—for instance, by treating certain symptoms. But it will also open the door to the deeper cause: what kicked off the causation cycle in the first place?

### *Return on investment*

The return of investment (ROI) is an often-overlooked issue in predictive analytics projects. There is evidence that return of investment is as high as 250% in predictive analytics projects, compare to the 89% return of investment of projects that focused solely on accessing information and seeking internal gains in productivity, according to a survey by the International Data Corporation (Vesset and Harries,

2011). There is also evidence that many organisations deploy predictive analytics projects with little or cognisance of the return on investment and those organisations that did have ‘struggled to see a meaningful’ ROI (Accenture, 2013).

Historically, the return of investment is conceptualised in financial term, used as a critical performance evaluation tool for financial returns and costs. However, in the recent decades, the concept of return of investment has been extended to and applied in a range of contexts including information system especially when organisations are making decisions about acquisitions of intellectual property or software (Botchkarev and Andru, 2011).

Operationalising predictive analytics involves a sizeable amount of investments in people, tools and technology. An earlier survey by the IDC (Harries, 2003) found that predictive analytics projects required significant higher levels of investment. Even though the IDC survey took place over a decade ago, the levels of investment required for predictive analytics project remain high (Accenture, 2013). Take human resources, for instance, investment begins well before the initial model-build and the continuous maintenance phases. This investment in human resources is particularly justifiable because of the rate at which models deteriorate over time (Jain, 2015).

With regards to the methodological approach to or the process of calculating return of investment, there is no universally agreed formula or method for calculating. A lot depends on the individual organisation and the context in which an organisation deploys predictive analytics. However, it is generally accepted that calculating ROI will compare technology and labour costs with before- business results and after-business results. Additionally, as McCann (2014) explains:

... Many companies run controlled studies where, for example, a new marketing tactic suggested by the analytics is directed at a portion of an audience, with the benefit quantified by comparing it with results for a control group.

What is clear from the foregoing is that irrespective of the methodological approach, an organisation should strike a balance between the available resources and the ROI before deploying predictive analytics technology.

### *Legal and ethical*

There are legal and ethical considerations in the deployment of predictive analytics, especially where a company operates in different jurisdictions or cultures. The way information about customers are kept and mined and the ‘extent to which data mining’s outcomes are themselves ethical’ with respect to individual customers in corporate and non organisations (Johnson, 2014; EDUCAUSEreview, 2013; Kay, et al., 2012) should conform to the highest ethical standards. According to Schwartz (2010, p.3), it is critical that an organisation ‘assess whether its decision-making with analytics reflects legal, cultural, and social norms about acceptable activities and take steps, when needed to comply with these norms.’ (See also Johnson, 2013; OPCC, 2012).

### *Business case for predictive analytics*

Another consideration for organisations and their analytics teams is a perception that the case for a predictive project has to be about technologies or has to be predicated on information technology infrastructure. Any decision to deploy predictive analytics must reflect the business proposition. This is what Heger (2014, p. 47) says about any organisation considering a big data analytics project, an argument that also applies to any predictive analytics project:

Any company considering a Big Data project has to first evaluate the business cases, specify the goals and objectives, and stipulate the outcomes of the proposed Big Data initiatives. After the people and business impact and outcome is clearly understood, the IT capabilities and requirements can be evaluated. Developing a roadmap of how to achieve the desired business outcomes provides the organization with the understanding of what is required from a financial and organizational perspective

It is therefore important to understand the business and people aspects of any predictive analytics project. It is important that the case for predictive analytics starts with a business problem/preposition that requires a multidisciplinary team of data scientists, statisticians, data analysts as well as individuals with risk management expertise. It is important that members of the multidisciplinary team come together and agree on how predictive analytics technology can be used to address critical business problems. A central part of the role of the analytics team is therefore to demonstrate how businesses can seamlessly and effectively align predictive analytics with IT decisions (see Boris, 2014).

### *Human factor*

An often-overlooked issue in predictive analytics is the challenge posed by human factor. The introduction of predictive analytics technology will require attitudinal change and people in the organisation who have used to making decision based on intuition or gut feeling and who considered themselves an essential part of the existing decision making process might feel that their toes are being stepped on. These individuals have an interest to protect—which is to make sure that no machine takes over their jobs! They need to be listened to, won over and assured that the predictive analytics technology is required solely as a decision making-supporting tool for the organisation. It is therefore important that champions of predictive analytics anticipate the human relations challenges that will arise as a result of the introduction of predictive analytics technology. In other words, these champions should be mindful of concerns by those in the organisations who might have reservations about the project.

### **Conclusion**

The phenomenon of big data occasioned by the recent explosion in digital data has underlined the significance of predictive analytics as both a technology and statisti-

cal technique critical to taking the sting of the big data mayhem. Although predictive analytics has been around for some time and has been used successfully by large companies operating in a small number of industrial sectors, it was only in the recent years that the benefits and potential of predictive analytics have been appreciated. Predictive analytics offers data-driven organisations in particular and users alike tremendous benefits—the main being the ability to base operational and functional decisions on hard facts and the ability to embed analytics across enterprise operations and functions. Thus, predictive analytics is new approach to decision making as the technology enables organisations to make real time predictions with a high degree of confidence. However, predictive analytics has its limitations. The main limitation is quality of data. Out-of-date or incorrect data can skew analytics results or produce wrong or incorrect conclusions. Although, it is possible to use artificial intelligence based on machine learning algorithms to minimise the impact of data quality on the outcome of predictive analytics, but with the ever present danger of lurking variables or unknown factors, good algorithms cannot possibly be a *sustainable* alternative to good data quality assurance.

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# **Assessing Customer Relationship Marketing Practices and its impact on Customer Satisfaction in Ghanaian banks. A case study of Energy Bank Ghana Limited**

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**ABSTRACT** This study examined practice of Customer Relationship Marketing (CRM) and its impact on customer satisfaction in commercial banks. The variables relationships were established through case study research design using Energy Bank Ghana Limited. The study adopted convenience sampling technique to select a sample of 92 bank customers. Primary data were collected using questionnaires and all 92 bank customers responded positively. The Chi-square and multiple regression analyses were used to test the hypotheses. The findings show that each variable was found to be effective in determining customers 'relationship marketing. The most widely adopted CRM practice in commercial banks was conflict handling followed by Reliability, Communication, Service quality, Empathy, Trust, Customer relations, Commitment, Staff Competence. Responsiveness is the least adopted practice. The study further investigated the impact of customer relationship marketing on customer satisfaction in commercial banks. Analysis revealed that, the strength of the general effect of staff commitment on customer satisfaction justified by the chi square test was positive and of high association. Also, the strength of the general effect of trust on customer satisfaction as validated by the chi square test was also positive and of higher association. Additionally, it was gathered that the strength of the general effect of communication with the bank on customer satisfaction as validated by the chi square test was positive and of modest association.

*Keywords:* Customer relationship marketing, customer satisfaction, chi-square

## Introduction

The banking sector is increasingly competitive around the world. The core product being provided to customers is considered reasonably homogenous. As a result, this has necessitated the banks to differentiate themselves from competitors at the increased product level through longer-term relationships with customers, (Heffernan et al, 2008). The emergence of CRM as a separate domain of marketing in the 1980s and 1990s becomes more comprehensible from a historical perspective (Gronroos, 1990; Sheth & Parvatiyar, 2000). Researchers have made the compelling case that relational-based exchange was the norm for most of recorded history; the anomaly of transaction-based marketing emerged only in the early 1900s. Thus, relationship marketing is a rebirth of marketing practices in the pre-industrial age (Sheth and Parvatiyar, 2000). Customer Relationship Marketing is a better way for banks to establish a distinctive long-term relationship with their customers in this increasingly competitive global financial market. (Mohammad et al, 2011). The significance and importance of Customer Relationship Marketing in developing economies like Ghana has increased in recent years and thus has been recommended by managers and marketers in the banking industry as a strategy to tackle service intangibility, (Kuranchie,2010). It is also suitable for financial services that are complicated for customers to evaluate even after purchase and use. Since the banking industry is dependent on customers, sustainability of banking business is a necessity, and this can be achieved through customer satisfaction through long term relationship. Secondly, marketers and managers of Commercial Banks try to identify the need of customers in order to enhance customer satisfaction, (Gilaninia et al, 2011). Apart from the customer need identification, Customer Relationship Marketing helps foster customer loyalty and reduce cost (Ndubisi, 2004).

Most companies in Ghana and all over the world are not able to thrive in today's competitive business environment due to their transactional attitude towards customers, (Kuranchie, 2010). Businesses have to focus their marketing lenses on rational dimension which would impact positively on customer satisfaction and retention. Customer satisfaction is a feeling in consumers after comparing product and service performances with a set standard, (Ahmet, 2010). Thus, satisfaction refers to the pleasant or unpleasant feeling when imaginative function and expectations are compared. Customer satisfaction is the difference function between customer perception and customer expectation. Researchers have argued that Customer Relationship Marketing is the principal paradigm shift in marketing theory and practice in recent decade, (Sheth and Parvatiyar 2000). Due to the remarkable changes in the global business environment and the shift of power from businesses to customers, the model of Business-to-Customer has been replaced by that of Customer Relationship Marketing (Ahmet, 2010). Inexorably, many banks have begun a search on how to build valuable customer relationships (Ndubisi, 2004). Many Commercial banks strategically plan to develop and manage stronger relations with customers in order to maximize customer equity This involves building, developing and managing customer relationships to enhance customer satisfaction. Vel-

nampy and Sivesan,(2012) cited that Customer Relationship Marketing aims at attracting, developing and maintaining relationship with customer. Stately differently, Customer Relationship Marketing is a process that seeks to identify, establish, develop and maintain long term relationship with customers or end relationship when necessary, (Sheth and Parvatiyar 2000). Customer relationship marketing aims at providing enhanced value to the customer through need provision. This trend and mechanism is what Commercial Banks have identified and adopted for the mutual benefit of both the bank and the customer (Ahmet, 2010).

In this era of intense competitive pressures in the Ghanaian banking industry, many commercial banks are now focusing their efforts on maintaining a satisfied customer base (Kuranchie, 2010). It is a common assertion among marketing theorists that strong customer satisfaction is vital to business success (Robert & Shelby, 2011). Customer relationship marketing focuses on building long-term relationship with customers as the key to stability in an increasingly dynamic market, (Velnampy et al 2012). Moreover, the major success factor to succeed in mature market depends on maintaining long-term relationships with stakeholders, (De madariaga and Valor, 2007). This is particularly true in the Ghanaian banking industry where financial sector reform has created an enabling environment that allows consumer banking in Commercial banks; thus given customers considerable choice in satisfying their financial needs (Kuranchie, 2010). In view of this, many commercial banks are directing their strategies towards increasing customer satisfaction, (Bolton, 1998). However, the challenge that commercial banks face today is how to increase customer satisfaction, (Bhardwaj, 2007). This makes it very crucial for commercial banks to satisfy customers and establish good relationship with customers. Nonetheless, the emergence of customer relationship marketing in the financial sector has been extensively studied by focusing on customer satisfaction as the key goal of banks, especially commercial banks, (Velnampy et al 2012). Thus, understanding how to manage customer relationship effectively has become a relevant topic for both academics and practitioners in recent years. Yet, existing academic literature on Customer Relationship Marketing (CRM) strategies of banks does not provide comprehensive results on what constitute customer relationship marketing and its effect on customer satisfaction. The questions to be explored in this study include the following: ‘How does Commercial bank practice customer relationship marketing?’ What are the challenges involved? and ‘To what extent does Customer Relationship Marketing impact on customer satisfaction?’

### **Objectives of the study**

The general objective of the study is to examine Customer Relationship Marketing practices and its impact on customer satisfaction in commercial banks. Specifically, the study seeks to;

- i. Assess the practice of customer relationship marketing in Commercial banks.
- ii. Investigate the impact of customer relationship marketing on customer satisfaction in commercial banks.
- iii. To determine the relationship between customer relationship marketing and customer satisfactions.

## Concept of customer relationship marketing

In banks relationship marketing, the sale is not the end of the marketing process, but the beginning of an interdependent relationship between the bank and the customer. The general idea of relationship marketing is to try to encourage businesses to treat customers as individuals with different needs and aspirations (Blythe, 2008). Generally, it is perceived that some customers are not always happy with the quality of service they receive (Lovell, 2001). The relationship marketing concept evolved because a number of businesses were paying “lip-service” to customer service and quality. In other words, businesses were mainly concerned with selling and making a profit while paying little attention to maintaining good customer relations. Researchers such as Dwyer & Tanner, 2006 explain extensively the different stages of relationships in marketing. From awareness stage, exploration stage, the interactions stage through to commitment stage where parties desire to commit to each other, and maintain a good working relationship that sees both parties winning (Dwyer & Tanner, 2006).

Relationship marketing is concerned about building customer loyalty by providing value to all the parties involved in the relational exchanges. Relationship marketing seeks to acquire and retain customers by providing good quality customer services. According to Tseng (2007), relationship marketing is seen as the mainstream in planning a marketing strategy both in industrial marketing and consumer marketing. Wulf et al. (2001) suggested that the different levels of relationship duration would result in different levels of consumption experience, producing different results, satisfaction and loyalty with different relationship marketing tactics and compared with traditional marketing, relationship marketing is more concerned about building customer relationships in order to achieve long term mutual benefits for all parties involved in the exchanges.

Other domains or areas in marketing overlap with relationship marketing. Relationship marketing shares many commonalities with service marketing, business-to-business marketing, channels marketing, brand management, and customer relationship management. However, differences exist among these concepts. These concepts may be differentiated based on their focus on improving performance or by their specific features. Relationship marketing also applies to many different contexts with varying degrees of effectiveness. For example, a meta-analysis of more than 38,000 relationships shows that building strong relationships is more effective for improving performance among services than among product offerings, in business-to-business versus business-to-consumer markets, and for channel partners rather than direct customers (Palmatier, 2008). Thus, research and practice in services, business-to-business, and channels contexts often include relational constructs. Early research in the service context also provides the roots for many key CRM concepts (Berry, 1995).

In reality, relationship marketing and branding strategies that focus on building brand equity also overlap. Researchers suggest that relationships and brands represent two critical sources of intangible, market-based assets that can be leveraged into superior financial performance (Srivastava et al., 1998). But brand equity

represents the differential effect of brand knowledge on customer action, such that customers behave more favorably toward a product when they can identify the brand (Keller 1993). Others argue that brand equity may be “a fundamentally product-centered concept” that does not capture drivers of customer behavior fully (Rust et al., 2004). Although CRM and branding activities similarly focus on building intangible customer assets that positively influence customer loyalty, purchase behaviors, or financial performance while reducing marketing costs, they differ fundamentally in that branding focuses on “product(s)” with extensions to the firm, whereas CRM primarily focuses on “relationship(s)” and their extensions to the firm.

### **The dimensions of Relationship marketing**

The customer relationship marketing concept has evolved over the decades and experts such as Yim *et al* (2008) has elaborated six dimensions to implementing relationship marketing that are geared to meet customers’ expectations. These dimensions include:

1. *Trust*: according to Chantal (2007) trust is the willingness to rely on an exchange partner in whom one has confidence. A bank in which a client has confidence definitely stands ahead of competition. The results of trust can be seen in a bank’s profitability, growth, market share and customer retention. It is therefore an edge that banks can employ in their desire to gain a strategic advantage and survive in today’s increasingly competitive environment (Oliver *et al.*, 1999).
2. *Bond*: As in any relationship, the one between a customer and a business provider (in this case, a bank) requires a bond that unites them together. Callahan (1995) refer to it as the dimension of a relationship that result in two parties (customer and supplier or buyer and seller) acting in a unified manner towards a desired goal. When such a relationship exists, the customers are not only seen as clients, but also as partners.
3. *Marketing communication*: Several relationship marketing scholars agree that communication is a fundamental aspect of relationship development. The quality of information that is shared and the mode in which this is done plays a central role in a bank / customer relationship. Hence, careful design of communication means and forms must play a decisive role in complimenting the relationship marketing aspect of a bank.
4. *Shared value*: Value reflects the perceived tangible and intangible benefits and costs to customers. In any marketing concept, value is central. A trend that is seen today in the banking space as a result of relationship marketing relates to the values associated with the product offerings being shared between the bank and the customer. If a customer does not see himself treated as a partner by a bank deriving shared value, the relationship will not transcend to reap any higher benefits.
5. *Reciprocity*: This deals with the dimension of business relationships where it is believed that people owe one another because of their prior actions. This is

premised on the fact that, if you desire assistance, you must first assist others. For example, a bank that steps to the forefront when a customer is in difficulty stands at an advantage over its peers. This builds a sense of loyalty and ensures the relationship is grounded firmly for the long term.

6. *Empathy*: Sin *et al* (2002) describe empathy as analysing a business relationship in such a way that enables the two parties involved to see the situation from the other's perspective, that is seeking to understand somebody else's desires and goals. For example, the front office staff of a bank must be able place themselves in the customer's position in order to serve them accordingly and ensure satisfaction.

Customer satisfaction (CS) is a term that has received considerable attention and interest among scholars and practitioners perhaps because of its importance as a key element of business strategy (Anderson *et al.*, 1994). The concept has been variously defined by many authors (Lovelock & Wirtz, 2007; Oliver, 1992). Kotler & Keller (2006) and Lovelock & Wirtz (2007) defines satisfaction as psychological concept that involves the feeling of well-being and pleasure that results from obtaining what one hopes for and expects from an appealing product and/or service. According to Gyasi & Azumah (2009) satisfaction is "the process of customer's overall subjective evaluation of the product/service quality against his/her expectation or desires over a time period". The object of customer satisfaction may be varied and can be related to different dimensions of multiple experiences with product/service provider (Surenschandar *et al.*, 2002). While most definitions relate customer satisfaction to quality of a product or service offering (Kotler & Keller, 2006), satisfaction can as well be related to other non-quality dimensions (Singh 1991). It may be related to an on-going business relationship or with price-performance, satisfaction with the time or service delivery, and satisfaction with entire reputation and outlook of an organisation. Satisfaction can be related to attribute-specific and overall performance. It is attribute specific where it relates to a specific product or service. The focus on customer-centric marketing philosophies has received considerable attention in the marketing literature by scholars and practitioners (Heskett *et al.*, 1997). Both practitioners and scholars are increasingly looking for ways to understand, attract, retain and build intimate long term relationship with profitable customers (Gronroos, 1994).

From marketing perspectives, customer satisfaction has multi-dimensionality. Creating, maintaining and developing the relationship among customers and other beneficiaries are one of the goals of relationship marketing. In this type of marketing several norms should be observed. The main elements are commitment, trust, and mutual benefit which focus on mutual cooperation, reliability and communication (Malley and Prathero, 2004). Two fundamental components of relationship marketing are commitment and trust which have been mentioned in most of the models. With organizations understanding from the importance of customer's satisfaction, they are gradually moving from traditional marketing toward relationship marketing (Ranjbarian and Barari, 2009). Maintaining and keeping the customers and making him/her to a committed one increases the intrinsic value of an organization. It should be noted that in relationship marketing, the character and position

of customers differ with one another. Therefore, the needs, character, position and personal interests of customers should be considered in implementation of relationship marketing. Relationship marketing is one of the key aspects of modern marketing strategies, because it focuses on making close and stable relationship with customers (Ville, 2005).

### **Empirical perspective**

Xuan Zhang & Yuanyuan Feng (2009) investigated the impact of relationship marketing tactics on customer satisfaction and trust, which in turn increase customer loyalty. The study focused on Swedish mobile telecommunication sector. They developed an analytical model as a guideline to test the relationships between relationship marketing tactics, relationship quality (trust and satisfaction) and customer loyalty. A quantitative method with deductive approach and collected primary data through a self-completed questionnaire. The study concluded that Service Quality, Price Perception, and Value Offers have impact on customer loyalty indirectly through the customer satisfaction and trust. They also identified that Brand image is positively and directly related to customer loyalty. However, switching costs is found to be less correlated with customer loyalty, as well as satisfaction and trust. Thus they finally concluded that, customer relationship has greater influence in customer satisfaction.

Ababio & Atiwoto (2004) examined the practice of relationship marketing and customer retention by Ghanaian banks. They sampled 12 out of the 27 banks in Ghana. A qualitative research approach was chosen and deductive research was conducted based on twelve case studies from both local and international banks. They also used questionnaires, surveys and interviews to obtain primary data which was subsequently analysed with statistical tools. Their findings of the study showed that indeed, all the banks have reasons for adopting relationship marketing in customer retention. The most popular reason for believing in the success of relationship marketing is customer retention. The study also found that, banks apply relationship marketing in their customer retention efforts. Their study further revealed that the banks believe profitability to be the end result of relationship marketing.

Mwanyisa (2012) investigated the relevance of relationship marketing on the sustainability of Zimbabwean banks. Five independent variables (customer relations, product attributes, promotion and service delivery and information technology) were identified and were tested against one dependent variable (sustainability of banks). A positivist research paradigm approach was used to conduct the research. The approach used the quantitative method of research to establish causal relationships. Null (Ho) and alternative hypotheses (Ha) were formulated in order to test the relationship between variables. A five point Likert scale questionnaire was developed and administered in five major commercial banks in Harare, Zimbabwe namely; Banc ABC, Barclays bank, Commercial Banks of Zimbabwe, Stanbic Bank and Standard Chartered Bank. The five major banks were selected in terms of market capitalisation as well as total deposit share among other things. The empirical results revealed that five of the independent variables positively cor-

related with the dependent variable implying that they all have an impact on bank sustainability. Musa (2009) explored the impact of relationship marketing on customer loyalty in banking context. A survey of students of Universiti Utara Malaysia (TJLJM) and employees of Permintex Industries Sdn was undertaken. The study was conducted to determine the significance and influence of the underpinnings of the relationship marketing such as trust, commitment, conflict handling, values and empathy on customers' loyalty in the banking sector. A total of 138 usable questionnaires were obtained from a total of 150 questionnaires distributed. The findings of the study shows that the four (4) variables namely trust, conflict handling, values and empathy were important in determining and influencing customers' loyalty. Since the results of the research showed that customers' loyalty is related to trust, conflict handling, values and empathy factors, therefore banks need to consider these factors and provide the right tenant mixes, services, and other facilities that are essentials for attracting customers.

Ndubisi (2004) stated that more and more firms are capitalizing on strong firm-customer relationships to gain valuable information on how customers can be treated the best and indirectly keeping them away from the competition (Zeithaml et al., 1996). Therefore, it's important to examine the impact of the underpinnings of relationship marketing on customer loyalty and satisfaction (Ndubisi, 2007). Heskett et al. (1994) further stated that customer satisfaction is positively related to customer loyalty, which in turn is positively related to profitability. This study also discusses how customer satisfaction leads to customer loyalty and increased business profitability (Storbacka et al., 1994). Several studies have shown that customer satisfaction is positively affected by customer loyalty (Bloemer, de Ruyter & Wetzels, 1999; Oliver, 1999).

## **Research Methodology**

This research based on the positivist philosophy as it relied mainly on statistical and quantitative estimation to arrive at conclusion. This research used an explanatory design relying on quantitative data from bank customers who held accounts and patronised the banks services to explore impact of customer relationship marketing on customer satisfaction. Both primary and secondary data were used in the study. Primary data were collected through questionnaires and the customers responded positively. The study adopted purposive sampling technique to select banks whereas convenience sampling techniques were employed to select a sample of 92 Energy bank Limited bank customers over the period July to September 2014. In order to ensure content validity, before the survey administration the questionnaire was reviewed by two academics professionals. Also, three professionals in the fields of marketing, service management and statistics assisted with the questionnaire design. The questionnaires were pre-tested with 30 bank customers to remove any ambiguity. Then, SPSS software was used to analyse the collected data and perform statistical analysis. The study used Cronbach's Alpha to assess the questionnaire reliability. The reliability assessment of 0.70 (>0.60) was consid-

ered satisfactory according to Yin (2009). Further, the study formulated hypotheses and Chi-square and multiple regression analyses were used to test the hypotheses. Specific questions that determined customer relationship marketing were measured in terms of five variables. They were trust, commitment, communication, conflict handling and competence. The questionnaire consisted of three parts. Part 1 gathered biographical data of the banks customers and staff. The rest of the parts consisted of statements based on the literature overview regarding customer relationship marketing and customer satisfaction. One part was used for each of the five predetermined independent variables and the dependent variable. These parts used a five-point Likert-type scale ranging from ‘Not at all important’ (1) to ‘very important’ (5) and gathered data on the possible influence of the independent variables on banks’ relationship marketing and customer satisfaction. These variables were the predictors of customers’ satisfaction and were considered as the components of the independent variable (customer relationship marketing) to establish their effect on customer satisfaction using the chi square.

**Research Hypotheses**

**Major hypothesis:** The dimensions of customer relationship marketing are effective in creating customer satisfaction in commercial banks’.

**Minor Hypotheses**

*Hypothesis 1:* there is a significant relationship between commitment and customer satisfactions

*Hypothesis 2:* there is a significant relationship between trust and customer satisfactions

*Hypothesis 3:* there is a significant relationship between communication and customer satisfactions

*Hypothesis 4:* there is a significant relationship between conflict resolution and customer satisfactions

*Hypothesis 5:* there is a significant relationship between staff competence and customer satisfactions

**Hypothesis testing**

The data obtained from the questionnaires were tested using Chi-square to determine the association between the dependent and independent variables as well as the direction of the relationship. Multiple regressions were used to test the extent and significant levels between variables. The following is the Chi-square statistical formula (Kothari, 2011):

$$\chi^2 = \sum \frac{(Observed - Expected)^2}{Expected}$$

.....

$$\chi^2 = \sum \frac{(Observed - Expected)^2}{Expected}$$

.....Equation 1

The test statistics was given by

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^c \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

Where  $E_{ij}$  is the expected cell frequency for the  $(ij)^{\text{th}}$  cell. In case  $H_0$  is true, then:

$$E_{ij} = \frac{R_i \times C_j}{n} = \frac{(\text{column total}) \times (\text{row total})}{\text{grand total}}$$

However, for large sample size  $n$ , the statistic  $\chi^2$  has an approximate chi-square distribution with  $(r - 1)(c - 1)$  degrees of freedom if  $H_0$  is true. Therefore, we would reject the hypothesis of independence if the observed value of the test statis-

tic  $\chi^2$  is greater than  $\chi_{\alpha, (r-1)(c-1)}^2$ , where  $\alpha$  is the size of the test (or if the  $p$ -value of the test statistic is less than 0.05, the level of significance). If we reject the null hypothesis, we conclude that customer relationship marketing has significant impact on customer satisfaction in commercial banks.

## Results

### *Frequency Distribution of Responders Based on Gender*

The findings from Table 1 shows that 75% of participants are males and 25% were female suggesting that there are more males than female participants.

*Table 1: Frequency distribution based on gender*

Gender	Frequency	Percentage
Male	69	75
Female	23	25
Total	92	100

*Source: Author's computation from field (2014)*

### *Frequency Distribution of Respondents Based on Education*

Majority of the respondents 67.4% have First Degree. Polytechnic education qualification 19.6% and Elementary level of education (13%) are in the minority.

Educational level	<i>Frequency</i>	<i>Percentage</i>
Elementary	12	13
Polytechnic	18	19.6
University	62	67.4
Total		100

*Table 2: Frequency distribution based on Education*

### ***Frequency Distribution of Responders Based on Age***

The findings from Table 2 show that the modal age group is 36-45 which has 45.7% of the total participants. About 30.4% of participants between the ages of 25-35 years are the prime age. Further, 10.9% and 13% are within the ages of 18 to 24 years and Above 40 years respectively.

Age	<i>Frequency</i>	<i>Percentage</i>
18-24	10	10.9
25-35	28	30.4
36-45	42	45.7
Above 45	12	13
Total	92	100

*Table 3: Frequency distribution based on Age*

### **The dimensions of customer relationship marketing**

Table 5 presents the findings from the mean ranking of the dimension of customer relationship marketing from the perspective of the staff of the bank. The results show that conflict handling recorded highest mean rank. This finding means that staffs consider customer conflict handling as very important followed by reliability to which customers request are timely met. With communication, it was found out that the bank constantly communicates to customers on service information and product attributes and customers are assured of quality service when it comes to service quality. With empathy, staffs were seen to have customer's best interest at heart as well as trust thus customers are assured of trustworthiness. Staffs were

seen to be friendly and courteous and having customer relationship. Commitment on the part of the staff was good as they are committed in building customer trust. Staff Competence is also very high and geared towards providing needs of customers. The lowest mean ranking came from responsiveness; it was found out that turnaround time for customers is very swift.

CRM practices	Mean	Rank
Conflict handling: Staffs are excellent in handling bank- customer conflict	3.97	1
Reliability: Customers request are timely met.	3.92	2
Communication: The bank constantly communicates to customers on service information and product attributes.	3.86	3
Service quality: Customers are assured of quality service	3.86	4
Empathy: Staffs have customer's best interest at heart.	3.80	5
Trust: Customers are assured of trustworthiness	3.75	6
Customer relations: Staffs are friendly and courteous	3.74	7
Commitment: Staffs are committed in building customer trust.	3.71	8
Staff Competence: The bank has competent staffs that attend to the needs of customers.	3.63	9
Responsiveness: Turnaround time is swift.	3.55	10

*Table 5: Mean ranks of customer relationship marketing  
Source: Author's computation from field (2014)*

## **Impact of customer relationship marketing on customer satisfaction**

### *Testing the Hypotheses*

*Hypothesis 1:* there is a significant relationship between commitment and customer satisfactions

As it is observed in table above, Pearson Chi-Square correlation coefficient for "staff commitment" and "customer satisfaction" is 69.608a in error level  $<0.05$ . The study confirms that relationship exists between staff commitment and customer satisfaction is significant in confidence level of 0.95. Thus  $H_0$  is rejected and the research hypothesis is confirmed. Considering the values of Phi and Cramer's V statistic and also the observed error level which is  $<0.05$ , the study conclude that the relationship is strong and significant in the confidence level of 0.95.

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	69.608a	4	0.000
Likelihood Ratio	52.806	4	0.000
Linear-by-Linear Association	19.199	1	0.000
Phi	0.87		0.000
Cramer's V	0.87		0.000
N of Valid Cases	92		

Table 6: Correlation coefficient between Staff Commitment and Customer satisfaction

*Hypothesis 2:* there is a significant relationship between trust and customer satisfactions

As it is observed in table above, Pearson Chi-Square correlation coefficient for “trust” and “customer satisfaction” is 83.292a in error level  $<0.05$ . The study confirms that relationship exists between staff commitment and customer satisfaction is significant in confidence level of 0.95. Thus  $H_0$  is rejected and the research hypothesis is confirmed. Considering the values of Phi and Cramer's V statistic and also the observed error level which is  $<0.05$ , the study conclude that the relationship is strong and significant in the confidence level of 0.95.

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	83.292a	4	0.000
Likelihood Ratio	60.471	4	0.000
Linear-by-Linear Association	19.468	1	0.000
Phi	0.951		0.000
Cramer's V	0.951		0.000
N of Valid Cases	92		

Table 7: Correlation coefficient between trust and customer satisfaction  
Source: Author's computation from field (2014)

*Hypothesis 3:* there is a significant relationship between communication and customer satisfactions

As it is observed in table above, Pearson Chi-Square correlation coefficient for “trust” and “customer satisfaction” is 39.753a in error level  $<0.05$ . The study con-

firms that relationship exists between staff commitment and customer satisfaction is significant in confidence level of 0.95. Thus  $H_0$  is rejected and the research hypothesis is confirmed. Considering the values of Phi and Cramer's V statistic and also the observed error level which is  $<0.05$ , the study conclude that the relationship is modest and significant in the confidence level of 0.95.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	39.753a	4	0.000
Likelihood Ratio	36.856	4	0.000
Linear-by-Linear Association	16.609	1	0.000
Phi	0.657		0.000
Cramer's V	0.657		0.000
N of Valid Cases	92		

Table 8: Correlation coefficient between communication and customer satisfaction  
Source: Author's computation from field (2014)

*Hypothesis 4:* there is a significant relationship between conflict resolution and customer satisfactions

As it is observed in table above, Pearson Chi-Square correlation coefficient for "trust" and "customer satisfaction" is 42.241a in error level  $<0.05$ . The study confirms that relationship exists between staff commitment and customer satisfaction is significant in confidence level of 0.95. Thus  $H_0$  is rejected and the research hypothesis is confirmed. Phi and Cramer's V test is the impact of relationship or association. Considering the values of Phi and Cramer's V statistic and also the observed error level which is  $<0.05$ , the study conclude that the relationship is modest and significant in the confidence level of 0.95.

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	42.241a	4	0.000
Likelihood Ratio	38.29	4	0.000
Linear-by-Linear Association	15.365	1	0.000
Phi	0.678		0.000
Cramer's V	0.678		0.000
N of Valid Cases	92		

Table 9: Correlation coefficient between conflict resolution and customer satisfaction  
Source: Author's computation from field (2014)

*Hypothesis 5:* there is a significant relationship between staff competence and customer satisfactions

As it is observed in Table 10, Pearson Chi-Square correlation coefficient for “trust” and “customer satisfaction” is 56.535a in error level  $<0.05$ . The study confirms that relationship exists between staff commitment and customer satisfaction is significant in confidence level of 0.95. Thus  $H_0$  is rejected and the research hypothesis is confirmed.

Phi and Cramer's V test is the impact of relationship or association. Considering the values of Phi and Cramer's V statistic and also the observed error level which is  $<0.05$ , we can conclude that the relationship is high and significant in the confidence level of 0.95.

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	56.535a	4	0.000
Likelihood Ratio	37.963	4	0.000
Linear-by-Linear Association	14.857	1	0.000
Phi	0.784		0.000
Cramer's V	0.784		0.000
N of Valid Cases	92		

*Table 10: Correlation coefficient between staff competence and customer satisfaction  
Source: Author's computation from field (2014)*

## Discussion

The objective of this study is to examine customer relationship marketing practices and its impact on customer satisfaction in commercial banks. Customer Relationship Management (CRM) practices provides a valuable asset for commercial banks if they are effectively initiated. This finding is similar to Ford et al, 2003, saying that, CRM practices in commercial banks have some underlying principles which include; communication, mutual benefit and satisfaction, mutual trust and fairness, mutual commitment and efforts from both parties. It can be added that, CRM practices in a company help to build strong relationship which has an influence on performance as stated by Palmatier (2008) ‘that relationship marketing also applies to many different contexts with varying degrees of effectiveness, and building strong relationships is more effective for improving performance among services than among product offerings, in business-to-business versus business-to-consumer markets, and for channel partners rather than direct customers.’ The study , therefore, has demonstrated the following:

First, staff commitment in building customer trust is important to the bank due to the fact that it helps deepen business relationship with customers. This result is consistent to the previous studies by Joseph et al., (2005) and Glaveli et al., (2006). The results means that with the emergence of new banks in Ghana, existing banks need to improve their service quality by providing more experienced employees to serve the customer in the operations. Building trust coupled with services such as quick turnaround for customers, showing empathy and a sense of belonging and quality services helps develop in customers' commitment, trust and retention. A great concern for the bank is developing trust and maintaining customer loyalty.

Secondly, the study also proved that staffs are excellent in handling bank-customer conflict. It was also proven that staffs are competence and committed towards conflict resolution and thus improving customer satisfaction. Conflict resolution on the part of the bank and its staff has a moderate or modest impact on its customer's satisfaction and as such the bank need to take a critical look at this practice as it can either improve or reduce customer satisfaction and eventually affect the banks bottom line. Therefore the bank needs to consider this practice and provide the right tenant mixes that is essential to achieve further excellence in handling conflict, since there is a relationship between conflict resolution and customer loyalty. This finding is similar to Nor Aza Maulad Musa (2009) saying that customers' loyalty is related to trust, conflict handling, values and empathy factors.

Ranking the CRM practices at Energy Bank Ghana Limited, conflict resolution came first followed by reliability, communication, service quality, empathy, trust, customer relationship, commitment, staff competence, and lastly responsiveness.

The study further investigated the strength of the impact of customer relationship marketing on customer satisfaction in commercial banks. It was revealed from the analysis that, the general impact of staff commitment on customer satisfaction was high as justified by the chi square test. It can be inferred from this test that, staff commitment results in an increase in customer loyalty and the development of trustworthiness which can be interpreted as having a high association as depicted by the chi square test. This finding is similar to Nor Aza Maulad Musa (2009) saying that customers' loyalty is related to trust, conflict handling, values and empathy factors. And also similar to the findings of Xuan Zhang and Yuanyuan Feng (2009) that service quality, price perception, and value offers have impact on customer loyalty indirectly through the customer satisfaction and trust.

Findings have exposed that, communication has a modest effect on customer satisfaction and as such this practice need not be overlooked. Also on the practice of communication there was no gap found as service information and product attributes are speedily communicated to customers.

The bank can maintain and improve upon this by creating good and direct communication channels to improve upon the flow of information and reduce communication gaps. Several relationship marketing scholars agree that communication is a fundamental aspect of relationship development and the quality of information that is shared and the mode in which this is done plays a central role in a bank / customer relationship. This finding is similar to Dwyer (2006) saying that relational construct (communication) is instrumental in relationship development and dissolution. The effect of staff competence and its impact on customer satisfaction

cannot be overlooked as it's of high significance as proven by the study. It can be explained that, the competence of staff can be reflected in the way and manner they discharge their duties and their urgency to respond to demands of customers which impacts on the customer's interest and eventually their satisfaction. This finding is also similar to Ojo and Omkar (2014) saying that employee competence does have a positive influence on customer satisfaction

The implications of this study are that due to significant benefits of customer relationship marketing, the banks are steadily moving toward this type of marketing. This is because in banks customer relationship marketing, the sale of a product or service is not the end of the marketing process, but the beginning of an interdependent relationship between the bank and the customer (Strydom, 2004). The objective of customer relationship marketing is to try to encourage businesses to treat customers as individuals with different needs and aspirations (Blythe, 2008). Therefore, customer relationship marketing maintains and promotes, end the relationship with customers that leads to customer satisfaction.

### **Implications of Findings**

The implications of CRM in Ghana banking industry indicate that customer satisfaction remains an important factor that bank has to ensure in order to make profit. Customers, who use a particular bank service, will think moving to another bank when dissatisfied. Customers are now more educated and knowledgeable, so demand by customers is on the increasing trend. In order for a bank to stay in the business, then banks need to periodically train bank staff and marketing department to develop innovative customer service campaign and loyalty programmes to retain and existing customers and retain new ones.

### **Conclusion**

The practices enables customer to attain good satisfaction and value for their money through quality service are reliability, communication, service quality, empathy, trust, customer relations, commitment, staff competence, and the lowest rank been responsiveness. It was revealed through the study that communication and good conflict resolution has a direct impact on customer satisfaction as well as loyalty and trust on the part of customer. The banks can use these practices as a tool for developing in its customers the loyalty and trust it requires which will lead to the customer's retention. It can be concluded from the study that CRM practices has impact on customer satisfaction though the impact sometimes is indirect. As such, banks ought to take a critical look at these practices which will help in the banks' sustainability. CRM practices when adopted by the banks will help in its growth as it impacts on customer satisfaction which leads to loyalty and retention of customers. These customers in turn recommend the bank to other people who when convinced become customers of the bank, leading to an increase in customer base of the bank and eventually the banks' profitability, all other things been equal.

## **Recommendations**

Management ought to adopt reliable, responsive and other CRM practice standards as it has been proven by the chi square test that they impact significantly on customer satisfaction. Also strategies need to be adopted to improve upon the turn-around time for serving customers as it's the least ranked practice. Banks should improve upon communication channels, and the flow of information to customers to help strengthen the business relationship and the total satisfaction of the customers. This can be implemented through messaging, sending mails, calling and client visitation.

Customer complaints must be promptly addressed. This can be realized by creating forums, placing of suggestion boxes and institution of call centers to enable customers air their views and complains. Customers must be recognized periodically and this can be done through the given out of gifts, visitations as wells as honouring them during memorable days and events such as birthdays.

Banks should strive at improving in its staff professionalism and competence in handling customers. Staffs must be given periodic training to equip them and keep them abreast with changing trends in the industry. This can be harnessed through seminars and participation in other educational workshops. Lastly, staff can be encouraged with motivational packages such as bonuses and allowances to increase their commitment to serving the bank and its customers.

## **Limitation and Scope for Further Studies**

The research sample size used was relatively small and drawn from two branches of the bank in two regional capitals only. Thus the generalization of the result is not much more effective. Further the study recommends that the same study be conducted with other commercial banks to compare the result.

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## **A review of literature into the nature and purpose of collective social entrepreneurship**

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**ABSTRACT** Collective Social Entrepreneurship is becoming a subject of interest in the entrepreneurship literature because of its contribution in economic growth and poverty reduction. This paper examines the nature and purpose of collective social entrepreneurship otherwise referred to as collectivism. This paper examines over fifty literatures and articles on collective social entrepreneurship in order to identify and establish its nature and purpose. The paper finds that collaborations, cooperatives, alliance and movements are important inputs and outcomes of collective social entrepreneurial work, which exist both within and across sector. The paper also finds different forms of collective social entrepreneurs with different social missions, as well as contractual and non-contractual forms of collective entrepreneurship. The paper concludes that although none of the forms collectives captures the unique mix of social and economic incentives that characterize collective social entrepreneurial ventures. However, successful collective social entrepreneurs often simultaneously leverage many of the existing forms including relying on cooperative models and developing cross-sectoral collaborations.

*Keywords:* Entrepreneurship, Social entrepreneurship, Innovation, Collective Action

## Introduction

Collective action among organisations is often coordinated by other formal organizations such as trade associations, formal political coalitions, producer or agricultural cooperatives, research and development consortia, formal industrial alliances, associations of cultural organizations or government agencies, federations of trade unions, and the like (William, 2000). Although various theories have been applied to understand these collective institutions, the focus has been largely on how such associations help to facilitate exchange and cooperation among member organizations (Streeck and Schmitter 1985; Katz and Ordover 1990; Williamson 1991; Granovetter 1995). Consequently, research has tended to emphasize member organizations as the primary units of analysis, looking at how their strategies, objectives, and performance are affected by their inter-organizational relationships (Keister, 1998). Far less research has focused primarily on collective organizations themselves, so very little is known about their nature, purpose, strategies and structures and even less about the dynamics of their formation and growth. Collective entrepreneurship combines business risk and capital investment with the social values of collective action. It is an event that exists when collective action aims for the economic and social betterment of a locality by means of some transformation of social norms, values, and networks for the production of goods or services by an enterprise (see also David, 1999)

## Literature Review

Collective Social entrepreneurship can be characterized as persons conducting business together with at least one partner sharing ownership with them. Wilken (1977) uses collective entrepreneurship to describe the source and structure of economic development, i.e., whether it was an individual, family, a group of unrelated people, or government that formed a business venture. He used this categorisation to describe the economic development of different countries – the form of development undertaken being a reflection of culture, economic conditions, and public policy.

David Wolfe (1997) uses the term to describe the nature of interactions that exists between individual firms. This is in the context of a collective learning process in the acquisition and use of new technical knowledge amid global and institutional restructuring. Collective entrepreneurship, therefore, plays a part in a nation's institutional capacity for adaptation.

Jonsson (1997), on the other hand, uses collective entrepreneurship for the role it plays in the capital accumulation process and innovation. He argues against reducing 'entrepreneurial function' cannot be reduced to an individual or entity and that the entrepreneurial function best realized through a process of collective entrepreneurship involving actors such as central, state and local governments and international organizations who in the main are responsible for regulating and promoting conditions of competition and competitiveness. This use of the term collective social entrepreneurship accomplishes two goals. First, as Jonsson (1997) posits, the

categories of actors involved in collective entrepreneurship and second, the definition of the categories of collective-entrepreneurship interrelationships. For example, the state and the firm may act collectively around procurement, science parks, and tax allowances for innovative firms.

The role of collectives in driving social change is evident in the organizations literature. However, of the many manifestations of collective action, three major forms are social movements, community cooperatives, and cross-sectorial collaboration. The following brief overview of these three types of collectives serves as a background for studying and understanding the unique contribution of collective social entrepreneurship. Social movements play an integral role in the formation of markets and in field level change.

Researchers exploring collective entrepreneurship as a form of socio-political change are referring to entrepreneurial activity that integrates economic, social cultural and political goals (Bataille-Chetodel & Huntzihger, 2004; Chouinard & Forgues, 2002; Connell, 1999). Many of the investigations into collective entrepreneurship focusing on regional and local development stem from initiatives and policies to support the social economy (Graefe, 2006; Laville, 2003; Spear, 2000). Chouinard and Forgues (2002) suggest entrepreneurship may occur on a continuum from private entrepreneurship to collective entrepreneurship focusing on providing services to workers associations of workers and community groups. Practical examples of collective entrepreneurship in the social economy literature include non-profit organizations, cooperatives, foundations, voluntary organizations, public interest groups and social movements (Burress & Cook, 2009; Spaey, 2004).

The writings on social business have centred on the investigation of either single business visionaries or single social ventures (Dacin et al, 2010; Dacin et al, 2011; Mair et al, 2012; Mair & Martí, 2006). In any case, another perspective has developed as of late, researching another level of examination: a variety of subjects working all in all to acquire a social effect. Montgomery et al (2012, p. 376) proposes the idea of "Aggregate Social Business", which is characterized as the "joint effort among comparative as well as various performing artists with the end goal of applying business standards to tackling social issues".

Sud et al., (2008) contend that social business cannot be required to tackle social issues on an extensive scale if these are handled by single social associations in light of the fact that, characteristically to the setting in which social ventures work, there are issues whose arrangement require a communitarian exertion of numerous on-screen characters crosswise over distinctive areas and institutional limits. Pies et al., (2010) propose that social business ought to act at diverse levels of operation suggesting a participation of a few performing artists, subsequently raising the level of investigation from the single social entrepreneurs to a group of associations and subjects. This viewpoint is advanced by Santos (2012), who proposes a hypothesis of social business enterprise where social entrepreneurs, concentrated on quality creation instead of on worth catch, typically work in portions of the economy where externalities are critical and wild. The understood result is that we are liable to discover social undertakings in connections where the social effect they create is grown all things considered with the beneficiary subjects of their externalities. Additionally, Kania & Kramer (2011) propose such point of view

focusing on the contrast between aggregate effect and detached effect Writing Survey Today, "Social enterprise" can be extensively conceptualized as undertakings and entrepreneurs that mirror the two components of an) an all-encompassing social mission and b) entrepreneurial imagination (Corner & Ho, 2010; Mair & Martí, 2006; Peredo & McLean, 2006). Be that as it may, as noted by Montgomery et al. (2012), Dacin et al. (2011) and Lance (2006), early entrepreneurs at characterizing social enterprise were for the most part affected by the "immense man" school (Lance, 2006), with a solid concentrate on the deeds accomplished by single, chivalrous business people emphatically dedicated to tackle a social issue, and on the arrangements they authorized.

Work by Beater (1997) emphatically centred on the figure of a social business visionary, which is broadly investigated in her own qualities, attributes and systems for activity. Average of this flood of exploration is narrating, used to present the picture of the social business visionary. This sort of centre can likewise be distinguished in the work of Dees (1998, 2007), who predominantly alludes to single people when depicting the distinction between social business visionaries and excellent business visionaries (1998); and when examining the capability of social business enterprise in correlation to government's and ordinary philanthropy's activities in managing social issues (2007). Alvord et al., (2004) give a few stories of effective social entrepreneurs and, examining their qualities to locate a typical example, unequivocally concentrate on the attributes of the social business visionaries that established them, similar to social foundation, nationality, past occupations, and so on. Moreover, Seelos & Mair (2005), exploring the plans of action sanctioned by social entrepreneurs, concentrate on social business visionaries and their stories of achievement. Another prominent occasion of the attention on the single business visionary is given by Tan et al., (2005), who, learning the substance of the "social" and the "entrepreneurial" component inside social business, do as such by alluding to what it implies for an individual to be entrepreneurial and socially dedicated.

The emphasis on the single individual has all the more as of late advanced into an attention all in all entrepreneurs. As analysts began to concentrate on the social undertakings as associations, social business has been progressively related in writing with associations more than with people. This is the present most far reaching position in writing and numerous writers give plainly association based meaning of social business (e.g. Dart, 2004; Harding, 2004; Haugh, 2006; Hockerts, 2006; Lasprogata & Cotten, Marya, 2003; Thompson & Doherty, 2006). Seelos & Mair (2007) examine the authoritative plans of action of social undertakings in "Base of the Pyramid" situations. Austin et al (2006), when examining the contrast in the middle of social and business enterprise, do as such by pondering hierarchical models and looking at social and business entrepreneurs, not business people. Sprout (2009) examines social entrepreneurial associations when characterizing the run of the mill ways took after by social business to get the last point of neediness decrease. He likewise utilizes the same hierarchical concentrate in Blossom & Smith (2010) when proposing a hypothesis of the components driving the scaling up of social ventures' effect. Mair & Marti (2009) work on how social business identifies with institutional voids concentrates on an association overall, despite the

fact that piece of the information had people as the unit of examination. Analysts chipping away at the issue of social effect estimation do as such by considering the routines associations utilization to evaluate their effect (Nicholls, 2009), and/or proposing appraisal techniques connected by social ventures (Lepoutre et al, 2013; Nicholls, 2009). Friedman & Desivilya (2010) demonstrate the constructive outcome in provincial advancement of social ventures activities when related with clash engagement arrangements, and their proposed model spotlights on associations establishing social business enterprise. Mair et al (2012) offer a typology of conceivable models of social entrepreneurial associations, researching the sorts of capital utilized by social ventures.

On a fundamental note, Sud et., al (2008) contend that social entrepreneurs/business visionaries are hindered in tackling social issues on an extensive scale when they handle only them. The characteristically complex nature of the issues handled by social entrepreneurial activity makes it more probable that such issues can be explained just through a collective exertion of numerous on-screen characters, crosswise over diverse segments and institutional limits, who can in this manner influence on distinctive abilities and assets. An attention on aggregate activity is additionally proposed by Kania & Kramer (2011, 2013) and Hanleybrown et al (2012) whose works advocate for the need of "aggregate effect" (Kania & Kramer, 2011, p. 36) so as to attain to enduring results in handling imperative social issues. Contrary to secluded effect, aggregate effect is characterized as the "responsibility of a gathering of critical performing artists from distinctive divisions to a typical motivation for explaining a particular social issue" (Kania & Kramer, 2011, p. 36). The contrasts between separated effect and aggregate effect are then considered top to bottom by Hanleybrown et al. (2012) and predominantly respect the way that aggregate social effect obliges numerous subjects cooperating with an aggregate mentality brought about by being a piece of a framework, contrary to the subjective/individualistic methodology of regular single social endeavours. At long last, this point of view is additionally suggested by Santos (2012). In Santos' work, social endeavours are described as being centred on worth creation instead of on quality catch - dissimilar to fantastic business revenue driven endeavours - and hence they locate their common place in fragments of the economy where externalities are vital and wild.

### **The Term "Collective"**

Wide variations in the use of the term collective entrepreneurship have left little common ground on which to build a comprehensive theory of collective entrepreneurship. Substantial discrepancies in the usage of the term leave researchers open to criticism that points to a lack of precise definitions or citations to the collective entrepreneurship literature (Weissert, 2002). Among the authors surveyed for this paper, we noted the descriptor collective is utilized in three primary ways: 1) to recognize multiple parties engaged in entrepreneurship 2) to refer to the type of economic good generated by the entrepreneurial process and 3) to denote asset

ownership. When collective, in fact, refers to multiple actors engaged in the entrepreneurial process, wide variation exists as to whether collective entrepreneurship is among risk-capital providers, among employees, among firms, among governments officials, among universities, or among a combination of these actors. The stage in which multiple actors become engaged in the entrepreneurial process (e.g. opportunity identification, venture financing, opportunity development) also affects whether authors choose to utilize the collective entrepreneurship label (Byrd, 1990; Tardieu, 2003).

When entrepreneurs are primarily interested in the generation of public, common pool, or club goods, we find certain authors utilize the term collective to distinguish from entrepreneurial endeavours in the pursuit of private goods (Frederick & Henry, 2004; Vaillancourt & Chartrand, 2005). This connotation of collective is most often present in the social economy and ethnic entrepreneurship literature. Several authors have also coupled the creation of collective goods with Hofstede's cultural dimensions of individualism and collectivism (Hofstede, 1980). This has been the cause for some debate, however, as multiple actors can cooperate to generate a collective good without displaying cultural traits of collectivism. And, true collectivism is argued to be incompatible with basic components of the entrepreneurial process such as change and innovation (Morris, et. al. 1994).

Finally, a proportion of literature surveyed for this paper also view entrepreneurship by socialist collectives as collective entrepreneurship. Resources are owned by the collective; the collective makes decisions with respect to the employment of these collective assets; and the collective bears investment risk (Zupanov, 1975). Thus, entrepreneurial endeavours utilizing collectively owned assets constitute another manifestation of collective entrepreneurship. This concept was explored in depth by socialist regimes in an attempt to improve worker motivation in labour-managed firms (Obradovic, 1994).

## **Concept of Entrepreneurship**

Various interpretations of the word collective often constitute an initial stumbling block to opening dialogue among researchers as different interpretations of the term collective are often a direct result of stark ideological differences as to the normative role of the individual and the entrepreneur in society. These differences are compounded by differing views as to what constitutes entrepreneurship—business ownership, innovation, arbitrage, or creativity (Foss & Klein, 2005). Thus, of primary interest to scholars of collective entrepreneurship is the advancement of a theory of entrepreneurship.

## The entrepreneurial element in the definition

Research on entrepreneurship has been marked by the emergence of various streams focusing on different aspects of the phenomenon. An early stream centered on the question of how the personality or background of the entrepreneur determines entrepreneurial behavior (McClelland, 1961; Kets De Vries, 1977). Because of methodological and definitional problems (Low & MacMillan, 1988) inherent in the approach based on the traits and/or psychological profiles of entrepreneurs (see Sexton and Bowman (1985) for a review of this literature), various authors suggested in the mid-1980s that the focus of entrepreneurship research should be the entrepreneurial process or entrepreneurial behavior (Gartner, 1985, 1988; Sandberg & Hofer, 1987). Today it is widely recognized that the phenomenon is far more complex and heterogeneous than was assumed in the 1980s (Bruyat & Julien, 2004). Also, an increasing number of researchers have studied entrepreneurial processes outside of the business sector (Morris & Jones, 1999; Zerbinati & Souitaris, 2005) and the role of entrepreneurship in society (Steyaert & Katz, 2004). Although the field is still characterized by multiple paradigms, the notion of opportunities has been widely accepted as a defining element of entrepreneurship (Shane & Venkataraman, 2000; Venkataraman, 1997; Ardichvili, Cardozo, & Ray, 2003). Shane and Venkataraman (2000), for example, describe entrepreneurship as a field that analyses how, by whom, and with what effects opportunities to create goods and services are discovered, evaluated, and exploited.

Research on social entrepreneurship has to some extent replicated the empirical and theoretical evolution of entrepreneurship. Researchers have focused on the personality of the Social entrepreneur, the particular behavior or process involved, or the social opportunity, in order to emphasize the entrepreneurial nature of the phenomenon and thus differentiate it from other phenomena. A popular –early– stream of research has focused on the *personality of the social entrepreneur*. According to studies following this approach, social entrepreneurs are characterized by very special traits (Drayton, 2002), special leadership skills (Henton, Melville, & Walesh, 1997; Thompson et al., 2000), a passion to realize their vision (Bornstein, 1998; Boschee, 1995), and a strong ethical fiber (Bornstein, 1998; Drayton, 2002). To become a legitimate field of scholarly investigation this stream of research needs to overcome methodological problems such as a bias towards studying successful entrepreneurs or the limited ability to differentiate between successful entrepreneurs, social entrepreneurs, managers, politicians and social activists. Despite the ongoing momentum of research aimed at identifying distinctive entrepreneurial personality traits, we are skeptical whether this approach will elucidate key differences between social entrepreneurs and other actors. It has been repeatedly pointed out that “who the entrepreneur is” is not the right question to ask (see also Gartner, 1988). Building on a behavioral tradition in entrepreneurship, we argue that examining the set of activities underlying

social entrepreneurship as a process may be a more fruitful approach. A number of researchers have emphasized the entrepreneurial process, i.e., “how” entrepreneurs act, as a way of differentiating between social initiatives and social “entrepreneurial” initiatives. For instance, building on traditional entrepreneurship literature, Dees describes what social entrepreneurs do as “engaging in a process of continuous innovation and acting boldly without being limited by the resources they currently have in hand” (1998:4). Finally, a recent stream of research has focused on the “social value creating” nature of the opportunities entrepreneurially discovered and exploited, in order to distinguish social entrepreneurship from other entrepreneurial phenomena (Hibbert, Hogg, Quinn, 2002; Mort, et al, 2002; Guclu, et al., 2002).

### **The concept of social entrepreneurship**

The concept of social entrepreneurship means different things to different people and researchers (Dees, 1998). One group of researchers refers to social entrepreneurship as not-for-profit initiatives in search of alternative funding strategies, or management schemes to create social value (Austin, Stevenson, & Wei-Skiller, 2003; Boschee, 1998). A second group of researchers understands it as the socially responsible practice of commercial businesses engaged in cross-sector partnerships (Sagawa & Segal, 2000; Waddock, 1988). And a third group views social entrepreneurship as a means to alleviate social problems and catalyze social transformation (Alvord et al., 2004; Ashoka Innovators, 2000). Numerous definitions, stressing different aspects and dimensions of social entrepreneurship, have been offered. It is important to note the conceptual differences between definitions. Definitions of social *entrepreneurship* typically refer to a process or behavior; definitions of social *entrepreneurs* focus instead on the founder of the initiative; and definitions of social *enterprises* refer to the tangible outcome of social entrepreneurship. Despite the large number of definitions, systematic attempts to map initiatives and definitions are rare (see Boschee (1995) and Waddock and Post (1995), for two exceptions). While complementary definitions, each focusing on different aspects of the phenomenon, are not necessarily an impediment in the search for theory (Baumol, 1993), we still do not have a comprehensive picture of the phenomenon and lack a clear understanding of how social entrepreneurship should be studied.

### **The social element in the definition**

Probably, the greatest challenge in understanding social entrepreneurship lies in defining the boundaries of what we mean by *social* (Seelos & Mair, 2005a). Viewed broadly, the term “social” refers to initiatives aimed at helping others (Prabhu, 1999). At first glance, social entrepreneurship might be thought to differ from entrepreneurship in the business sector in that while the latter is associated with the profit motive (Cole, 1968), social

entrepreneurship is an expression of altruism. We argue against such a dichotomous line of thinking for two reasons. First, although social entrepreneurship is often based on ethical motives and moral responsibility (Bornstein, 1998; Catford, 1998), the motives for social entrepreneurship can also include less altruistic reasons such as personal fulfillment. Secondly, and more importantly, entrepreneurship in the business sector also has a social aspect. Venkataraman (1997, p. 133) made this point forcefully:

“As Schumpeter (1934) pointed out several decades ago (and Adam Smith much earlier), the personal profit motive is a central engine that powers private enterprise and social wealth. Entrepreneurship is particularly productive from a social welfare perspective when, in the process of pursuing selfish ends, entrepreneurs also enhance social wealth by creating new markets, new industries, new technology, new institutional forms, new jobs, and net increases in real productivity”

In other words, although the profit motive might be ‘a central engine’ of entrepreneurship (Schumpeter, 1934; Baumol, 1993), it does not preclude other motivations. As Velamuri (2002) pointed out, altruism and entrepreneurship differ only in degree, not in kind. Previous research on entrepreneurial motivation, such as McClelland’s seminal piece on the need for achievement (McClelland, 1961) or studies on the desire for independence (Hisrich & Brush, 1986) or the propensity to take risks (Brockhaus, 1980; Liles, 1974), has compellingly demonstrated that entrepreneurship is not only based on motives to increase personal wealth. (See Shane, Locke, and Collins (2003) for a review of the importance of motivation to the study of entrepreneurship.)

## **Types of collective social entrepreneurs**

### **Co-operatives**

Co-operatives may be the clearest example of collective entrepreneurship. They are, by definition, a collective effort. Accordingly, co-operatives are a group initiative to self-manage combined resources and to share the organisation’s success or failure (Jonsson, 1997). From another perspective, co-operatives correspond to the logic of collective action. First, co-operatives are *privileged* groups: it is expected that the net benefit to at least one individual is positive. For example, this is achieved through securing a market for the co-operatives goods or from the distribution of profits to the membership. Second, convention may also play a role in keeping co-operatives functioning. As (Spear, 2006) stated, entrepreneurship is more likely to occur when embraced as a social value. This underlies the importance of articulating the values of co-operatives, as the International Co-operative Alliance has done (Thordarson, 1990, p. 1).

Jonsson (1997) cites factor contributing to success in remote fishing communities that applies well to the many co-operative experiences. That is, a homogenous

population with a clear sense of identity stemming from common culture, language and religion. This, too, has implications for the role of convention. It may also lend support to the proposition that larger groups are more likely to succeed if made up of overlapping smaller groups.

## **Social Capital**

Social capital, like collective entrepreneurship, is a term used in various capacities. As Wall et al., (1998, p. 319) suggests with reference to social capital, “elasticity in applicability might threaten its utility as a social construct”. The authors suggest that one appeal of social capital is its possible links to other disciplines such as economics. According to Wall et al., (1998 p. 312), social interactions and networks “are construed as capital when some transformation takes place based on incorporating those resources”. Green (1996) illustrates this connection more explicitly – he links the importance of social capital to entrepreneurship and small business development.

## **Purpose of collective social entrepreneurs**

### *Inter-organisational gains*

Literature on collective entrepreneurship that has evolved considers mutual gains that can be achieved through dynamic cooperation and organizational hybrids in markets. Inter-organizational gains literature focuses on explicit or tacit inter-firm coordination for the purpose of rent-seeking through mechanisms such as networks and alliances, clusters and industrial districts, and franchise agreements (Gordon, 2008). Although there is some mention of efficiency gains due to coordination, the literature on alliances and franchise agreements addresses the generation of rents which may be best described as positive payoffs from a game theoretic point of view. When considering collective entrepreneurship in the form of industrial districts, however, economic rent-generation is more closely related to the concepts of positive externalities or agglomeration economies (Gordon, 2008).

### *Networks and Alliances: formal and Informal*

Mourdoukoutas (1999) describes collective entrepreneurship as a fluid organizational structure that provides opportunities to the hundreds or even thousands of entrepreneurs-hipsters scattered often found among suppliers, distributors, customers, and collaborators to come forward with the information they possess and to join forces for the discovery and the exploitation of new business opportunities (Mourdoukoutas, 1999, p. 134; Mourdoukoutas & Papadimitriou, 2002). From this starting point, Mourdoukoutas includes what he labels as internal and external (i.e. intra-firm and inter-firm) collective entrepreneurship in his study of the development of entrepreneurial networks.

Mourdoukoutas also makes an important contribution in distinguishing between contractual and non-contractual forms of collective entrepreneurship. This criterion

can be applied across various types of collective entrepreneurship described in this article. Further investigation of the structure of collective entrepreneurship, contractual or non-contractual, formal or informal, is warranted if scholars are to understand the mechanisms and incentive structures that sustain collective entrepreneurship. Two possible avenues for development include the (1) development of a continuum from non-contractual to contractual to describe collective entrepreneurial networks and (2) an evolutionary framework that explores variations in contracting among co-operators over time (Moudoukoutas, 1999). Collective entrepreneurs may begin by cooperating under informal agreements, developing contractual arrangements over time. Or, the opposite may be the case: as parties develop familiarity and trust they may discontinue the use of formal contracts in some instances.

### **Concluding remarks**

Literature reveals different dimensions to collective social entrepreneurs. Collective entrepreneurship adds a further dimension of complexity—the propensity for collective action. This dimension is significant because it sets collective entrepreneurship apart from other economic development strategies. It requires a deliberate choice to pursue collectivism over individualism. Where there is a choice, there must also be a balance. Ultimately, rural communities will have to embrace a range of development strategies. They will have to find ways to link bottom-up and top-down efforts, to find synergy between individualism and collectivism. Toward this balance, collective entrepreneurship embraces the social benefits of collective action with the innovation and power of the market.

The literature clearly shows the relevance of the collective dimension. First of all, each actor adhering to the collective had to make collective-specific investments to adapt to the shared processes underpinning the collective's activities. The collective generate many activities and meetings dedicated to the project's values promotion, so that those who decide to join the project can be aware of the related commitment and tasks. Literature also revealed that investment in getting to know each other collective was crucial. In particular, it is necessary to invest in the management of relations with those who want to be part of the project. Acquiring generic skills or general information about the project is just the beginning. It is very important to know each other very well, to develop trust and tacit coordination in such a way that the collective's activities develop according to the set of shared values.

From the foregoing discourse, the collectives creating a social impact might be individuals that are not necessarily social enterprises (Alvord, 2004). That is, the collective as a whole might act as a social enterprise (when considering the aggregated results of its action) even though all its components are not individually acting as social enterprises. In particular, the collective's social impact can be actually related to that of a social enterprise. This means that using a collective point of view can allow us to detect cases of social entrepreneurial action that could be missed when focusing on the single actors. Furthermore, as social entrepreneurial action takes place only at the collective level, it means that all actors have the same importance in the social entrepreneurial action. If one of them leaves, whether it is

profit or non-profit organization, the collective might lose the ability to act as a social enterprise.

Also, collaborations, cooperatives, alliance and movements are important inputs and outcomes of collective social entrepreneurial work and they exist within sector or across sector. Literature also revealed different forms of collective social entrepreneurs with different social missions, as are different contractual and non-contractual forms of collective entrepreneurship. In conclusion, social movements, community cooperatives, and cross-sectoral collaboration provide an insight into collective social entrepreneurship. These latter forms of collective action highlight the importance of acquiring and deploying resources from multiple actors through a variety of activities and strategies to share ideas, mobilize supporters, bring together diverse viewpoints, and collaborate to drive change. Although related, none of these forms captures the unique mix of social and economic incentives that characterize collective social entrepreneurial ventures. Also, successful collective social entrepreneurs often simultaneously leverage many of these existing forms including relying on cooperative models and developing cross-sectoral collaborations.

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**Appendix 1: Forms of Collective Entrepreneurship**

Actors	The state: governments, municipalities and institutes	Organized interests	Firm	Individual
The state: governments, municipalities and institutes	Supporting international R&D projects, e.g. EUREKA, ESPRIT, ERASMUS; developmental plans for R&D on regional level; Establishing R&D funds and institutions, science parks etc.; tax reductions for R&D, procurement etc.	Collaboration between employers organizations, trade unions and the state in developing R&D and innovative institutes run by organized interests	Procurement, science parks, tax allowances for innovative firms etc. Technological transfer via foreign MNCs (c.f. Taiwan, S-Korea, Singapore etc.)	Centres and laboratories for inventive individuals
Organized interests of capital and labour	R&D projects in the welfare state, health and work conditions. Collaboration in the field of transformation of skills and flexibility of labour and technology as well as spatial flexibility of labour	R&D funds and institutes established and run by employers organizations and/or trade unions from different branches of industry	R&D funds and institutes established and run by collaboration and run by employers' organizations and/or trade unions from different branches of industry	R&D contracts with individuals and access to laboratories and other facilities
New social movements: environmentalist s, consumer organizations, women's movements	R&D projects related to the improvement of the environment, consumer information and health standards and gendered technology and discrimination	R&D collaboration by new social movements related to the interests of the new social movements	Collaboration as concerns definition of market niches and access to laboratories and other facilities	R&D contracts with individuals
Firm			R&D and innovation networks of firms; user-producer networks	firms provide innovative individuals with risk capital, mass produce prototypes and bring them to the market
Individual				Groups of individuals initiate and finance R&D projects

Source: Jonsson (1997)



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