Virtual Classroom Learning Environments Support K-12 Education Curriculum among Senior High Students

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This study aimed to assess the Virtual Classroom Learning Environment Management Support Facilities among Senior High Students at the Tawi-Tawi Regional Agricultural College in Bongao Municipality in Tawi-Tawi and the implementation readiness of K-12 Enhanced Basic Education Curriculum. This study was conducted at the Tawi-Tawi Regional Agricultural College senior High students in the same institution. The conduct of the study was the descriptive survey technique utilising the accessibility of the researchers based on the ethics of research. A simple random sampling procedure was used in selecting the respondents from the total population. This was used in order to avoid biases in the selection processes. Findings revealed that the level of computer literacy was reported as strongly agreed; the level of teaching competency with respect to all indicators was very satisfactory; and there was no significant influence of the computer literacy on the level of teaching competencies with respect planning, teaching methods and evaluation, communication with the learners and learning reinforcement and professional standards. However, there was a significant influence of the computer literacy on teaching competency in relation to instructional strategies, techniques and methods. Furthermore, the school administrator should have the courage to fully implement and give full support in the implementation of the in-service training program in order to improve teachers' career advancement, potential and capability.

Key words: *Virtual classroom, learning environment, basic education, curriculum management, instruction, Tawi-Tawi Regional Agricultural College, Philippines.*

Introduction

Virtual classroom learning environment is the most proliferated global management in the educative process and its extensive presence assumes a very important role in effecting a productive instructional learning efficiency. It is a key to all educative learning activities in a large measure of education and the schools, be it a state college and university private or public institution. Today's educational processes of conducting the pupil activity in an academically oriented discipline is a framework of time devoted to discourses of question-and-answer activities. In the modern teaching leaning processes, "Outcome Based-Education is contextualised as an index of efficient teaching learning process and conceptualisation of ideas taught to the learners by the teachers who lead the driving force in the classroom. Therefore, it is imperative that the teacher in the classroom should be adequately prepared in his field of disciplines. The classroom should be also highly equipped virtually, with the necessary technological instructional facilities with complete learning accessories capable of sourcing/surfing, reaching/searching or researching in a proliferated global learning environment generative of information and educational development of relevance. Further, the teacher should also have a clear learning contextualisation of all the facilities include its techno-accessories and its legal basis, its "rule in stimulating, directing, guiding, and encouraging the learner" (Biste, 2015).

To address such a case inherent in the demands to provide virtual classroom learning conditions, the teacher should have mastery of the subject matter and is highly proficient in his thinking/rethinking in the process. Unless teacher has made an intimate internalisation of the subject disciplines successful questioning is not at all times possible. Likewise, the teacher must have a sense of relative values to handle queries and responses in classroom discourse with the students to the best advantage. The ability to drive questions skilfully are inherent for the professor with strong self-confidence in conceptualising the essential questioning.

"Computer literacy" is a term used in the business world. In general, a program is applied to make people knowledgeable about the computer and its applications (Rochester & Rochester, 1991). It is the ability to use computers and related technology efficiently. Computer literacy can also refer to the comfort level someone has with using computer programs and other applications that are associated with computers. Another valuable component is understanding how computers work and operate. Computer literacy may be distinguished from computer programming which is design and coding of computer programs rather than familiarity and skill.

In developed countries, computer literacy is considered to be a very important skill to possess. Employers want their workers to have basic computer skills as their company is

likely dependent on computers. Many companies try to use computers and other technology to improve business efficiency. Computers are just as common as pen and paper are for writing, especially among youth. There seems to be an inversely proportional relationship between computer literacy and compositional literacy among first world computer users. For many applications, especially communicating, computers are preferred over pen, paper, and typewriters because of their ability to duplicate and retain information and ease of editing.

As personal computers become commonplace and they become more powerful, the concept of computer literacy is moving beyond basic functionality to more powerful applications under multimedia literacy or new literacies. It is frequently assumed that as computer and Internet access is common-place in the first world, everyone in those countries must have equal and ready access to this technology and to skills to effectively use it. There is, however, a significant digital divide in even the most technologically advanced and enabled countries, with digital haves and have-nots. Older workers who do not use the internet at home and are computer illiterate may be frozen out of the job market even for relatively unskilled jobs such as clerking in an auto parts store.

Student academic performance is monitored closely so as to identify early any student whose performance is likely to lead to academic failure. The Faculty works with individual students to provide academic guidance to maximize the chances of all students succeeding. Two kinds of academic performance review take place, one at the end of a term and another at the end of both the winter and summer session. Both kinds of reviews evaluate recent academic performance in light of past performance but cumulative average over more than one session is not assessed.

The review at the end of a term will identify students at risk of academic failure as described below under Students at Risk. The same of each session (winter and summer) will determine whether or not a student can continue in the next session and under what conditions.

Further, academic performance must also be enriched the learning capabilities of students so computers would also influence them desirably or undesirably. Hence, this study hypothesises that computer literacy influences academic performance, especially under the new global order.

This research is conducted on the pretext of some studies finding that institutional management of classroom instruction through a well- equipped virtual classroom learning environment that is fully equipped hi-tech supports facilities had enormous increases in academic performances of children and learning has been found to have increased efficiency of students' learning in the usual subject areas and had fostered personality development.

In other words, teachers of varying intellectual abilities teaching with a fully equipped virtual learning environment and other cognitive characteristics always operate in particular school situation successfully.

Quality of teaching forces has enhanced the quality of basic education, which is urgent and critical in national development and has shifted the paradigm of the government towards enhancing the basic quality of education curriculum. This trend is parallel with the demand to address the poor quality of basic education. A low achievement score of Filipino students in any of the national government educational measures of reform doted the change. The curriculum expert pointed out to the congested curriculum of the present educational system counts. Likewise, poor quality educational percentile ranks have reflected inadequacy of preparation of high school graduates for a world-class professional and entrepreneurship to achieve excellence and a boasted economy. Curriculum makers pointed out that the insufficient quality of basic education program affects the human development of the Filipino children.

Responsive to such needs, the K to 12 basic education programs must improve the competitiveness of the country graduates as the ten-years basic education cycle is seen as not ready for work or for higher education (Biste, 2016).

Related Literature

The theoretical framework of this study is supported by the Framework and DepEd Order No. 43, s. 2013 entitled Implementing Rules and Regulations of Republic Act No. 10533 otherwise known as the Enhanced Basic Education Act of 2013:

"*the Department of Education (DepEd) is adopting the enclosed Indigenous People Education Curriculum Framework; Recognizing the right of indigenous peoples to basic education that is culturally rooted and responsive; the IPED Curriculum Framework seeks to provide guidance to schools and other education program; both public and private; as they engage with indigenous communities in localizing; indigenizing; and enhancing the K+12 Curriculum based on their respective educational and social contexts; Fundamental to IPED is establishing institutionalized partnership between indigenous communicates and the respective schools/learning programs which serve them.*"

The Enhanced Basic Education Act (Section 5) further stipulates that the basic education curriculum shall be: learner-centered, inclusive, relevant, responsive culture-sensitive, contextualised, and flexible enough to enable and allow schools to localise, indigenise and enhance the same based on their respective educational and social contexts. The use of

pedagogical approaches that are constructivist, inquiry-based, reflective, collaborative, integrative is likewise mandated. These standards and principles guide the efforts of DepEd in maintaining a basic education system that is inclusive, equitable and culture-based.

For indigenous communities, culture-based education would mean one that is grounded in the context of their community life, recognises their IKSPs, and is inclusive of their cultural perspectives. These are foundational to the National IPEd Policy Framework which recognises that understanding and appreciating culture is vital to the education of indigenous communities, and thus, the adoption of appropriate basic education pedagogy, content, and assessment through the integration of Indigenous Knowledge System and Practices (IKSPs) in all learning areas and processes (DO62, Section 15(b)). At present, the IPEd Program of DepEd is mandated to pursue action to realise the intent of the said policy framework, which provides guidance on the implementation of the K+12 Basic Education Curriculum as appropriate in the context of indigenous communities. In this respect, for schools and learning programs in indigenous communities or with indigenous learners, K+12 are IPEd, as guided by DO62.

Putting Education to Work, mentioned that making secondary education more relevant to the world of work by strengthening the links between school and work through work-based learning, that is supervised industry training, industry immersion, applied learning, structured field trips and on-the-job will provide equal opportunities for all youth to develop transferable and technical and vocational skills to find a good job or for further education. It is the way of integrating skills equally and tailoring them to the need of the local market which provides a good curriculum balanced for all. The skills mismatched with jobs require not only up skilling but also right skilling that balances high, medium and low skills. It provides strong foundational skills of literacy and numeracy that are a prerequisite for effective advanced training. The soft skills such as critical thinking, communication, and collaboration facilitate more effective use of technical skills. Skills training need to be complemented with employment services such as placement, internships, and apprenticeships to strengthen the link of training system with the world of work (Valles, 2013).

The Digital Inclusion Forum, a consortium set up through joint participation from the Wireless Internet Institute, IBM, Intel, Microsoft and Ohio's One Community, is just one organisation developed to address this. Their organisational mission in this is to provide a "comprehensive resource center to inform, educate and share best practices among state and local government leaders, industry and institutional stakeholders on identifying and implementing sustainable market solutions to bridge the digital divide in North America." A variety of private sector, non-profits and foundations also contribute to this, in addressing the needs of underserved communities. *Per* Scholars run programs offering free and low cost computers to children and their families in underserved communities in the South Bronx,

New York, Miami, Florida and in Columbus, Ohio. Such knowledge appears to have two dimensions: conceptual, and operational according to Winter, Chudoba, & Gutek, 1997. The conceptual dimension includes an understanding of the inner workings of a computer or general computer terminology. Without such knowledge a user would find it difficult to figure out any system problems, or to adapt quickly to new systems or software. The operational dimension refers to the necessary skills a user acquires through training and practice, in order to operate specific systems to complete specific tasks. While prior research did not evaluate the performance impact of computer literacy empirically, there is evidence that such a performance impact is likely to be task-dependent (Goodhue & Thompson, 1995; Lonstreet & Sorant, 1985; Rhodes, 1985; Thompson, Higgins, & Howell, 1994). For example, if we considered a student to be highly computer literate because she/he demonstrated a high level of proficiency in using a word processor or a spreadsheet program, we would also expect the student to perform well on tasks involving the use of a word processor or a spreadsheet program predictable for the students to perform on tasks involving the use of a database program. If students had not received training in the database software, this would lead to the inefficiency.

Objective of the Study

This study aimed to assess the virtual classroom learning environment management supports facilities and the implementation of K to 12 Basic Education Curriculum. It specifically, aimed to determine (a) the level of Virtual Classroom Learning Environment Management Support Facilities among Senior High Students at the Tawi-Tawi Regional Agricultural College; (b) the level of K-12 enhanced basic education curriculum management efficiency of instruction among Senior High students at the Tawi-Tawi Regional Agricultural College; and (c) the significant influence of the level of Virtual Classroom Learning Environment Management Support Facilities on the K-12 Enhanced Basic Education Curriculum Teaching Competency among Senior High students at the Tawi-Tawi Regional Agricultural College.

Methodology
Research Design

Purely descriptive design was used in planning, organising and developing the methodology of the study. The former was used because the nature of the study fits the analysis. Similarly, the design allowed the researchers to collect information from the population through the representative sample.

Research Locale

This study was conducted at the Tawi-Tawi Regional Agricultural College with Senior High students in the same institution.

The conduct of study was descriptive survey technique utilising the accessibility of the researchers based on the ethics of research.

Sampling Design

A simple random sampling procedure was used in selecting the respondents from the total population. This was used in order to avoid biases in the selection processes.

Research Instrument

A closed-ended questionnaire design was used. The questionnaire was divided into three parts. Part I about the demographic profiles of the respondents. Part II centered on the virtual classroom-learning environment (computer Literacy supports facilities management). Part III related to K-12 Basic Education Curriculum Management of Instruction in terms of Teaching Competency based solely in Tawi-Tawi Regional Agricultural College in Nalil, Bongao, Tawi-Tawi.

Data Analysis

The data gathered were statistically analysed by both descriptive and inferential statistics. Descriptive statistics namely, frequency and percentage distributions were used to analyse the demographic profiles of the respondents. The virtual classroom learning management supports facilities (computer literacy practices) and the implementation of the K-12 Basic Education curriculum teaching competency were analysed by mean and standard deviation. Test of significant influence of the virtual classroom learning environment management supports facilities on the implementation of K-12 Basic Education Curriculum teaching competency was done through a regression ($R2$) analysis set up at five percent level of confidence probability.

Results and Discussion

The level of Virtual Classroom Learning Environment Management Support Facilities among Senior High Students at the Tawi-Tawi Regional Agricultural College

Table 1: Presents the Level of Virtual Learning Environment (Computer Literacy) N = 50

COMPUTER LITERACY	MEAN	SD	VD
1. I have knowledge to open Computer	4.50	.505	Strongly Agree
2. I know how to make a new Folder	4.60	.495	Strongly Agree
3. I know how to copy a file	4.60	.495	Strongly Agree
4. I know how to save file	4.60	.495	Strongly Agree
5. I can encode data	4.60	.495	Strongly Agree
6. I know how to make a table	4.56	.501	Strongly Agree
7. I know how paste the file I copied	4.60	.495	Strongly Agree
8. I have knowledge how to Justify the encoded data	4.58	.499	Strongly Agree
9. I know how to insert page Number	4.62	.490	Strongly Agree
10. I have knowledge how to Arrange alphabetically	4.56	.501	Strongly Agree
11. I know how to print the Encoded data	4.66	.479	Strongly Agree
12. I know how to recover the lost data	4.58	.499	Strongly Agree
13. I know how to search the missing data	4.58	.499	Strongly Agree
14. I have knowledge how to change the font	4.62	.490	Strongly Agree
15. I have know how to exit	4.60	.495	Strongly Agree

Grand Mean	4.59		Strongly Agree
Legend:			
Scale	Mean Range		Category
5	4.01 – 5.00		Strongly Agree
4	3.01 – 4.00		Agree
3	2.01 – 3.00		Moderately Agree
2	1.01 – 2.00		Disagree
1	0.00 – 1.00		Strongly Disagree

Table 1 reflects the level of computer literacy. As shown in the table, the assessment of the respondents produced the means that ranged from 4.50-4.62 with the standard deviation ranging from .495-.505. The grand mean is 4.59. Thus, the level of computer literacy was reported as strongly agreed.

The level of K-12 enhanced basic education curriculum management efficiency of instruction among Senior High students at the Tawi-Tawi Regional Agricultural College

Table 2: The Level of K-12 EBEC Teaching Competency N = 50

	Grand Mean	VD
I. Planning, Teaching Materials and Evaluation	4.55	Very satisfactory
II. Instructional strategies, Techniques and Methods	4.58	Very satisfactory
III. Communication with learners	4.56	Very satisfactory
IV. Learning Reinforcement and Professional Standards	4.58	Very satisfactory

Legend:		
Scale	Mean Range	Category
5	4.01 – 5.00	Very satisfactory
4	3.01 – 4.00	satisfactory
3	2.01 – 3.00	Average
2	1.01 – 2.00	Poor
1	0.00 – 1.00	Very poor

Planning, Teaching Materials and Evaluation

The indicators were plans unit of instruction, plans instruction at a variety of cognitive level, ability to state pupils outcome, identifies and evaluate learning problems of pupils in the content area being taught, keeps informed of current professional subject areas, knows how to select appropriate instructional materials, uses criteria and effective procedures for determining pupils achievement of learning objectives, select appropriate assessment techniques and instruments for instructional. The activities were: maintains evaluation records and uses information about effectiveness of instruction to revise it. The assessment of the respondents produced the means that ranged from 4.48-4.64 with the standard deviation ranging from.495-.505. The grand mean is 4.55 and this was considered as very satisfactory category.

Instructional Strategies, Techniques and Methods

The indicators under instructional strategies, techniques and methods uses a variety of instructional strategies to develop and demonstrate problem solving skills, modifies instructional activities to accommodate identifies learners needs, demonstrate abilities to work with individual needs, structures the use of time to facilitate students learning, uses of variety of resources and materials, provides learning experiences that enables students to transfer principles to situation outside of school, provides assignment/learning opportunities interesting and appropriate to different ability level, demonstrate knowledge in the subject

areas, and uses acceptable written and oral expression with students. The assessment of the respondents produced the means that ranged from 4.54-4.62 with the standard deviation ranging from .490-.503. The grand mean is 4.58 and this was considered as very satisfactory category.

Communication with Learners

With respect to communication with the learners, the indicators were provides group communication, gives clear directions and explanations, motivate students to ask question, uses questions that lead students to analyse, synthesise and think critically, demonstrate proper listening skills, provide feedback to learners on their cognitive performance, and expresses a positive personal attitude towards teaching profession. The assessment of the respondents produced the means that ranged from 4.52-4.50 with the standard deviation ranging from .485-.505. The grand mean is 4.56 and this was considered as very satisfactory category.

Learning Reinforcement and Professional Standards

Finally, the indicators in relation to learning reinforcement and professional standards were maintain an environment in which students are actively involved working on task, implements and effective classroom management system for positive students behaviour, uses positive reinforcement pattern with students, assists students in discovering and correcting errors and inaccuracies, develops students feedback, evaluation skills and students self-evaluation, accept responsibility is dependable, evidences cooperation with others, acts as an appropriate model in terms of ethics, attitudes and values, attends teachers and professional meetings, and understand and follow school law, policies and procedures. The assessment of the respondents produced the means that ranged from .452-.460 with the standard deviation ranging from .495-.503. The grand mean is 4.58 and this was considered as very satisfactory category.

Thus, the level of teaching competency with respect to all indicators was very satisfactory.

The significant influence of the level of Virtual Classroom Learning Environment Management Support Facilities on the K-12 Enhanced Basic Education Curriculum Teaching Competency among Senior High students at the Tawi-Tawi Regional Agricultural College

There was no significant influence of the computer literacy on the level of teaching competencies with respect to planning, teaching methods and evaluation, communication with the learners and learning reinforcement and professional standards. However, there was

a significant influence of the computer literacy on teaching competency in relation to instructional strategies, techniques and methods.

1. Having knowledge to open a computer revealed a regression coefficient of -.008 with a standard error of .074 and a t-value of -.108, which was not significant with probability level of .914.
2. Knowing how to make a new folder revealed a regression coefficient of -.004 with a standard error of .087 and a t-value of -.042, which was not significant with a probability level of .967.
3. Knowing how to copy a file revealed a regression coefficient of -.060 with a standard error .077 and a t-value of -.784, which was not significant with probability level of .439.
4. Knowing how to save file revealed a regression coefficient of .053 with a standard error of .084 and a t-value of .629, which was not significant with probability level of .533.
5. Encoding data revealed a regression coefficient of -.051 with a standard error of .088 and a t-value of -.578, which was significant with probability level of .567.
6. Knowing how to make a table revealed a regression coefficient of .015 with a standard error of .095 and a t-value of .163, which was not significant with probability level of .871.
7. Knowing how to paste the file being copied revealed a regression coefficient of -.146 with a standard error of .096 and a t-value of -1.624, which was not significant with probability level of .137.
8. Having knowledge how to justify the encoded data revealed a regression coefficient of -.154 with a standard error of .077 and a t-value of -1.999, which was not significant with probability level of .054.
9. Knowing how to insert page number revealed a regression coefficient of .049 with a standard error of .103 and a t-value of .481, which was not significant with probability level of .634.
10. Having knowledge has how to arrange alphabetically revealed a regression coefficient of .022 with a standard error of .074 and a t-value of .290, which was not significant with probability level of .774.
11. Knowing how to print the encoded data revealed a regression coefficient of .032 with a standard error of .074 and a t-value of .432, which was not significant with probability level of .668.
12. Knowing how to recover the lost data revealed a regression coefficient of -.012 with a standard error of .095 and a t-value of -.130, which was not significant with probability level of .897.

13. Knowing how to search the missing data revealed a regression coefficient of .063 with a standard error of .072 and a t-value of .874, which was not significant the probability level of .388.

14. Having knowledge how to change the font revealed a regression coefficient of .026 with a standard error of .086 and a t-value of .302, which was not significant with probability level of .764.

15. Knowing how to exit revealed a regression coefficient of .069 with a standard error of .074 and a t-value of .931 and this was not significant with probability level of .3589. The coefficient of determination is .246 or 24.6% with an f-value of .739 and this was not significant at probability of .729. Thus, 24.6% of the improvement of level of teaching competency with respect to learning reinforcement and professional standards was explained by computer literacy. Therefore, the null hypothesis is accepted with respect to this indicator.

Conclusions

Based on the results, it is claimed that the level of virtual classroom learning environment in terms of computer literacy was reported as strongly agreed. Level of K-12 Enhanced Basic Education Curriculum Management Efficiency of Instruction in terms of teaching competency with respect to all indicators was very satisfactory. And there was no significant influence of the computer literacy on the level of competencies with respect to all indicators.

Recommendations

For the purpose of enhancing the results of the study, the school administrator should have the courage to fully implement and give full support in the implementation of the in-service training program in order to improve teachers' career advancement, potential and capability.

The teachers should find time to avail themselves with any in-service training conducted by their school if they want to become effective and efficient in the teaching their pupils.

Computer literacy should be conducted by the college should be properly planned and organised in order to fit and satisfy the needs and interests of the teachers.

Computer literacy that would be provided by college to the faculty members should focus on the improvement of teachers in as far as teaching and classroom instruction is concerned.

The teachers should also be encouraged to avail themselves with the study leave program initiated by the school. This is one way to further achieve their professional needs.

REFERENCES

Aquino, Guadencio V. (2003). Effective Teaching, Third Edition. National BookStore, Quart Alpha Centrum Bldg, 125 Pioneer St., Mandaluyong City, Philippines.

Dagoon, D. J. (2003). Textbook for Teaching MAKABAYAN Subjects, Vocational Education, and Technology for College, Teaching Strategies in Livelihood and Vocational Education Today. Second Edition, Rex Book Store

Goodhue, D.L., & Thompson, R.L. (1995). Task-technology fit and individual performance. MIS Quarterly, (19)2, 213-236.

Lonstreet, W.S., & Sorant, P.E. (1985). Computer literacy - Definition? Education Horizons, (63)3, 117-120.

Rochester, J. & Rochester, J. (1991). Computer for People: Concepts and Applications, Homewood, IL: Irwin

Rhodes, L.A. (1985). Moving beyond computer literacy. Educational Leadership, (42)5, 88-89.

Thompson, R.L., Higgins, C.A., & Howell, J.M. (1994). Influence of experience on personal computer utilization: Testing a conceptual model. Journal of Management Information Systems, (11)1, 167-187.

Valles, Milagros C. (2013). https://www.deped.gov.ph/2012/05/09/do-36-s-2012-guidelines-on-the-2012-implementation-of-the-senior-high-school-shs-modelling-in-selected-technical-and-vocational-education-and-general-secondary-schools-under-the-k-to-12-basic-ed/

Winter, S., Chudoba, K. & Gutek, B. (1997). Misplaces Resource? Factors Associated with Computer Literacy Among End Users. *Information & Management Review*, 32, 29-42.