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Entrepreneurial and Technical Capability in Relation to Productivity: Basis for Resource Generation Development Plan

SALLY M. CADIZ
ORCID ID - 0000-0002-0822-4987
chmsc_rds@yahoo.com
Carlos Hilado Memorial State College, Philippines

This study determined the entrepreneurial and technical capability of Carlos Hilado Memorial State College in relation to productivity, basis for the formulation of Resource Generation Development Plan. The researcher- made questionnaire was based from the Entrepreneurial Capability Indicator Questionnaire 2005 conducted to 150 CHMSC faculty members of the four campuses. Descriptive Method was used to determine the profile and responses on entrepreneurial and technical capability of the college.T-test and ANOVA were used as inferential statistical tools. Entrepreneurial and technical capability of the faculty members was to a moderate extent. Productivity capability was low extent. No significant differences were noted in the level of perception of faculty members in terms of Entrepreneurial, Technical and Productivity Capability when grouped according to different variables. The acquisition, utilization and production aspects be allocated to capital investment for sustainable programs and projects developed by the faculty members. The faculty members have to formulate one project proposal per semester for the resource generation development plan of the college.

Keywords - Entrepreneurial, Technical and Productivity Capability, Resource Generation Development Plan, Descriptive Research, Philippines

INTRODUCTION

An institution has quadruple functions and one of its functions is production (CHED, 2005).

The school to become more progressive must be a business driven institution (Drucker,2004) without hampering the quality of instruction. A mindset to change and look into new ideas or concepts to innovate (Concepcion, 2006) that will bring new business and enforce productivity. The trend now is to develop institutional innovation that will replace or transform the old one with a mechanism (Teich, 1997) which will further increase production of goods and services since today's workplace is characterized by unprecedented change and becoming globally competitive.

The challenge is indeed thrown to the members of the educational sectors to get involve in productivity. Emphasizing the role of innovation will precipitate major structural changes in the academe and most particularly the State Colleges and Universities. Observations and experiences indicate that the old concept of an educational institution to focus on instruction is now considered obsolete by a process of "creative destruction" according to Joseph Schumpeter as cited by Liu 2001.

As new institutions compete with established industries for labor, materials and goods, they drive up the resources including human resources to produce quality goods and services. Carlos Hilado Memorial State College (CHMSC) as an institution of higher learning is desirous to involve in resource generation development plan in response to the government plea of austerity measures. The Medium Term Development Plan of NEDA (2004) affirmed that State Colleges and Universities must come up with a resource generation development plan to facilitate and finance school improvements like buildings and other related infrastructures without hampering the National Budget as embodied in the Normative Financing Guidelines 2006.

In response to this, business establishments and manufacturing industries manned by the faculty members in partnership with the students, producing goods and services designed by faculty members and the students, and support provided by the school were the dreams

that the school administration is trying to realize. Further, the theory of Halpin (1995) believes that the colleges will produce a sufficient quantity with the right quality human resources needed for the growth of the economy and that the economy will in fact put these resources into productive use. He stressed that administrators and managers should rise above the traditional and written policies and should focus on long term culture by introducing continuous programs in the management systems imbued with a commitment to change focusing on the school's vision, mission, goals and objectives.

It is along these basic premises that this study was conducted to find out the extent of entrepreneurial and technical capabilities of CHMSC in relation to productivity as perceived by the faculty members. It is also the aspiration of the researcher to design a resource generation development plan for the college capitalizing on its entrepreneurial capability on the aspects of familiarity, research and development support, and social and cultural development support while on its technical capability on the aspects of acquisition, utilization, and production.

On Entrepreneurial Capability

Entrepreneurial Capability means the ability to innovate and to create things with value (Concepcion, 2006). It is the process of converting ideas into goods and services and the ability to analyze and evaluate business opportunities (Paragas, et .al. 2005). Operationally, entrepreneurial capability means the capability of an individual to familiarize, conduct research and development support and to have social and cultural development support.

Citing the importance of entrepreneurship as a process of creating or converting ideas into goods or services requires a strong desire to build and create products and services to obtain profit or to increase performance gearing towards quality production. It is also a process that can contribute in improving the quality of life such as goal setting, information seeking, proactive management and systematic planning (Paragas,et al 2005) will be an overwhelming desire to achieve and succeed spurred with knowledge and awareness of the market, service-oriented and high energy level (Villar, Jr.1990). It is the art of finding profitable solutions to a problem. According to Prof. Nathaniel Left as

quoted by (Fajardo, 1994), it is the capacity for innovation, investment and expansion in new markets, products and techniques. This concept, relate to the theory of Joseph Schumpeter as cited by Liu (2001) which bespeak of inventions from the entrepreneur's innovations. Accordingly, he pointed out that entrepreneurs innovate not just by figuring out how to use inventions, but also by introducing new means of production, new products, and new forms of organization. These innovations, take just as much skill and daring as does the process of invention (http://wwweconlib.org,2008).

It is of great value that specific skills and knowledge directly relating to the business venture and a desire to do business opportunity are the capabilities the school were trying to realize (SUC Level 4 Guidelines, 2004). In economics, one of the four major factors of production aside from land, capital and labor is entrepreneurial capability of an enterprise. It is the spirit that keeps it growing without such ability; the other productive resources tend to be inefficient (Fajardo, 1994).

On Technical Capability

Technical capability refers to the ability of the college to identify and know how to get out of the product in good style (Paragas, et. al, 2005). It also refers to innovativeness and inventiveness (Concepcion, 2006). Operationally, as used in the study it refers to acquisition, utilization and production.

Citing the importance of Skills and Practices in devising a program of action or integrating all possible activities that can be accomplished at hand and to prevent one from committing mistakes, expedites work and become a means of producing goods and services which become the key factors to become globally competitive and acquire world class knowledge and skills in order to develop the quality of specialists and manpower required in launching the economy on high growth path so to speak in the higher education. Mastering Technologists' skills in education, be competitive without losing its capacity to cooperate with other institutions; react to market forces but not to neglect the sustainability of human development; be borderless without losing the nation state foundation (Shahani, 1997) are the possibilities of changing the history of education, its collision with the future but its history conceptualizes better programs of the school.

Technical capability as indicative of the technologists' skills was a good investment in developing the educational system and the same time will change the history of education in producing sufficient quantity with the right quality, human resources needed for the growth of the economy, and that the economy will put these resources into productive use. The managers/ administrators should rise above traditional and written policies and should focus on long term culture, introduce continuous programs in the management systems that appraise and reward; have line and staff imbued with a commitment to develop; to coach and mentor; should ensure that the development of skills are integrated with school vision, mission, goals and objectives; and above all, should foster an environment where mistakes are properly dealt with and both the teacher and supervisor should focus on outcomes and objectives (Halpin 1995).

Combining the two capabilities, it will create a climate of educational reform in which schools feel the continued pressure to improve. The desire to improve is in the entrepreneurial spirit of a person. The global drive for improved educational performance will result in a tightly prescribed target at the center of systematic and structural change (Elmore, 2000). The importance of technological advances could be attributed to the facilities and fabricating technology which have bearing to the productivity of the organization thus, the making of an invention as one of the means to accomplish change in one's economic status and interest in technical things is a possible contribution to the growth of the society (Simon, et. al, 2004). Researchers have been exploring the possibility that skills and expertise and new venture formation are associated (Herron, 1990; Walsh, 1994).

Role of Productivity

Productivity is a generative source of continuing activity. It is defined as the measure of the efficiency of production (Investopedia, 2009) as mandated function of higher education (CHED, 2005). Productivity also ensures a decent standard of living for workers and their families and contributes to the competitiveness of enterprises through improved productivity of workers. Productivity enhancement comes from technology advances and in the increased of skill levels within the workforce

(http://www.investopedia.com/terms/p/productivity). Operationally, as used in this study, it refers to the college entrepreneurial and technical capability. This consideration can be manifested in any given companies be it in academe or an industry for as long as the safety of the workforce can be attended to effectively (Zaragosa,2006).

With these considerations, the Malaysian educational system had visualized their school in the year 2020 to have a sustained productivity –driven growth higher education, a challenge which have allowed them to prepare their workforce to have critical thinking and creativity for participation in the global economy for the 21st century (Mallinger, 1998). Likewise, in today's global business environment, companies may have to grow to survive, and one of the best ways to grow is by merging with another company or acquiring other companies (McGarvey, 2005). A mission abetting change which the academe has desired when it merges with the four campuses of Carlos Hilado Memorial State College through Republic Act # 477.

FRAMEWORK

This study was based on the theories of Teich (1997), Schumpeter as cited by Liu(2001), and Halpin (1995). The trend now is to develop the institutional innovation that will transform or replace the old one with a mechanism which will increase production and will lead into entrepreneurial and technical undertaking of creating a products and services (Teich, 1997).

Emphasizing the role of innovation will precipitate major structural change in the academe particularly, the State Colleges and Universities. The old concept of an educational institution to focus on instruction is now rendered obsolete by a process of "creative destruction " according to Scumpeter as cited by Liu, 2001.

Halpin (1995)believes that the college should produced sufficient quantity with the right quality human resources needed for the growth of the economy and that the economy should put the resources into productive use.

These theories brought realization so that the sufficient stocks of unexploited inventions are a chance and an opportunity for the

academe to become an entrepreneurial school capitalizing on the Faculty Members' capability to innovate and invent new technology or develop products and services that will expose the schools' stockpile of knowledge in entrepreneurial and technical capabilities that will bring a change in the academe.

In reference to change, the school has played a contradictory roles. On the side of change the academe is devoted to inquiry, discovery of knowledge, and learning. The school is supposed to be imaginative, revisionist or even advanced when it comes to innovation. The college is a principal engine of economic competitiveness and individual self-betterment. All these aspects are missions requiring a change.

The theories cited by Liu on the belief of Schumpeter, Halpin , and Teich have taught the school to realize that resources started to dwindle and educational quality is affected by the high cost of commodities and global problem. The college responsibility should engage in entrepreneurial and technical capability to have better productivity through developing a technology, design a project study or explore in advanced instructional materials for mass production in partnership with the students.

This is what Carlos Hilado Memorial State College is now trying to do.

OBJECTIVE OF THE STUDY

The purpose of this study was to determine the extent of entrepreneurial and technical capability of Carlos Hilado Memorial State College in relation to productivity as basis for resource generation development plan.

MATERIALS AND METHODS

The descriptive method of research was used in this study. Descriptive type of research, as defined by Calmorin (2004), concerned in determining the nature of things by synthesizing it into parts. This can generate a large amount of information at a single time through the administration of researcher made questionnaire based on the concepts of Entrepreneurial Capability Scale High Technology

Indicators of Georgia University (http.//www.tpac.gatechedu/hti2005).

The dependent variable is the faculty member's perception of the college capability regarding its Entrepreneurial and Technical Capability in relation to Productivity.

The independent variables was the faculty's profile such as; age and gender, civil status, educational qualification, field of discipline, position classification and teaching experience.

The study employed frequency counts, means and standard deviation as Descriptive Statistics. Inferential statistics use was ANOVA and t-test set at .05 level.

The respondents of this study were the randomly selected full time faculty members from the four campuses of Carlos Hilado Memorial State College (CHMSC) namely; the twenty five (25) full time faculty members of Fortune Towne, forty (40) Alijis campus both are located in Bacolod City; fifty five (55) from NOSOF Binalbagan and one hundred nineteen (119) from CHMSC Talisay campus. The total population of the four (4) campuses of Carlos Hilado Memorial State College (CHMSC) was 239. Out of the two hundred thirty nine (239) faculty members, only one hundred fifty (150) faculty members were chosen as sample respondents of the research study. The Sloven's formula as cited by Pagoso (1978) was used to determine the total sample size of the respondents.

The .05 level of significance was used as the criterion for the acceptance and rejection of the null hypothesis.

RESULTS AND DISCUSSION

The findings of the present investigation were:

1. The profile of respondents were as followed: majority of the respondents were female, comprising of younger teachers most were married, with BS degree holder and belonging to academic disciplines and were holders of instructors position and with longer teaching experience.

Table 1. Profile of the respondents

Independent Variables	Frequency	Percentage
Age and Gender Male (46-64) Female(23-45)	54 96	36% 64%
Total	150	100%
Civil Status Single Married	33 117	22% 78%
Total	150	100%
Educational Qualification Bachelor's Degree CAR M.A. Degree M.A. Degree Holder With Ph.D/Ed.D. CAR Ph.D./Ed.D. Ph.D./Ed.D. Holder	 57 28 40 13 10 2	 38% 18% 27% 9% 7% 1%
Total	150	100%
Field of Discipline Vocational Academic Both	 45 85 20	 30% 57% 13%
Total	150	100%
Position Classification Associate Professors Assistant Professors Instructors	 12 49 89	 8% 33% 59%
Teaching Experience Longer (21 years up) Shorter (1-20 years)	 91 59	 61% 39%
Total	150	100%

Data in Table 2 reveal that the faculty of CHMSC was taken as a whole and classified as to categories, which exhibited moderate extent with 40%-59% capability in terms of entrepreneurial and technical capability. In terms of Productivity capability, a low extent or 20-39% capability was exhibited by the college with the obtained mean score of 2.11.

2. The entrepreneurial capability as perceived by faculty members were as followed: social and cultural development support got the highest rank, familiarity next and research and development support.

3. The Technical capability as perceived by faculty members were as followed: production got the highest rank, followed by acquisition and the last rank to utilization.

4. The Productivity Capability as perceived by faculty members was to a low extent.

Table 2. Carlos Hilado Memorial State College entrepreneurial, technical and productivity capability as perceived by the college faculty members

Category	M	Interpretation	Description
Entrepreneurial Capability	3.04	Moderate extent	Exhibited 40-59% Capability
Technical Capability	3.00	Moderate Extent	Exhibited 40-59% capability
Productivity Capability	2.11	Low Extent	Exhibited 20-39% capability

5. No significant differences were found to exist in the perception of faculty members with regards to Entrepreneurial Capability when they are grouped as to age and gender, civil status, educational qualification, field of discipline, position classification and teaching experience.

6. No significant differences were found to exist in the perception of faculty members with regards to their Technical Capability when they are grouped as to age and gender, civil status, educational qualification, field of discipline, position classification and teaching experience.

7. No significant differences were found to exist in the perception of faculty members as to their Productivity Capability when they are grouped as to; age and gender, civil status, educational qualification, field of discipline, position classification and teaching experience.

Significant differences of the above statements were reflected in Tables 3 to 9.

Table 3. Test of significant difference on the entrepreneurial, technical and productivity capability of the college as perceived by the faculty members when they are grouped and compared according to age

	Entrepreneurial		Technical		Productivity	
	Older	**Younger**	**Older**	**Younger**	**Older**	**Younger**
Mean	88.41	87.02	88.85	85.48	31.55	29
N	106	44	106	44	106	44
Standard Deviation	24.21	19.16	26.74	19.20	14.76	14.19
Difference	1.3829		3.3718		2.5472	
Standard Error of the Difference	4.0990		4.4453		2.6176	
T	0.3374		0.7585		0.9731	
Tabular Value	1.645		1.645		1.645	

* Not significant at 0.05 level with df = N-2

Table 4. Test of significant difference on the entrepreneurial, technical and productivity capability of the college as perceived by the faculty members when they are grouped and compared according to gender

	Entrepreneurial		Technical		Productivity	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Mean	88.6111	183.50	90.89	86.16	32.89	39.63
N	54	96	54	96	54	96
Standard Deviation	27.99	939.72	27.73	22.88	15.91	13.74
Difference	-94.8889		4.7326		3.2639	
Standard Error of the Difference	128.1005		4.2067		2.4763	
T						
Tabular Value	-0.7407		1.1250		1.3181	
	1.645		1.645		1.645	

* Not significant at 0.05 level with df = N-2

Table 5. Test of significant difference on the entrepreneurial, technical and productivity capability of the college as perceived by the faculty members when they are grouped and compared according to civil status

	Entrepreneurial		**Technical**		**Productivity**	
	Married	**Single**	**Married**	**Single**	**Married**	**Single**
Mean	87.55	89.61	86.78	91.70	30.56	31.64
N	117	33	117	33	117	33
Standard Deviation	23.61	19.84	25.39	22.27	14.60	14.77
Difference	-2.0591		-.92		-1.0723	
Standard Error of the Difference	-4.5037		4.8785		2.8848	
T						
Tabular Value	-0.4572 1.645		-1.0083 1.645		-0.3717 1.645	

* Not significant at 0.05 level with df = N-2

Table 6. Test of significant difference on the entrepreneurial, technical and productivity capability of the college as perceived by the faculty members when they are grouped and compared according to educational qualification

Entrepreneurial Educational Qualification	Mean Score	N	Source	Sum of Squares	Df	Mean Squares	F-ratio	P-Value
Baccalaureate	90.84	57	Between	9168.62	5	1833.72	3.87	2.55
C.A.R	96.07	28	Within	68211.38	144	473.69		
M.A.	84.93	40	Total	77380	149			
w/Ph.D./Ed.D.	68.69	13						
C.A.R	81.60	10						
Ph.D./Ed.D.	113	2						
Total		150						
On the Technical	Mean Score	N	Source	Sum of Squares	Df	Mean Squares	F-ratio	P-Value

Baccalaureate	89.67	57	Be-tween	13018.82	5	2603.76	4.79	4.43
C.A.R	97.32	28	Within	78271.24	144	543.55		
M.A.	84.13	40	Total	91290.60	149			
w/Ph.D./Ed.D.	63.85	13						
C.A.R	90.60	10						
Ph.D./Ed.D.	121	2						
Total		150						
On Productivity	Mean Score	N	Source	Sum of Squares	Df	Mean Squares	F-ratio	P-Value
Baccalaureate	34	57	Be-tween	1758.43	5	351.69	1.69	0.14
C.A.R	26.14	28	Within	29973.57	144	208.15		
M.A.	32.03	40	Total	31732	149			
w/Ph.D./Ed.D.	27.31	13						
C.A.R	27.40	10						
Ph.D./Ed.D.	20	2						
Total		150						

*Not significant at 0.05 level with Df=N-6

Table 7. Test of significant difference on the entrepreneurial capability, technical and productivity of the college as perceived by the faculty members when they are grouped and compared according to field of discipline

Entrepreneurial Field of Discipline	Mean Score	N	Source	Sum of Squares	Df	Mean Squares	F-ratio	P-Value
Vocational	85.42	45	between	557.33	2	278.66		
Academic	88.57	85	Within	76822.67	147	522.60		
Both	91.40	20	Total	77380	149		0.53	0.59
Grand Mean	88.00	150						
Technical Field of Discipline	Mean Score	N	Source	Sum of Squares	Df	Mean Squares	F-ratio	P-Value
Vocational	86.91	45	between	132.11	2	66.06		
Academic	87.86	85	Within	91157.95	147	620.12		

Both	90.00	20	Total	91290.66	149		0.11	0.9
Grand Mean	90.00	150						
Productivity Field of Discipline	Mean Score	N	Source	Sum of Squares	Df	Mean Squares	F-ratio	P-Value
Vocational	30.40	45	between	660.11	2	330.05		
Academic	29.77	85	Within	31071.89	147	211.37		
Both	36.10	20	Total	31732	149		1.56	0.21
Grand Mean	**39.80**	**150**						

*Not significant at 0.05 level with DF=N-3

Table 8. Test of significant difference on the entrepreneurial, technical and productivity capability of the college as perceived by the faculty members when they are grouped and compared according to position classification

Entrepreneurial Position Classification	**Mean Score**	**N**	**Source**	**Sum of Squares**	**Df**	**Mean Squares**	**F-ratio**	**P-Value**
Instructor	90.74	89	between	2946.28	2	1473.14	2.91	0.06
Asst. Prof.	81.71	49	within	74433.72	147	506.35		
Asso. Prof.	93.33	12	total	77380	149			
Grand Mean	88.00	150						
Technical Position Classification	**Mean Score**	**N**	**Source**	**Sum of Squares**	**Df**	**Mean Squares**	**F-ratio**	**P-Value**
Instructor	90.10	45	between	1650.81	2	825.41	1.35	0.26
Asst. Prof.	83.10	85	within	89639.25	147	609.79		
Asso. Prof.	90.67	20	total	91290.06	149			
Grand Mean	87.86	150						
Productivity Position Classification	**Mean Score**	**N**	**Source**	**Sum of Squares**	**Df**	**Mean Squares**	**F-ratio**	**P-Value**
Instructor	30.75	45	between	796.10	2	398.05	1.89	0.15
Asst. Prof.	29.08	85	within	74433.72	147	210.45		
Asso. Prof.	38.17	20	total	77380	149			
Grand Mean	**30.80**	**150**						

*Not significant at 0.05 level with Df=N-3

Table 9. Test of significant difference on the entrepreneurial, technical and productivity capability of the college as perceived by the faculty members when they are grouped and compared according to teaching experience

	Entrepreneurial		Technical		Productivity	
	shorter	**longer**	**shorter**	**longer**	**shorter**	**Longer**
Mean	90.02	86.69	88.92	87.18	30.03	31.30
N	59	91	59	91	59	91
Standard Deviation	20.86	23.98	21.23	26.88	14.95	14.42
Difference	3.3324		1.7394		-1.2628	
Standard Error of the Difference	3.8121		4.1488		2.4453	
T	0.8721		0.4193		-0.5164	
Tabular Value	1.645		1.645		1.645	

* Not significant at 0.05 level with df = N-2

CONCLUSIONS

In view of the findings of the study, the following conclusions were advanced.

1. Faculty members of CHMSC were actively involved in income generation activity utilizing expertise of fellow teachers and nonteaching personnel.
2. Entrepreneurial Capability of faculty members should be further maintained and sustained in line in line with familiarity, research and development support; and social and cultural development support.
3. Technical capability of faculty members must be geared towards income generation to further support the need of the college along its acquisition, utilization and production.
4. The college should allocate capital investment for Productivity Capability in order to encourage faculty members to be actively involved in resource generation development plan.

5. Faculty members of CHMSC seem to have manifested positive entrepreneurial and technical capability worthy of technical support of the college administration.
6. Resource Generation Development Plan should be monitored and evaluated periodically to determine strengths and weaknesses of program implementation.

RECOMMENDATIONS

Based on the findings and conclusions of the study the following recommendations are forwarded.

1. CHMSC should utilize all the faculty members to formulate at least one propose resource generation development plan focusing on its entrepreneurial and technical capability.
2. CHMSC should produce well, in terms of the raised items on Productivity for all faculty members are capable of doing so.

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